SELF – EVALUATION REPORT

Faculty of Veterinary Medicine
Estonian Agricultural University

Tartu
June 2004

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INTRODUCTION

ESTONIAN HIGHER EDUCATION SYSTEM

1. GENERAL FRAMEWORK

Higher education is primarily regulated by the Universities Act, the Institutions of Applied Higher Education Act, and the Private Schools Act.

The Estonian higher education system is binary and consists of universities (*ülikool*) and applied higher education institutions (*rakenduskõrgkool*). Some vocational schools also have the right to offer professional higher education programmes. Based on the form of ownership, institutions of higher education can be divided into state, public, and private institutions.

Since the academic year of 2002/2003, the general structure of the higher education system has been based on two main cycles, following the undergraduate-graduate model. The first cycle is the bachelor level; the second cycle is the master level. For some specialities, the study programmes have been integrated into a single long cycle, leading to master-level qualifications. The highest stage at universities is doctorate studies. Applied higher education programmes constitute the first stage of the higher education system and correspond to bachelor-level programmes.

Universities provide academic higher education and may offer also professional higher education programmes. Institutions of applied higher education provide professional higher education and may offer master-level programmes in the field of theology and defence or in other fields in cooperation with universities.

2. ACCREDITATION AND RECOGNITION OF QUALIFICATIONS

Accreditation is a process in the course of which an institution of higher education or its study programme is evaluated. The Higher Education Quality Assessment Council carries out accreditation in cooperation with foreign experts. The term of validity of a positive accreditation decision is seven years. A conditional accreditation decision is also a positive decision being valid for three years.
Qualifications awarded to students who have completed a study programme that has been accredited positively, as well as the qualifications that have been awarded up to two years before a positive accreditation decision, are deemed to be recognised by the state. Diplomas of public universities awarded upon the completion of study programmes that were registered before 1 June 2002, as well as diplomas awarded upon the completion of professional higher education programmes that were registered before 30 June 2003 enjoy state recognition even without being accredited.

3. ADMISSION REQUIREMENTS

3.1. General requirements

The general admission requirement of an institute of higher education is secondary education evidenced by a respective certificate – secondary school leaving certificate, certificate of acquiring secondary vocational education, or other certificates and diplomas and foreign qualifications giving access to higher education.
The secondary school leaving certificate (*gümnaasiumi lõputunnistus*) is awarded after 12 years of studies (9 years of basic education and 3 years of secondary education).

Since 1997 secondary-school students have had to pass national examinations (three examinations). The *gümnaasiumi lõputunnistus* is valid with the state examination certificate – *riigieksamitunnistus.*

3.2. Specific requirements

In addition to general requirements, an institution of higher education may set specific entry requirements such as entrance examinations, results of state examinations, entry tests, interviews, etc.

4. ORGANIZATION OF THE COURSE OF STUDIES

The Standard of Higher Education establishes general requirements for studies, curricula, and academic staff. The nominal duration of studies is measured in academic years, and the scope of the curriculum is calculated in credit points (*ainepunkt*, or AP). One credit point corresponds to forty hours of studies (one study week) for a student. One academic year consists of 40 credit points, which corresponds to 60 credits of the European Credit Transfer System (ECTS).

5. HIGHER EDUCATION QUALIFICATIONS

5.1. Professional higher education qualifications

Professional higher education is the first stage of higher education, established together with the admission of 2002/2003, which aims at acquiring the competencies necessary for work in a certain profession or further study at the master's level. The nominal duration of study is from 3 to 4.5 years, 120 to 180 AP (180 to 240 ECTS credits). Upon completion of studies graduates are awarded a diploma (on a bluish-gray form, marked with E) certifying the completion of the professional higher education programme – *rakenduskõrgharidusõppe diplom*.
Professional higher education studies developed from higher vocational education studies and diploma studies until the academic year of 2002/2003. The aim of **higher vocational education studies** was to acquire general education as well as professional and occupational knowledge and skills. **Diploma studies** were of applied content, the purpose of which was to acquire practical knowledge and skills. The nominal length of both studies was 3 to 4 years. Higher vocational education and diploma studies differ in their requirements for teaching staff and the scope of practical training. Upon completion graduates are awarded a diploma of the respective study programme. The qualifications are called *kutsekõrgharidusõppe diplom* (higher vocational education diploma, on a yellow form, marked with K) and *diplomiõppe diplom* (diploma study diploma, on a green form, marked with A), respectively.

5.2. Bachelor's degree

Bachelor studies constitute the first level higher education study. Their aim is to increase students' level of general education, to acquire basic knowledge and skills in the chosen speciality in order to pursue further studies at the master's level and to start work. The nominal duration of studies is usually three years, 120 AP (180 ECTS credits). In a few specialities they may take 4 years, 160 AP (240 ECTS credits).
The main aim of the bachelor programmes registered before 1 June 2002 was to develop theoretical knowledge and skills in the selected work area. The completion of the

programme granted the right to work in a position requiring high-level specialist qualifications. The nominal duration of studies was usually four years; together with teacher training it could be extended up to five years. The university has the right to decide whether the completion of a programme registered before 1 June 2002 is acceptable as part master's studies.
Graduates are awarded a degree – *bakalaureusekraad* 'bachelor's degree' – which is certified by a diploma (on a greenish yellow form, marked with L; diplomas of programmes registered before 1 June 2002 are on a blue form, marked with B).

5.3. Master's degree

Master's studies constitute the second level of higher education when speciality knowledge and skills are developed further, and knowledge and skills necessary for independent work and pursuing studies at the doctor's are acquired. The main purpose of the master's studies is to train specialists with deep theoretical knowledge. The admission requirement is the *bakalaureusekraad* 'bachelor's degree' or an equivalent level of qualification. The nominal duration of studies is one or two years, 40 to 80 AP (60 to 120 ECTS credits), but along with the first stage it takes at least five years, 200 AP (300 ECTS credits).
Upon completing master's programmes registered before 1 June 2002, a *magistrikraad* 'master's degree' is awarded either as a research or professional degree. Research constitutes at least 50 per cent of the studies in a research master's programme, and the final thesis presents a novel scientific treatment of a speciality problem. Research, development, or creative work constitutes at least 25 per cent of the scope of studies in the professional master's programme, and the studies are aimed at finding a novel solution to a professional or creative problem. Under the conditions and in the manner established by the university the completion of a master's programme registered before 1 June 2002 can be regarded as part of doctoral studies.
Graduates are awarded *magistrikraad* 'master's degree', which is certified by a diploma (on a silver form, marked with M; diplomas of programmes registered before 1 June 2002 are on a brown form, marked with C).

5.4. Integrated long-cycle programmes

The integrated long-cycle studies contain both bachelor and master level studies. Completion of the study programme provides a qualification corresponding to the *magistrikraad* 'master's degree'. Such studies are characteristic of medicine, veterinary medicine, pharmacy, dentistry, architecture, civil engineering, and teacher training. The nominal duration of medical studies is 6 years, 240 AP (360 ECTS credits). Starting with the academic year 2002/2003 also veterinarian studies also last for six years. In other fields the duration of studies is five years, 200 AP (300 ECTS credits).
Upon completion of the programme graduates are awarded a diploma (on a silver form, marked with M; diplomas of programmes registered before 1 June 2002 are on a brown form, marked with C) certifying the completion of the respective integrated programme. The *magistrikraad* master's degree' may be awarded by a decision of the University.

5.5. Doctorate

Doctoral studies constitute the highest stage of higher education aimed at acquiring knowledge and skills necessary for independent research, development, or professional

creative work. The general admission requirement for doctoral studies is the *magistrikraad* 'master's degree' or an equivalent qualification. The nominal duration of studies is from 3 to 4 years, 120 to 160 AP (180 to 240 ECTS credits).
Graduates who have completed their studies are awarded a degree – *doktorikraad* 'doctorate', which is certified by a diploma (on a golden form, marked with O; diplomas of programmes registered before 1 June 2002 are on a white form, marked with D). The degree is a research degree for which the candidate has to write and defend a doctoral thesis – independent scientific research or creative work.

6. VETERINARY EDUCATION IN ESTONIA

In Estonia veterinary surgeons have been trained continuously since the establishment of Tartu Veterinary School in 1848 with Professor Peter Jessen as its head. In 1873–1918 the school was called Tartu Veterinary Institute. Tartu Veterinary School had 112 and Tartu Veterinary Institute 1,630 graduates. The first Estonian dairy studies were conducted at the Veterinary Institute in 1900–1907 under the supervision of Prof Karl Happich. Tartu Veterinary School initiated the teaching of meat hygiene in the 1850s.
The year 1919 saw the establishment of the Faculty of Veterinary Medicine on the basis of Tartu Veterinary Institute, where Estonian was first used as the language of tuition. In 1951 independent Estonian Agricultural Academy was set up on the basis of the Faculties of Agriculture, Forestry, and Veterinary Medicine of Tartu University. In 1960 the Department of Meat and Dairy Products was attached to the Faculty of Veterinary Medicine. In 1991 Estonian Agricultural Academy was reformed to the Estonian Agricultural University. In 1994 the Estonian Research Institute of Animal Husbandry and Veterinary Medicine was integrated to the Estonian Agricultural University. Its departments of Veterinary Medicine and Reproductive Biology were amalgamated into the Faculty of Veterinary Medicine.
During the past 45 years over 2,000 people have received their higher veterinary education at the Faculty of Veterinary Medicine. This number of veterinary surgeons has met the needs of Estonia. Today our graduates hold almost 100 per cent of the positions in Estonia that require a higher veterinary education.
In 1968–1987 students were admitted from all over the Soviet Union. Therefore, our graduates work also in a number of independent countries that came into existence after the collapse of the Soviet Union.
International students from Finland and Sweden have been enrolled at the Faculty of Veterinary Medicine since 1990. As of now 38 Finnish students and one Swedish student are enrolled at the Faculty.
In 2003 the faculty admitted 40 students within the framework of state-funded tuition in veterinary medicine (there are 25 state-funded student places per year). In addition, three Estonian and 12 Finnish citizens were admitted as fee-paying students. Until 2001 the study duration in veterinary medicine was 5 years. Starting with 2002 the study duration is 6 years, which enables a student to focus on an in-depth specialization during the final year.

6.1. Recent organizational changes

Until 2003 the faculty was composed of institutes, which in essence was a vague and poorly functioning structure because of the fragmentation of the units dealing with preclinical and clinical instruction.

In 2003 the University introduced a new structure that is based on departments: Department of Animal Health, Department of Morphology, Department of Infectious Diseases, Department of Therapy, and Department of Food Hygiene. This structural change allows to improve the teaching of related disciplines and to integrate precilinical and clinical subjects. In addition, the Faculty includes the Department of Food Science that teaches the technology of meat and dairy products. The Department of Reproductive Biology that conducts research into reproduction joined the Faculty of Veterinary Medicine in 1995. The department has focused on the elaboration and improvement of methods of artificial insemination that would be suitable for Estonian bovine animals, reproductive disorders, gynaecological diseases, and embryotechnology. The Open University together with the continuing education coordinator of the Faculty are responsible for the continuing education of veterinary surgeons.
Until this year the Animal Clinic was an independent unit in the structure of the Faculty of Veterinary Medicine. In 2004 the Council of the Faculty of Veterinary Medicine decided to attach the Animal Clinic to the Department of Therapy in order to improve the teaching of clinical subjects.

6.2. Changes in the teaching process

The most radical change of recent years is transition to the six-year study that started in the autumn term of 2002, which brought about an increase in the scope of the curriculum from 200 credit points (AP, equalling 300 ECTS) to 240 credit points (360 ECTS).
The years 2003–2004 saw the improvement of clinical teaching and practice on the basis of the clinic (mobile clinic, 24h duty, with the involvement of students). Now fieldwork is organized on a systematic basis, and the quality control methods of fieldwork have been improved. The curriculum has been improved on a regular basis in accordance with the EAEVE requirements.

6.3 New buildings and technical equipment

The teaching of basic, preclinical, and a large part of the clinical subjects takes place at the complex of the Faculty of Veterinary Medicine located at Kreutzwaldi 62. According to the construction assessment carried out in 2000, the buildings were in an unsatisfactory condition. Functionality, size, and the condition of the rooms failed to meet the EAEVE requirements. Of the total area of 7,812.8 m^2 only 260 m^2 met fully the requirements, 223.5 m^2 met the requirements partly. The designing of the new clinic and the renovation plan of the existing rooms was started in 2002. To this end the Estonian state allocated 490 000 €. The design work was completed in the first half of 2003. The autumn of 2003 witnessed the beginning of the construction of new clinics, small and large animal hospitals, the complex of anatomy and pathological anatomy, and the dissection room. For this purpose the state allocated 1.8 m € from the state budget. The construction was planned to be carried out in three stages. Stage one: a new stationary for small and large animals together with a full-size manege and the complex of anatomy and pathological anatomy. Stage two would see the construction of the new animal clinic, and the rest of the rooms would be renovated during stage three. In total the state has allocated 6 m € into the construction. The first construction stage was completed in March 2004, the second stage will be completed in August 2004, and the third stage has to be completed by the end of 2004.

The teaching and research equipment of the Faculty of Veterinary Medicine had been obtained mostly in 1970–1990, which means that it was largely outdated and needed replacement and supplementation. Therefore, in recent years the faculty has been active in seeking various, especially non-state-budget funding opportunities. EU PHARE projects ES01.02 “Competence Centre of Veterinary Public Health“ and CRIS No 2003/005026.07.04 "Upgrade of Clinical Veterinary Medicine in Estonia" allowed to purchase equipment with the total cost of 3,669,180 €, of which PHARE co-financed 2,333,180 € and Estonia contributed 1,336,000 €. The above-mentioned projects were launched in 2002–2003, and most of the equipment will reach the faculty in 2004–2005. When preparing the orders, the faculty has proceeded from the principle that only the most contemporary and high-quality equipment will be purchased. Part of the most expensive equipment will be shared with other Estonian research institutions.

6.4. Major decisions by the Government of the Republic of Estonia and the administration of the Estonian Agricultural University concerning the development of the Faculty of Veterinary Medicine

The development of the Faculty of Veterinary Medicine became high on the agenda of the university’s administration and also in the Estonian government in 2000. At first there was scheduled to be carried out the EAEVE evaluation in 2001. However, the university’s administration and the government realized that it was impossible to allocate sufficient funding to the faculty in order to assure successful accreditation. Therefore, the Prime Minister of Estonia sent a letter asking to postpone the accreditation until the autumn of 2004. On 20 April 2001 the Board of Trustees of the Estonian Agricultural University adopted the following descisions:

1. It is necessary to lengthen the nominal duration of veterinary training to six years in order to supplement the curriculum in the areas of food hygiene and food control and to provide better specialization for students;
2. In order to ensure that the development of the Faculty of Veterinary Medicine is in compliance with the EAEVE requirements, investments are needed for the construction of new buildings, renovation of rooms, and the purchase of equipment and means of transport.
3. In order to raise the standard of teaching, it is necessary to double the basic cost of a state-funded student place.

The Board of Trustees requested the Government of the Republic of Estonia:

a. to find additional funding for the development of the Faculty of Veterinary Medicine of the Estonian Agricultural University 2002–2003 to the amount of 4.2 m €
b. to increase the basic cost of a state-funded student place to 4800 – 6400 €
c. to prepare the amendment to the University Act that will lengthen the nominal duration of veterinary training to six years.

On the basis of these proposals the Government decided on 14 May 2002:

1. to form an expert committee to bring veterinary training at the Estonian Agricultural University in line with the internationally recognized level by 2004.
2. to appoint Mailis Rand, Minister of Education, head of of the committee and Riho Raave, Vice-Chancellor of the ministry, deputy head.

3. to ask the committee to submit proposals and an action plan to the Goverment of Estonia concerning the measures how to bring veterinary training in line with international standards not later than by 20 September 2002.
4. to involve specialists, scientists, and other people in the solution of the problems.
5. to make the Ministry of Education responsible for the funding of the work of the committee.

The committee together with the administrations of the faculty and the university reached the following conclusions that were adopted as resolutions at the committee meeting on 20 September 2002:

1. The Estonian Agricultural University will work out a long-term development plan of veterinary training by 31 March 2003, involving Estonian and international experts.
2. The Estonian Agricultural University will work out and approve an action plan of preparation for EAEVE evaluation in 2004 by 4 November 2002. The action plan will describe the requirements for bringing veterinary medicine in line with international standards as well as the measures and deadlines. The action plan will cover raising the quality of learning environment, investment in the faculty's teaching complex and supplying the required equipment in 2002–2004, a plan for updating teaching materials.
3. A plan with deadlines and costs for raising the qualifications of the teaching staff and ensuring the optimum staff numbers.
4. A plan for raising the standard of veterinary continuing education.
5. A plan for organizing a domestic and international cooperation network for providing veterinary training.
6. A plan for drawing up a long-term development plan of veterinary training.
7. The Estonian Agricultural University will obtain the EAEVE required equipment within the framework of the PHARE project ES10205.02 "Competence Centre of Veterinary Health".
8. The Ministry of Education will keep the number of state-funded student places at least on the same level as in 2002.
9. The 2003 national investment programme will allocate 3.5 m € from the state budget for the accreditation of veterinary training. 2.5 m € of this funding will be spent on the renovation of the existing teaching building.
10. To ensure co-funding of the PHARE project in addition to the previously mentioned funding.
11. To seek additionally 400, 000 € from the state budget in 2003 and another 400, 000 € in 2004 in order to complete the buildings.

At present the state-provided investments are being utilized and the first stage of construction is almost complete. In addition, the purchase of equipment from the Phare project has started. Unfortunately, a number of important problems are still unsolved, first and foremost the problem of the teaching staff and the intrauniversity funding. The following chapters will provide a more detailed overview of all the problems.

CHAPTER 1:
OBJECTIVES

1. FACTUAL INFORMATION

The mission of the Faculty of Veterinary Medicine of the Estonian Agricultural University is to ensure continuous and high-quality training in veterinary medicine and food science that follows modern trends of development and needs of society, lifelong continuous education of veterinary surgeons and food technologists, and high-level

research and development in veterinary medicine in order to produce safe and healthy food products of animal origin and ensuring human health through animal health and well-being.

The mission and main development objectives of the Faculty of Veterinary Medicine of the Estonian Agricultural University are provided in the development plan for 2003–2010 (Appendix I), which was approved by the Council of the Faculty of the Estonian Agricultural University on 17 June 2003 and confirmed by Resolution 22 of the Council of the Estonian Agricultural University of 26 June 2003. a. The development plan is a strategic programme that serves as a basis for short-term action plans of the Faculty of Veterinary Medicine 2002-2004 (Appendix II). The development of teaching, research and development in the Faculty and the achieved quality will be benchmarked against the internationally accepted standards. The development plan sets the following goals for 2003-2010:

1. Accreditation of the curriculum of veterinary medicine of the Faculty of Veterinary Medicine of the Estonian Agricultural University by the European Association of Establishments for Veterinary Education (EAEVE) in autumn 2004.
2. To integrate the Faculty of Veterinary Medicine of the Estonian Agricultural University into the international network of higher education establishments and research centres dealing with veterinary medicine and food science as a competitive and internationally recognized centre of academic education and research in the Baltic Sea area.
3. To ensure the competitiveness of graduates on the international job market by means of science-based academic education.
4. To create a system of lifelong learning for people working in the field of veterinary medicine and food science, ensuring them opportunities of refresh their knowledge on the basis of contemporary research and practice.
5. To create a permanent link with society, to inform people about research findings concerning animal health and well-being, food science and hygiene, and biotechnology, and to ensure their rapid introduction into practice.
6. To ensure necessary working conditions for the successful work of the teaching staff and researchers and for the preparation of academic offspring and the motivation through skilful administration, a well-organized system of teaching and research, purposeful use of finances, and internal competition.
7. Systematization, unification, and development of Estonian-language terminology in cooperation with national institutions and professional associations.

The Faculty Council will review and approve the detailed annual action plan. The main objective for 2002–2004 is to achieve the recognition of the qualifications and diplomas of Estonian veterinary surgeons in the EU through the accreditation of the Faculty of Veterinary Medicine by the EAEVE. In order to achieve this objective, detailed plans were drawn up for improving the quality of the learning environment, raising the qualifications of the teaching staff and ensuring the optimum staff numbers, improving the standard of in-service veterinary training, and creating domestic and international cooperation networks. The Dean of the Faculty of Veterinary Medicine is responsible for the implementation of the action plan and will report to the Council about the progress made.

2. COMMENTS

The long-term and short-term objectives are realistic but require the complete fulfillment of the job requirements and great discipline on the part of the teaching staff and researchers. The key questions include skills in setting the priorities, undertaking tasks that need solving and the supervision of their fulfillment, and motivating employees.

The strengths of the Faculty of Veterinary Medicine are as follows:

1. highly qualified offspring
2. a new complex of clinics and renovated teaching rooms
3. up-to-date equipment with PHARE-funded projects
4. increased inter-university and international cooperation

Weaknesses:

1. small number of teaching staff
2. insufficient financing by the state (the annual cost of training per veterinary student is calculated on the basis of the basic cost of 20, 000 EEK (1279 €), by multiplying it by speciality coefficient of 4.2)
3. some unjust principles of drawing up the university budget
4. uneven level of research

3. SUGGESTIONS

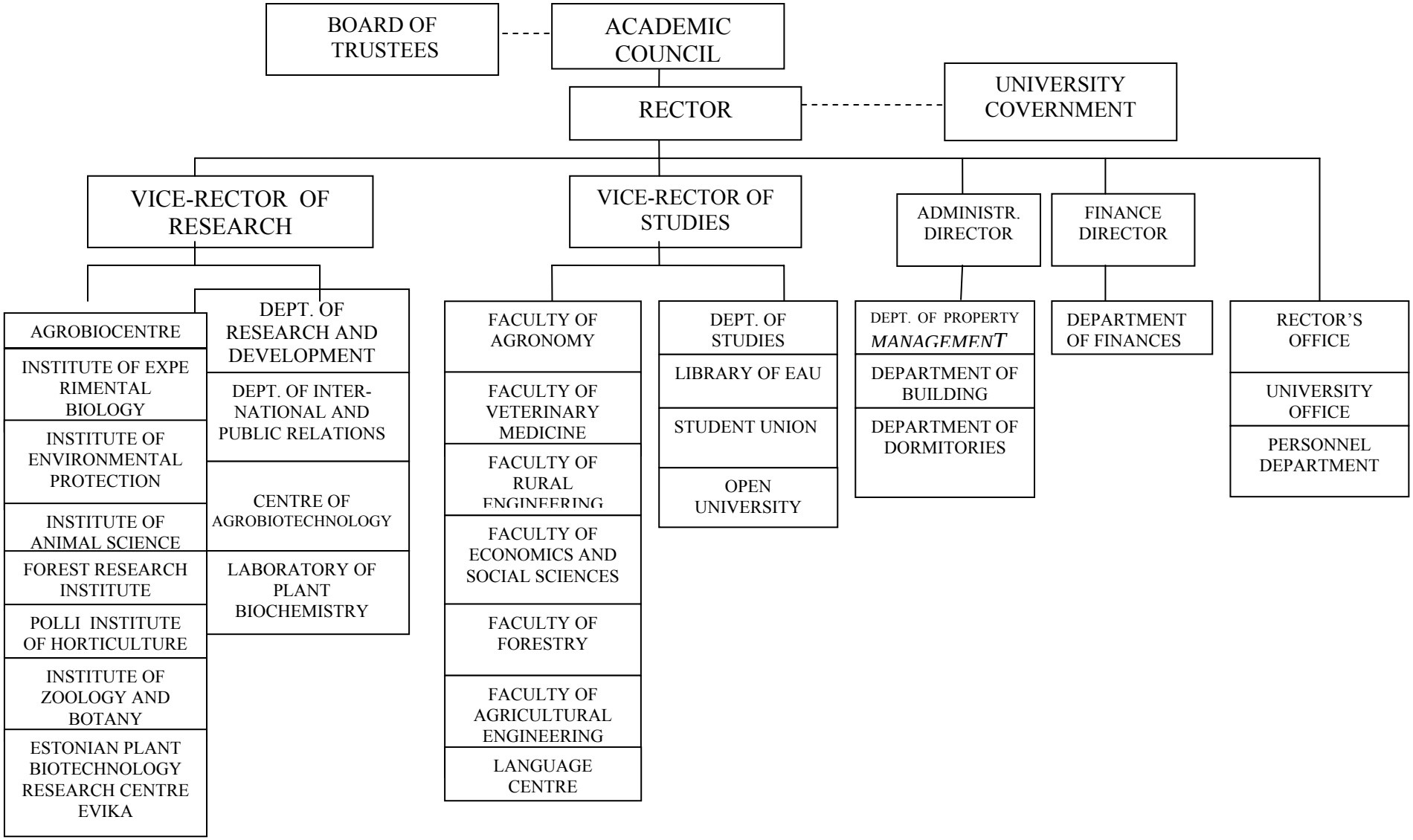
The ad-hoc expert committee of the Ministry of Education, formed in order to co-ordinate the efforts in bringing veterinary training at the Estonian Agricultural University in line with international standards should be given one additional task. This committe should review and elaborate the principles of state funding concerning veterinary training. The basic cost per student should be set at 30, 000 EEK (1919 €), as it is in the case of training based on the 3+2 (or 3+3) system. One should seriously consider remarkable increase of the speciality coefficient. Also, the coefficient should be taken into consideration when drawing up the intrauniversity budget. A solution is needed how to lower the teaching load of the staff and to increase the proportion of research and to improve cooperation with the top specialists in order to raise the standard of teaching. The teaching staff should be provided with opportunities for constant professional and pedagogical self-improvement.

CHAPTER 2:
ORGANIZATION

1. FACTUAL INFORMATION

The Faculty of Veterinary Medicine of the Estonian Agricultural University is located at Kreutzwaldi 62, 51 014 Tartu. Telephone: +372 7 313 345, fax +372 7 422 259.
Web page: http://www.eau.ee/15417
Professor Toivo Suuroja has been Dean of the Faculty of Veterinary Medicine since 2002.
The Estonian Agricultural University is one of the six public universities of Estonia. Public universities are autonomous institutions that draw state funding for studies by annual block-grant contracts through the Ministry of Education and Research. The Estonian Agricultural University is a public legal entity that functions in accordance with the constitution of the Republic of Estonia, the University Act, the Organization of Research and Development Act, and the statutes of the Estonian Agricultural University. The academic activities of the Estonian Agricultural University are guided by the principles of the *Magna Charta* of European universities.
The Estonian Agricultural University can independently decide on the content of its teaching, research and development, organization of studies, and curricula in accordance with the valid legislation, set the admission criteria and rules, terms of study and regulations, and terms and rules of graduation; determine its structure and rules for development and change; set the selection and competition criteria for electing its teaching staff and researchers, and set up private legal entities to support its main activities.
The structural units of the University are divided into units of academic structure and units of support structure. The academic structural units are responsible for teaching and research and development activities; the support units administer, direct, and assist teaching and research and development activities, and manage the finances and administration services.
The academic structure consists of faculties, research and development institutions, and centres. The University Council has the power to form structural units.
The Faculty is a structural unit that unites teaching and research development in related fields of science. The statutes adopted by the Faculty council and approved by the university council provide the foundations and rules governing the activities of a Faculty.
A centre is an academic structural unit that is responsible for the teaching of general subject or research and fulfils the tasks provided in its statutes on the university level. A centre is an independent structural unit accountable to a vice-rector or is part of a Faculty or a research and development institution. A research and development institution is an academic structural unit of the University that has been registered by the Ministry of Education and Research and the statutory activities of which are research and development. It can participate in the implementation and organization of teaching on the basis of the rules set by the University Council.
The University Council is the supreme decision-making body of the University. The Council consists of the Rector, Vice-Rectors, Academic Secretary, persons appointed by the Rector, people elected by academic structural units, and student representatives elected by the Student Union. Each academic unit has one or two respresentatives in

STRUCTURE OF ESTONIAN AGRICULTURAL UNIVERSITY



the University Council. Students make up 20 per cent of the Council members, whereas students of all the levels of higher education have to be represented by at least one student. The Rector has the right to appoint up to 10 per cent of the members for the term of his office. The Rector manages the University. The Rector sets up the University Government for the daily management of the University.

The Faculty of Veterinary Medicine is an academic structural unit of the Estonian Agricultural University. The main objective of the Faculty is to organize and to carry out teaching and research and development work in veterinary medicine and food technology, and on this basis also to provide in-service training and consultations in these fields.

The Council is the highest decision-making body of the Faculty. The *ex officio* members of the Council include the Dean, Vice-Dean, professors, department heads, head of the Animal Clinic, representatives of emeritus professors, and representative of the professional association. In addition, each department elects a representative from among the teaching staff and researchers. Student representatives have to make up at least one fifth of the council membership.

The Dean is responsible for the work of the Faculty. The Dean is elected from among the Faculty's full professors or associate professors with a teaching experience for up to four years by an electoral college formed by members of the Faculty Council, teaching staff and researchers. Full professors, associate professors, the Dean in office, the Rector, and the Faculty Council can put up candidates for the position of the Dean. The electoral college consists of the members of the Faculty Council and the full-time teaching staff and researchers of the Faculty. The Rector will confirm the election results.

The Dean nominates and relieves the Vice-Dean of office with the approval of the Faculty Council. The Vice-Dean's responsibilities are provided in the job description that is confirmed by a Dean's order.

The Faculty consists of the following structural units: Dean's office, Department of Morphology, Department of Animal Health, Department of Therapy together with Animal Clinic, Department of Food Hygiene, Department of Food Science, Department of Reproductive Biology, Department of Continuing Education and Pharmacy.

The Dean's office is a structural unit of the Faculty that is responsible for managing the administration of the Faculty. The Dean is responsible for the work of the Dean's office.

Departments are academic structural units that carry out teaching and research in related subjects.

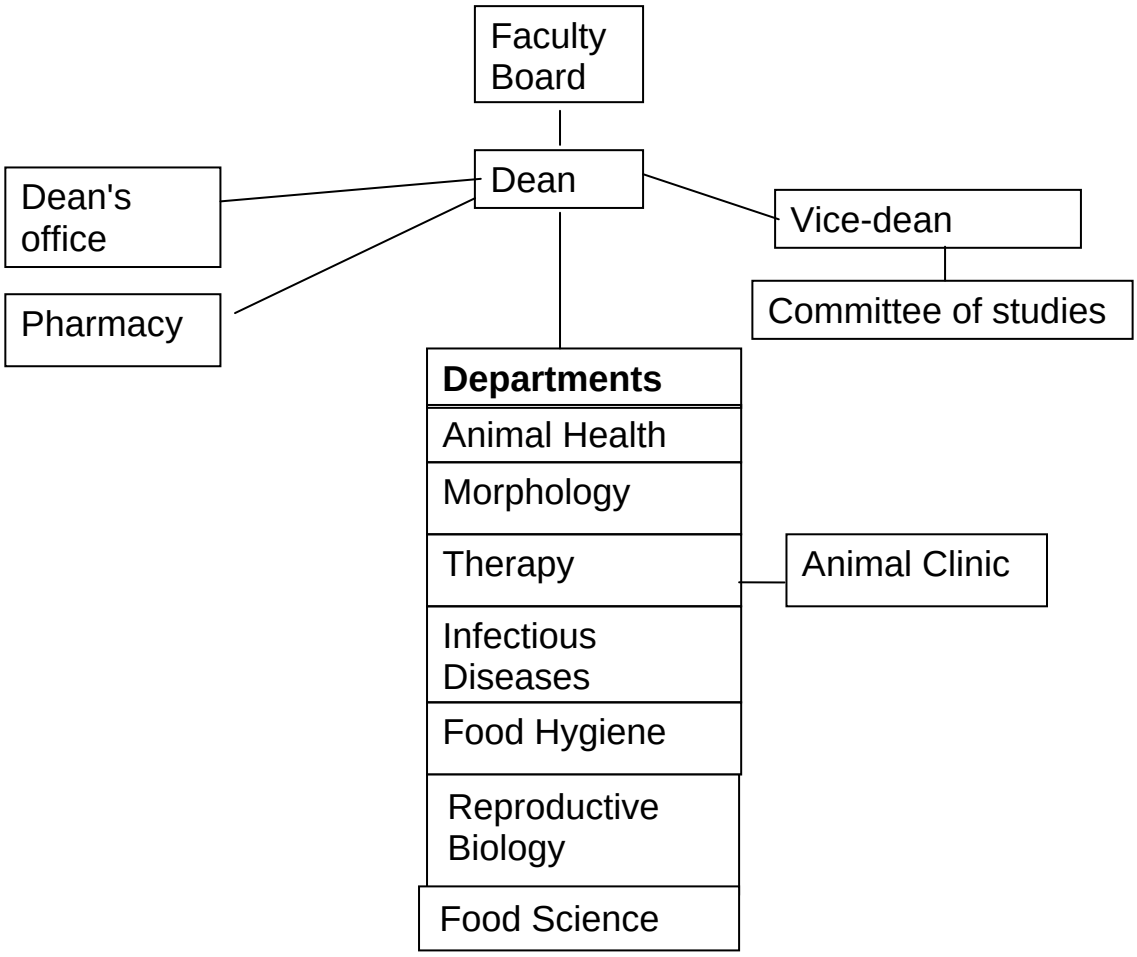
The Department of Food Science is an academic structural unit that brings together the subjects and research in food technology (dairy and meat technology).

The Department of Reproductive Biology is an academic structural unit that is responsible for carrying out basic and applied research, organizing postgraduate programmes and in-service training, and participation in the teaching of reproduction-related subjects.

The Department of Continuing Education is responsible for the organization and coordination of in-service training for veterinary surgeons in cooperation with the Estonian Association of Veterinary Surgeons and the Open University.

The heads of departments are elected on the basis of competition. The Faculty Council selects a head of the structural unit from among eligible candidates.

The Animal Clinic serves as a basis for the professional preparation of students, research of the teaching staff and students, and provides veterinary treatment and preventive services.
The pharmacy serves as a teaching and research basis and supplies the subunits of the Estonian Agricultural University with medicines, chemicals, and ancillary materials.
The Faculty Council is the supreme decision-making body of the Faculty. The Faculty Council adopts resolutions within its competence that are signed by the chairperson of the Council and the secretary. The resolutions of the Faculty Council are obligatory for the Faculty membership.
The Faculty Council adopts the development plan of the Faculty or its changes and submits them to the University Council for approval, discusses and decides on teaching and research-related issues, draws up the curricula of the Faculty and makes the necessary additions and changes in them and submits them to the University Council for approval; elects the Faculty's teaching staff and researchers and heads of the structural units, with the exception of full-time professors. The Faculty Council makes proposals to the University Council concerning the election of professors and to the Rector concerning the election of extraordinary professors, and advises the University Council on electing emeritus professors. The Faculty Council makes proposals to the University Council concerning the terms and rules for student admissions, consider the teaching and research reports of the structural units of the Faculty and evaluates their work, analyzes the management and results of teaching and research, appraises postgraduate students, decides on the awarded title on the basis of valid curricula, approves the budgets of the Faculty and its structural units and changes therein, makes proposals to the University Council concerning structural changes in the Faculty. The Faculty Council forms, if necessary, permanent and temporary committees for the management of teaching and research and other questions. The Faculty Council considers and approves the Dean's annual report.
When organizing its activities the Faculty of Veterinary Medicine makes an extensive use of the services of the central subunits of the Estonian Agricultural University. Thus, the Administrative Department is responsible for the management and repairs of the buildings and the student accommodations, the Department of Finances is responsible for accounting, the Personnel Department deals with matters related to the personnel, and the Office is responsible for correspondence. The Department of International and Public Relations helps to organize student and research exchanges, international courses for postgraduate courses, and in applying for funding from international funds. The Department for Studies keeps track of academic proficiency and coordinates and regulates teaching between various subunits. The Estonian Agricultural University has a joint library with a reading room.



2. COMMENTS

The current structure of the Faculty of Veterinary Medicine was approved in 2003. Structural changes were necessary because of the earlier fragmentation of the Faculty into small subunits that served as an obstacle to the coordination of teaching and the purposeful use of financial resources. In 2004 the Animal Clinic was united with the Department of Therapy. Earlier it was an independent structural unit that was directly responsible to the Dean. The change was necessary in order to improve clinical teaching.

The restructuring of the Estonian Agricultural University will bring about changes in the structure of the Faculty of Veterinary Faculty in 2005. The aim of the forthcoming reform is to create a research-based integral academic teaching and research system and to establish a well-conceived division of labour. The present academic structure of the University consists of six faculties and eight research and development institutions. The reform plan foresees the formation of five structural units that will ensure the activity of the University in the main area (sustainable use of natural resources), implementation of teaching and research and development, and sustainability. The reform will provide the opportunity:

1. to strengthen the position of the professor in the university academic structure to increase the requirements set to a professor as a teaching scholar and to create opportunities for a full-time professor to assume the central role in the development of their field;
2. to strengthen the link between teaching and research and to make a more economical use of the expensive laboratory base and infrastructure, including teaching rooms;
3. to increase the size of research teams and to increase their capability in the completion of various tasks, including the organization of teaching;
4. to win substantial research projects, to improve the standard of research and development, and to increase the scope of own resources;
5. to support research and development and teaching that is based on contemporary interdisciplinary research trends and creates new synergic quality;
6. to increase the responsibility and independence of structural units in the organization of research and development;
7. to solve the problem of academic offspring more flexibly. Better use of various research and development opportunities will increase the scope of funding, which will enable to enhance the efficiency of postgraduate studies and decrease dependence on the teaching budget.

In the course of the reform the Faculty of Veterinary Medicine and the Institute of Animal Science will merge, thus forming the Institute of Veterinary Medicine and Animal Sciences.

3. SUGGESTIONS

The restructuring of the Faculty structure in connection with the structural reform of the entire University will improve the use of human and technical resources. Considering the increased role of research and the present uneven level of research at the Faculty of Veterinary Medicine it would be justified to set up the position of a vice-Dean for research or a director for research. A team of international research experts recommended the same in November 2003.

CHAPTER 3:
FINANCES

1. FACTUAL INFORMATION (funding of the Faculty)

The Faculty of Veterinary Medicine is funded from the following sources:

1) funding from the state budget; 2) tuition fees of fee-paying students; 3) revenue from research and development; 4) service charges arising from the main activities of the University; 5) other sources of revenue.

The Faculty budget is part of the university budget. The Director of Finances draws up the annual budget of the University in cooperation with the Finances Committee of the University Council, which consists of representatives of the faculties and other institutions (Deans, directors).
The annual budget of the University is approved by the University Council. When the budget of the Estonian Agricultural University is drawn up, the following principles apply:

1. The state funding and tuition fees are distributed between the teaching units in accordance with student numbers fixed in the contract with the state and the number of fee-paying students, the scope of the credit points taught by the unit (Faculty), and the speciality coefficient (4.2 for veterinary training).
2. The funding towards the maintenance costs of the buildings is distributed between the units on the basis of the surface area that is at the disposal of faculties and institutes. In the case of economy in maintenance costs the saved resources are used for the repair and maintenance of a specific property.
3. The planning of tuition costs is based on the scope of the state-funded student places.
4. The proportion of the administrative costs (maintenance + administration) is established by taking into account the total scope of tuition costs and the distribution of students, as well as the ratio of teaching staff to students in the faculties.
5. The budget for building repairs and construction is drawn up from state funding.
6. Each structural unit of the University has a budget.

The funding of the Faculty of Veterinary Medicine consists of:

a. state funding
b. own revenue (tuition fees, funding from sponsors, overhead costs of grants and contracts, rent, medical services, etc.)

The Faculty Council approves the Faculty budget and the allocation of budgetary resources to the structural units. At first the labour costs are subtracted from the state-funded student places and tuition fees (i.e. pay + holiday pay + 33.5 per cent of taxes, incl. the social tax, health insurance, and unemployment insurance). The so-called remaining operational costs are distributed in accordance with the regulations set by the Faculty Council.
When distributing the other operational costs, the Faculty of Veterinary Medicine subtracts at first the so-called general Faculty costs (the Dean's fund, costs related to the Masters' Council, benefits to doctoral and masters' students, publishing costs of research articles, funding for the clinics, and reserves).

The departments of the Faculty receive their funding on the basis of the percentage of classroom teaching by the department and the speciality coefficient of the subject area.
The funding received by department is spent on teaching-related costs (teaching aids and instruments, equipment, special clothing and special devices, teaching-related transportation costs, travel, hourly-rate work, office supplies, professional literature and textbooks, chemicals, etc.)
The speciality coefficient used in the case of state-funded student places is 4.2 in veterinary medicine and 2.1 in food science. The basic cost of a student place in veterinary medicine is 20, 000 EEK (1,279 €); starting with the admission of 2004 it will reach 25, 000 EEK (1600 €). Thus, each state-funded student contributes 20,000 x 4.2 = 84, 000 EEK (5,374 €) to the Faculty budget. The basic cost per student in food technology is 30, 000 EEK (1,919 €), and each student constributes 30, 000 x 2.1 = 63, 000 EEK (4,030 €) to the Faculty budget. The state, however, pays for each state-funded student place according to the number of graduates.
Despite the fact that the speciality coefficient 4.2 for veterinary training is the highest at the University and also the tuition fee for fee-paying students is the highest (30,000 EEK (1,923 €) for Estonian students and 50, 000 EEK – 3,205 € for international students (until May 2004), for a number of years the Faculty has suffered from budget deficit: in 2001- 2.8 milj EEK (179,487 €) and in 2002 – 1,330,000 EEK (85,256 €).

Capital expenditures (buildings) are funded from the University's capital expenditure budget in order to renovate the Faculty of Veterinary Medicine. These state-funded investments reach the university through the state budget, mostly as mediated by the Ministry of Education and Research.
In 2002–2005 most of the equipment will be purchased with the help of the resources foreseen by the programmes two PHARE projects ES01.05.02 "Competence Centre of Veterinary Public Health and CRIS No 2003/005-026.07.04 „Upgrade of Clinical Veterinary Medicine in Estonia". Faculty is the only beneficiary of both projects.

Tuition fees

The students admitted to state-funded study places do not pay any tuition fees. Until 2004 international fee-paying students had to pay 50,000 EEK (3,205 €) per year. Estonian fee-paying students used to pay 30,000 EEK (1,923 €) per year. Starting with the academic year 2004/2005, that is after Estonia joins the European Union, both Estonian and EU-originating international fee-paying students will pay 33,000 EEK (2,110 €) per year. The tuition fee can be raised 10 per cent per year. The tuition fees for fee-paying students are established by the Council of the Estonian Agricultural University.
The Centre charges a fixed percentage (22.17%) of the tuition fees, the rest is distributed in accordance with the Faculty budget approved by the Faculty Council.
In 2003 tuition fees totalled 2,086,775 EEK (133,767 €), of which the Faculty received together with allocated resources from other faculties for the pay rise 155,100 EEK (9,942 €) , altogether 1,347,646 EEK (86,387 €).

Table 1. Annual costs

Calendar year 2003		
a. Employees	Estonian kroons	€
a.1 teaching staff	4,125,636	264,463
a.2 support personnel	3,241,568	207,792
a.3 researchers	1,941,873	124,479
a. Total	9,309,077	596,735
b. Overall costs (activities)		
b.1 services		
b.2 actual teaching costs	1,202,841	77,105
b.3 actual research costs	1,715,513	109,969
b. Total	2,918,354	187,074
c. Equipment		
c.1 teaching	570,039	36,541
c.2 research	204,908	13,135
c. Total	774,947	49,676
d. maintenance of buildings	1,729,598	110,871
e. Total costs	14,731,976	944,356

Table 2. Cost of Veterinary Training

	Estonian kroons	€
1. Annual direct training costs		
per student	44,369	2,844
2. Total training costs		
per student (x 6)	266,214	17, 065
(x 5)	211,845	14, 221

Table 3. Annual revenue

	Estonian kroons	€
1. revenue from the state		
or the public sector	6,996,320	448,482
b. revenue from private individuals	153,794	
9,858		
c. revenue from research	4,780,213	306,423
d. earned revenue		
d.1 enrolled students	1,347,645	86,387
d.2 in-service training	44,469	2,850
d.3 revenue from the clinic	484,409	31,051
e. revenue from other sources	925,126	59,302
f. Total revenues	14,731,976	944,357

Table 4. Changes in state (public) funding

Direct state funding reaches the Faculty in the form of state-funded student places. During the past five years the state-funded resources (after subtracting the centralized costs) were as follows:

	2004	2003	2002	2001	2000
EEK	7,925,792	8,679,055	7,270,872	5,426,847	5,440,579
€	508,063	556,349	466,081	347,874	348,755

In addition to the state-funded student places, the Faculty receives research funding from state-funded target-financed projects, the Estonian Science Foundation, and applied research contracts with the Ministry of Agriculture.
During the past five years the total extent of the above-mentioned funding was as follows:

	2004	2003	2002	2001	2000
EEK	3,393,000	3,078,000	2,950,150	3,458,600	3,590,387
€	217,500	197,307	189,112	221,705	230,153

In order to co-finance the programmes PHARE I and PHARE II intended to design and construct new buildings to the Faculty, to renovate the old buildings, to purchase contemporary equipment, to train the teaching and support staff, to obtain and publish

textbooks, the Estonian state allocated the following funding from the state budget for 2001–2004.

	2004	2003	2002	2001
EEK	43,000,000	52,320,000	7,000,000	309,000
€	2,756,410	3,353,846	448,718	19,807

The Faculty contributes the following proportions of its revenue to the University:

Clinic……..….10%

Research grants…….……..….20%

Teaching revenue……..…….…..22%

Revenue from the rent of non-residential rooms and other property...20%

Other own revenue except for international projects.....…..…20%

Revenue from international projects ……...10%

Revenue from the sale of unnecessary movables.....….....20%

2. COMMENTS

The existing state and university funding scheme fails to ensure normal funding of the Faculty in the future. The operational costs will increase to a considerable degree in connection with the renovation of the Faculty and the use of the new buildings.
The approved Faculty budget for 2004 shows a deficit. It lacks resources to further fund the pay rise initiated in 2003. The budgets of other faculties increased in 2004 in comparison with 2003 while the budget of the Faculty of Veterniary Medicine decreased by 749,053 EEK (48, 016 €).
After subtracting the centralized costs and the maintenance costs of the buildings the Faculty receives 6,643,947 EEK (42,589 €), which does not cover even the salaries of the teaching staff as of 2003 (6,497,393 EEK or 445,345 €). The shortage amounts 303,446 EEK or 19,451 €.
However, besides the salaries the Faculty needs funding for hourly-rated teaching, to open the required new positions, and for raising the extremely low monthly salaries of teaching assistants and lecturers (5,250 EEK or 336 € and 6000 EEK or 384 €, respectively) to the level of at least 7,000 EEK or 448 € for teaching assistants anmd 8,000 EEK or 512 € for lecturers.
The above tables do not show other operational costs. The departments of the Faculty need at least minimum resources for teaching-related expenses.
Thus, the funding allocated from the 2004 budget of the Estonian Agricultural University do not meet even the minimum needs, the deficit being about 2,500,000 EEK or 160,256 €.
In our opinion, this situation was caused partly by the fact that the the state funding and the tuition fees intended for veterinary training were redistributed unfairly within the

university. The central funds of the university are collected on the basis of percentage (31.5 %), that is, this is how the high speciality coefficient (4.2) established by the state is taxed. The latter, however, is established by the state, taking into account the cost of veterinary training. Actually, the services rendered by the central institutions to this speciality are not more extensive by a number of times or any better in comparison with other specialities. Calculations show that the Faculty of Veterinary Medicine contributes 1.6 times more money to the budget of the University's central funds than on average all the other faculties. The same is true for the amount of tuition fees that the Faculty contributes to the centre. Because the Faculty charges tuition fees that are1.5–3.3 times higher than on average in other faculties, our Faculty contributes to the centre so many times more to the centre per student. All in all it means that the centre renders the same services to faculties (institutes) at different prices. This fact cannot be interpreted otherwise than inequality inside the University.

The teaching of veterinary students by other faculties is calculated by using an odd scheme of manipulating with real students and student units. The Faculty-external teaching is calculated on the basis of the number of actual students with the speciality coefficient of our Faculty (4.2). However, the teaching Faculty will be paid according to their own speciality coefficient (on average 2), that is, on the basis of student units. The 'extra' money is redistributed. Because of such manipulations the Faculty loses about 1.3 m EEK (83,173 €) per year. For all these reasons, the Faculty of Veterinary Medicine has a constant deficit of about 2 m EEK (128,205 €).

3. SUGGESTIONS

1. To seek a considerable increase in the speciality coefficient of veterinary training
2. To ensure a fair redistribution of the funding from state-funded student places and tuition fees between the Faculty and the centre: 50% on the basis of percentage and 50% on the basis of the number of actual students.
3. To economize on maintenance costs of the Faculty buildings.
4. Expansion of research and development, application for new grants and target-financed themes, application for international contracts and projects.
5. Extension of fee-paying education especially by groups of non-EU international students taught in English.
6. Development of in-service training and continuing education
7. Involvement of private capital in specific projects (both research and applied projects).
8. To find new ways for rational use of new buildings and research equipment (rent of the manege, joint use of animal boxes with scientists of the University of Tartu, fee-paying advanced and short-cycle studies by means of new and contemporary equipment, etc.

CHAPTER 4:

CURRICULUM

1. FACTUAL INFORMATION

The nominal duration of the national curriculum of veterinary training has been six years since 2002 and the scope of the curriculum is 240 credit points (*ainepunkti* AP) or 360 ECTS. The University awards a diploma to graduates in veterinary training, which certifies graduation in the field of veterinary medicine (students enrolled after 1 September 2002 will receive a diploma with the qualifications equal to the Master of Veterinary Medicine) and a diploma supplement in Estonian and English. Graduates before the academic year 2002 / 2003 have the right to apply for an English-language diploma supplement. The curriculum that was introduced in the academic year 2002 / 2003 is provided in *Appendix III* and the previous 5 years curriculum can be found in *Appendix IV*. Curriculum for veterinary surgerons in partial accordance with the content of tarining provisions in *Article 1 and the Annex of Council Directive 78/1027/EEC of 18 December 1978.*

The five-year basic course covers 49 subjects totalling on 185.5 AP (278.2 ECTS). A student is expected to receive 12.5 AP (18.75 ECTS) for elective and optional subjects, and the final exams give 3.5 AP (5.25 ECTS). Professional specialization in the sixth year requires 6 AP (9 ECTS) for compulsory subjects for all specialities. There are three specialities:

- Medicine of Productive Animals and Horses: 20 subjects 38.5 AP (57.75 ECTS) together with the compulsory subjects for all the specialities.
- Medicine of Pet Animals:16 subjects and 38.5 AP (57.75 ECTS) together with compulsory subjects for all the specialities
- Food Hygiene: 13 subjects and 38.5 AP (57.75 ECTS) together with compulsory subjects for all the specialities.

The proportion of hands-on work makes up 60 per cent of the scope of the curriculum. The structure of the curriculum is as follows: lectures 40 per cent, seminars and hands-on work 60 per cent. The six-year curriculum includes 67 exams. Approximately 50 per cent of the exams are oral, and 50 per cent are written. A semester consists of 16 study weeks. On average there are 31.7 hours per week (between 30 and 35 hours). The structure of the curriculum and the distribution of subjects by years are provided in Tables 4.1.1, 4.1.2 and 4.1.3. The curriculum is taught in accordance with the schedule of classes drawn up at the Faculty.

The approval and changes in the curricula are regulated as follows:

The Dean submits the draft curriculum approved by the Faculty Council to the Studies Committee of the Estonian Agricultural University.

The Studies Committee:

1. evaluates the submitted material
2. may give recommendations to improve the curriculum
3. if necessary, asks the opinion of the other faculties involved
4. approves the curriculum and submits it to the Council of the Estonian Agricultural University for approval or rejects it
5. engages external evaluation experts in the case of the need

Curriculum changes that include replacement of general subjects, changes in scopes, or changes in the title of the speciality are approved by the Council of the Estonian Agricultural University at the suggestion of the Studies Committee.

The Committee of studies of the Faculty considers proposals concerning the replacement of speciality subjects and changes in their scopes and submits amendment proposals to the Faculty Council. If a proposal is approved by the Faculty Council, it will be submitted for approval to the University Council. In the cases of approval the resolution on changing the curriculum together with the new curriculum will be submitted to the Department of Academic Affairs within one week after the decision was passed.
In case the changes in the curriculum exceed one third in comparison with the curriculum registered at the Ministry of Education and Research, one has to seek the opening of a new curriculum.
Pursuant to the legislation of the Republic of Estonia a new curriculum is opened as follows. A draft curriculum is drawn up, which should include:

1. rationale for the need to open a new curriculum
2. opinions of representatives of employers / ministries / professional associations concerning the purposefulness of the new curriculum and the need for specialists
3. syllabus and the specialities within the curriculum
4. subject abstracts
5. academic description of the teaching staff (teaching and research results, qualifications, etc.)
6. feasibility study of the curriculum for nominal duration (admission numbers, existing teaching resources, needs for future resources)
7. registration sheet of the curriculum.

The Committee of Studies of the Faculty is responsible for dealing with changes and improving the curriculum on the Faculty level. The committee consists of seven members representing all the departments. The committee considers all the proposals made by the departments concerning changes in the teaching process and submits amendment proposals to the Faculty Council for approval. The further procedure was described earlier.

4.1: Curriculum followed by all students

Table 4.1.1: General table of curriculum hours for all students

	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
First year	330	254	124	40	0	760
Second year	346	280	64	60	0	750
Third year	315	214	54	307	0	890
Fourth year	320	265	16	319	0	920
Fifth year	138	205	44	299	0	680
Sixth year: Speciality 1: Speciality 2: Speciality 3:	 318 128 405	 114 68 269	 225 396 126	 143 208 -		 800 800 800
Total						**4800**

Tables 4.1.2: Curriculum hours per year

First year

	Hours of training

Subjects	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
History of veterinary medicine	20					20
Medical physics and biophysics	20	20				40
Organic and analytical chemistry	48	32				80
Breeding and genetics	32	18				50
Informatics and biometry	12	48				60
Foreign language			60			60
Botany with basics of Agronomy	24	24			12[1]	60
Animal biology	24		26			50
Special course on different species in farm livestock husbandry	30		30			60
Latin language	20					20
Cytology, embryology, and histology	28	28				56
Anatomy of domestic animals	50	84				134
Animal protection and professional ethics	22		8			30
Field practicums				40[1]		40
Total	330	254	124	40	12	760

1- Field practicums and hands on animal house work

Second year

	Hours of training					
Subjects	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
Animal nutrition	30	30				60
Biochemistry and basics of molecular biology	48	52				100
Cytology, embryology, and histology	24	36				60
Anatomy of domestic animals		50				50
Physiology	20	30				50
General pathology	30					30
Microbiology	42	58				100
Virology	20	20				40
Fundamentals of scientific research	8		12			20
Aetiology	12	4	4			20
Ecology and environmental protection	40		20			60
Fundamentals of economics	32		28			60
General course in communication psychology	40					40

Field practicums				60		60
Total	346	280	64	60	0	750

Third year

	Hours of training					
Subjects	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
Risk analysis and safety in working environment	18	18	4			40
Foundation of law	28		12			40
Operative surgery	16			84		100
Veterinary genetics	32		8			40
Veterinary immunology	18	6	16			40
Obstetrics and gynaecology	30					30
Artificial insemination and reproduction	25	16		59		100
General pathology		36	8	16		60
Anaesthesiology	16			24		40
Virology	20	20				40
Pathological anatomy and necropsy	18	36				54
Animal hygiene	32	42	6			80
Pharmacology	30	20				50
Clinical-laboratory diagnostics	32	20		48		100
Clinical work and field practicums				76		76
Total	315	214	54	307	0	890

Fourth year

	Hours of training					
Subjects	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
Nutrition physiology and metabolism	20	20				40
Veterinary radiology	16	20		14		50
Ophthalmology	20	6		14		40
General and special surgery	42			48		90
Epizootology	24	36				60
Obstetrics and gynaecology	26	16		50		92
Parasitology and parasitic diseases	20	39				59
Toxicology	14	26				40
Pathological anatomy and necropsy	16	30				46
Pharmacology	20	30				50
Internal medicine	54		16	50		120
Hygiene of milk and dairy	14	16				30

products						
Food hygiene	34	26				60
Clinical work and field practicums				143		143
Total	320	265	16	319	0	920

*out of 26 classroom hours 8 hours deal with necropsy
**out of 84 hours 54 deal with necropsy

Fifth year

	Hours of training					
Subjects	Lectures	Practical work	Supervised work	Clinical work	Other*	Total
General and special surgery	0			30		30
Epizootology	24	36				60
Veterinary forensics	16	14				30
Organisation of veterinary services and veterinary legislation	8		22			30
Parasitology and parasitic diseases	20	41				61
Pathological anatomy and necropsy	8	52				60
Internal medicine	32		14	14		60
Animal welfare and environment	10	22	8			40
Food hygiene	20	40				60
Clinical work				249		249
Total	138	205	44	293	0	680

Sixth year (differentiations in 3 directions)

		Hours in course					
	Subjects	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Compulsory subjects for all specialities	Veterinary epidemiology	20	20	20			60
	Professional ethics			10			10
	Organization and management of veterinary practice	10		20			30
	Zoonoses and veterinary public health	10		10			20

Speciality 1: Medicine of productive animals and horses	Species-specific behaviour of productive animals	12	4	4			20
	Reproductive biotechnology	12		2	6		20
	Herd health: a) Milk quality control b) Reproductive health c) Health of a young stock d) Feeding and metabolic diseases of high-production bovine animals e) Control of infectious diseases in bovine animals	 8 10 10 8 10	 9 8 	 9 20 10 14 10	 4 10 		 30 30 30 30 20
	Small ruminant medicine; a) Metabolic diseases of sheep and goats b) Infectious diseases of sheep and goats c) Reproductive disorders in sheep and goats	 12 12 8	 	 6 6 6	 12 12 6		 30 30 20
	Swine medicine: a) Health of piglets and young pigs b) Reproductive disorders c) Control of infectious diseases in pigs*	 12 8 10	 10	 10 14 10	 8 8 10		 30 30 40
	Horse medicine: a) Diseases of foals b) Internal diseases in horses c) Limb diseases in horses d) Reproductive disorders in horses	 10 16 10 12	 7 	 3 9 10 6	 7 8 10 12		 20 40 30 30
Speciality 2: Pet animals	Neurology**	14		16			30

	Gastroenterology of small animals	4		20	26		50
	Urology of small animals	4		20	26		50
	Cardiovascular diseases in small animals	2		26	12		40
	Respiratory diseases in small animals	2		32	16		50
	Reproduction in small animals	4		20	26		50
	Surgery of small animals	4		10	36		50
	Infectious diseases in small animals	6	4	40			50
	Dermatology of small animals	4	20		6		30
	Hereditary diseases in small animals	6		14			20
	Paediatric and geriatric diseases in small animals	6		14			20
	Dentistry of small animals	6		14			20
	First aid for small animals	14		6			20
	Laboratory methods in the clinical diagnostics of small animals		20	30			50
	Species-specific behaviour of small animals	12	4	4			20
	Independent work (research project)			70			70
Speciality 3: Food hygiene and public health	General course in food hygiene**	50	20				70
	Meat inspection**	34	36				70
	Milk inspection	14	16				30
	Food safety	46	14				60
	Food legislation	26	14				40
	Food microbiology	32	32	16			80
	General course of quality theory	22	8				30
	General course in sensory evaluation of food	24	6				30
	Technology and production hygiene of dairy products	20	20				40
	Technology and production hygiene of meat products	20	20				40
	Quality and standards of garden and field food	30	40				70
	Food toxicology	37	13				50
	TOTAL	663	345	561	261		1830

*Compulsory also for food hygiene speciality
**Compulsory also for productive animal medicine speciality

Table 4.1.3: Curriculum hours in EU-listed subjects for all students

	Subject	Hours					
		Lectures	Practical work	Supervised work	Clinical work	Other	Total
A.	**Basic subjects**						
	Anatomy (incl. histology and embryology)	90	190				280
	Biochemistry and molecular biology	48	52				100
	Biology (incl. cell biology)	24	26				50
	Biophysics	20	20				40
	Biostatistics*	12	48				60
	Chemistry	48	32				80
	Epidemiology	20	20	20			-
	Genetics**	64	18	8			90
	Immunology	18	6	16			40
	Microbiology	42	58				100
	Parasitology	40	80				120
	Pathological anatomy (macroscopic & microscopic)	48	112				160
	Pharmacy and pharmacology	50	50				100
	Physiology	40	60				100
	Physiopathology Scientific and technical information and documenta-tion methods	30 8	36	8 12	16		90 20
	Toxicology (incl. environmental pollution)	14	26				40

*Taught under the name information science and biometry
**Taught under the name breeding and genetics and veterinary genetics

B.	**Animal Production**						
	Agronomy	24	24			12	60
	Animal behaviour (incl. behavioural disorders)	12	4	4			20
	Animal husbandry (incl. livestock production systems)	30		30			60
	Animal nutrition and feeding	50	50				100
	Animal protection and welfare	22	8				30
	Environmental protection	40		20			60
	Preventive veterinary medicine (incl. health monitoring	52	62	26			140

	programmes)						
	Reproduction (incl. artificial breeding methods)	25	16		59		100
	Rural economics	32		28			60
C.	**Clinical subjects**						
	Anaesthetics	16			24		40
	Clinical examination and diagnosis and laboratory diagnostic methods	32	20		48		100
	Clinical medicine*	-	-				-
	Diagnostic imaging**	16	20		14		50
	Obstetrics, reproductive disorders	56	16		50		122
	State veterinary medicine, zoonoses, public health and forensic medicine	2 10 16	 14	8 10 	 	 	10 20 30
	Surgery	58			152		210
	Therapeutics (non-infectious internal diseases)	86		30	64		180
D.	**Food Hygiene** Certification of food production units Food certification Food hygiene and food quality (incl. legislation) Food inspection, particularly food of animal origin Food science and technology	 10 10 30 10 10	 10 10 20 20 10	 10 	 	 	 20 20 60 30 20
E.	**Professional knowledge** Practice management Professional ethics Veterinary certification and report writing Veterinary legislation***	 10 10 4	 	 20 4 12	 	 	 30 10 4 16

*The curriculum has no subject named as clinical medicine. It is covered by such subjects as infectious diseases, parasitic diseases, internal diseases, emergency, special, and general surgery. The hours are provided under the respective subjects.

**Diagnostic imaging is taught during the course in clinical diagnostics

***Taught during the course in veterinary legislation

The six-year curriculum enables in-depth specialized training in three different areas during the final year of studies. The students have to make their choice by the end of the fifth year. The choice is limited because all the specialities have to be filled. The number of places in each module depends on the needs of the state and the labour market. Because the modules, names of subjects, and the number of hours are provided in the Table for year six, they will not be repeated below.

4.2. Elective subjects

The curriculum includes 19 elective subjects that are divided between 5 years. The total number of credit points for elective subjects is 23.0, of which the student is required to choose 7.5 AP. The
Table below provides the list of the elective subjects:

Table 4.2.1: Existing elective subjects in the curriculum (required for 7.5 AP)

	Hours						
Subject	Year	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Evolution	1	20					20
Anatomy of reptiles, fishes, and amphibians	1	10	10				20
General and molecular biology	1	20	20				40
Aquarium science	3	10					10
Pain	4	10					10
Endocrinology	3	14	10	6			30
Dog and cat reproduction and insemination	3	12			8		20
Medicine of exotic animals	4	20		20			40
Sports physiology and doping	3	16		14			30
Physiotherapy	3	10	10				20
Alternative treatment methods	3	14	6				20
Medicine of lab animals	4	14	10	6			30
Diseases of fur-bearing animals	5	10		10	20		40
Poultry diseases	5	20		10			30
Hoof diseases	4	4		6	10		20
Feeding of small animals	4	14	6				20
Fish diseases	5	10	6	4			20
Bee diseases	4	8	4		8		20
Diseases of game animals	5	14	6				20

In addition to the elective subjects offered by the Faculty, there exists an agreement between the public universities of the Republic of Estonia according to which students have the right to take elective subjects also at other public universities. Thus, students of veterinary medicine can take elective subjects offered by the Medical Faculty of the Tartu University http://www.med.ut.ee/

4.3. Optional subjects

At the beginning of each semester the Department of Academic Affairs provides a package of subjects that the students can take. These subjects are not compulsory.

4.4. Obligatory extramural work

Table 4.4. Obligatory extramural work that is part of the curriculum

Description	Minimum period	Academic year
Extramural work on farms supervised by a farmer	2 weeks	summer period of year 2
Extramural work in artificial insemination (AI) (under the supervision of an experienced AI technician)	4 weeks	summer period of year 3
Extramural work supervised by a practising veterinary surgeon	4 weeks	spring semester of year 4
<u>Rotation-based</u> • work at a meat-processing enterprise • work at the District Veterinary Officies of Estonian Republic • work supervised by large animal veterinary practisioners • work supervised by small animal practisioners • State Veterinary and Food Laboratory*	2 weeks 1 week 2 – 3 weeks 2 - 3 weeks 5 weeks*	spring semester of year 5 spring semester of year 5

*The State Veterinary and Food Laboratory offers this opportunity to three students who are interested in future work in the laboratory system

4.5 Clinical trainig at the Faculty clinics

In addition to the extramural work, the students are required to complete a two-week period of clinical training at the Faculty clinic. This hands-on training period is offered during the first years of study, and it involves communication, taking care, and feeding the animals. In addition, students are required to complete two weeks period of training at the Faculty clinic during the autumn and spring semester of year three. It covers introduction to clinical work, and during this period students acquire the first skills and methods needed for the work of a veterinary surgeon.
During the fourth year the students are rotated at the Faculty's Small and Large Animal Clinic so that each student can participate in the work of the clinic during the autumn and spring semester. The rotation continues during the autumn semester of the fifth year so that each student can participate in the work of the clinic for two weeks.

The Department of Therapy is responsible for organizing clinical training. Schedules are drawn up at the beginning of each academic year. Depending on the assignments of each course, students receive their training manuals and programmes.
Clinical training and extramural work is evaluated as follows:

- Year 1 – assessment is based on attitude to work and interest in the speciality. The surgeons and ancillary staff of the clinic complete an evaluation sheet about each student.
- Year 2 – assessment is based on attitude towards work and the attitudes at the place of hands-on training. The on-site supervisor at an animal production enterprise completes an individual evaluation sheet for each student The student is required to write up a report by a fixed deadline.
- Year 3 – assessment is based on attitude towards work and attitudes at the place of hands-on training. The on-site supervisor (surgeon, AI technician) completes an evaluation sheet for each student. The student is required to submit a course paper by a fixed deadline. Introduction to clinical work: the students receive a written handbook about the rules and regulations of the clinic.
- Year 4 – the veterinary surgeons of the clinic assess the knowledge of the students and attitude towards work in the course of work on the basis of an evaluation sheet. The student is required to submit academic medical histories in written form to the corresponding instructor of the speciality. The student has to keep a diary.
- Year 5 – the veterinary surgeons of the clinic assess the knowledge of the students and attitude towards work in the course of work on the basis of an evaluation sheet. The student has to submit academic medical histories in written form to the corresponding instructor of the speciality. The student has to keep a diary. At the end of the clinical training period of the fifth year the student submits a case analysis in written form by a fixed deadline.

4.6. Ratios

The ratio of theoretical study to practical training is 1:1.7 (2,300 hrs : 4,094 hrs)

The ratio of clinical training to theoretical and practical training is 1:3.6 (1,376 hrs : 5,018) hrs)

4.7: Further information on the curriculum

Basic subjects
All the basic subjects are compulsory for all students, and the credit points are awarded after passing an exam or a preliminary exam.
Basic subjects are taught mostly during the first two academic years. The exceptions include parasitology together with invasive diseases, which is taught during the fourth and fifth years, pathological anatomy together with autopsy, which is taught from the spring semester of year 3 to the autumn semester of year five, basics of research (taught during the spring semester of year 2), and toxicology (taught during the spring semester of year 4). The teaching of pharmacology is divided into two parts. The basic course is taught during the autumn semester of year 3 and the course in clinical pharmacology is taught during the spring semester of year 4.

Anatomy and histology together with cytology and embryology make up two separate disciplines. The teaching of anatomy begins during the autumn semester of the first year and ends with the autumn semester of the second year. The teaching of cytology, embryology, and histology begins in the spring semester of the first year and ends in the autumn semester of the second year. Both disciplines end with exams. During the course in anatomy students are required to take three exams.
The current curriculum uses the term 'animal biology' for biology. Cell biology is taught during the course in cytology.
In the present curriculum biostatistics is taught during the course in information science and biometry.
Chemistry, biochemistry, and molecular biology and biophysics are taught in cooperation with the Institute of Animal Science and the Faculty of Rural Engieneering at the Estonian Agricultural University. Animal biology and genetics are also taught by the Institute of Animal Science.
Epidemiology is taught during the courses in epizootology and animal health. An in-depth course in epidemiology is taught in the sixth year.

Animal production

Preventive veterinary medicine and herd health monitoring are taught as the parts of the subjects Animal Health as well as herd health monitoring. In-depth teaching of herd health programs will take place during 6th year of the studies.
The course of different species in farm livestock husbandry is taught by the Institute of Animal Science. Foundations of economic sciences is taught by the Faculty of Economics and Social Sciencies, and the basic course in agronomy together with the basics of botany is taught at the Faculty of Agronomy of the Estonian Agricultural University.
The main formats of study are lecture and practical work. All the subjects in this module are compulsory, and the credit points are awarded after passing an exam or preliminary exam.

Clinical subjects

Clinical subjects are taught from the third year of study up to completion of studies. The curriculum does not have clinical medicine and diagnostic imaging as a separate subjects. Clinical medicine is dealt within the course of teaching other clinical disciples (infectious diseases, parasitic diseases, internal diseases, surgery). Diagnostic imaging is taught during the courses in radiology, roentgenology, and clinical diagnostics. The programme for the sixth study year includes as separate disciplines zoonoses and veterinary public health. Forensic veterinary medicine is taught together with pathological anatomy and autopsy in the fifth year of study. All the subjects are compulsory and the credit points are awarded after passing an exam or a preliminary exam. The main study formats are lecture and practicals. All the clinical teaching is carried out on the basis of large and small animal clinics (including also mobile clinic). In addition, during the clinical sessions students are taken to the partner farms of the Agricultural University.

Food hygiene

In addition to theoretical studies, the students are required to complete a two-week hands-on training period and food hygiene training at a meat-processing enterprise. It includes:

- Organization of state supervision; familiarization with the existing legislation (independent work and discussion with the state veterinary inspector of the enterprise), legislative problems in practice; familiarization with the self-control system of the enterprise and its control; familiarization with the lab of the enterprise and, if possible, taking of practical samples and their analysis; theory and practice of HACCP and self-control.
- Animal welfare: familiarization with the existing legislation that regulates this area, animal welfare and meat quality etc.; theory and practice of ante-mortem control
- Samples taken in the course of state supervision and monitoring. Sample taking, their transportation, covering letters and interpretation of the results.
- Waste - its classification and management. Relevant legislative acts (theory and practice). A visit to a low-risk waste management enterprise.
- Post mortem control; familiarization with legislative acts regulating this field; post mortem control resolutions; pathologies, possible infectious diseases; slaughterhouse reports.
- The sampling and investigations for trichinellosis
- The most important lymph nodes of the carcass and the internal organs and the making of incisions for their study; practical post mortem control.

In addition to hands-on training at a food-processing enterprise, in future the students will have the opportunity to undergo training also at the experimental department of the Development Centre for Meat Technology, where one can familiarize oneself with the preparation of various meat products, starting with the reception of the raw materials and ending with packaging. The students will have the possibility to learn the methods of meat carving and sanitation management. The experimental department is first and foremost intended for the hands-on training of meat technologists and students of vocational schools. However, it also allows to organize practicums of meat processing for the students of the Faculty of Veterinary Medicine. Location: Tartu Vocational Education Centre, Kopli 1, Tartu.

Professional knowledge

Management of veterinary practice is taught in the sixth year of study, and it is compulsory for all parts of differentiations. Veterinary certification is not a separate subject in the curriculum. This subject is taught in the framework of the course in Organisation of Veterinary Services and Legislations in the fifth year of study. Professional ethics is briefly taught during the course of Animal Protection and Professional Ethics in the first year of study. In addition, professional ethics is taught more thoroughly in the sixth year when it is compulsory for all specialities.

4.8. Specific information concerning practical clinical training

An overview of the organization of practical clinical training was provided earlier in 4.4. One might add here that clinical rotation is compulsory for all the students. The table below shows the duration and times of rotation at the Faculty clinics during the course of study.

Table 4.7.1. Clinical rotation at the Faculty clinics during the course of study

	Year 3	Year 4	Year 5
No. of weeks	2 weeks (during the year)	2 weeks (during the year)	2 weeks (autumn term)

Participation in practical clinical training is calculated on the basis of full workdays and rotation takes place on an equal footing between the clinics of small and large animals. Students work together with the surgeons and take part in the work on all the cases and procedures. At the Large Animal Clinic there is a patient per two students at a time. Students are required to register the *status presense* of the patient on a daily basis and to follow the treatment. In addition, the students have to write up a medical history during the period of practical clinical training. At one time 12-15 students undergo practical clinical training in the animal clinic.

Because the rotation at the clinics begins only in the third year of study, together with completing the first clinical subjects, students have no previous experience in clinical work, and the practical clinical training in the third year is at the same time their first experience of veterinary work.

Since 1 September 2004 the Faculty clinics will have a 24-h duty and reception and all those students who are undergoing rotation at the clinic on these days, will be involved according to schedule.

The mobile clinic is not a separate unit but is a constituent part of the Large Animal Clinic. The same surgeons who work at the Large Animal Clinic make calls to farms. All the students who work at the clinic are involved in the work of the mobile clinic. Each surgeon who drives to farms takes along 1–2 students at a time.

2. COMMENTS

The present curriculum conforms to the laws of the Republic of Estonia and the respective EU directives. Over the past years the Faculty has constantly analysed and developed the curriculum. All the departments are involved in this work, whereas the critical points are elaborated and coordinated by the Study Committee of the Faculty. If necessary, proposals for making changes in the curriculum are submitted to the Department of Academic Affairs. Recently the major changes in the curriculum concerned the addition of the sixth year of study. At the moment no student has completed the six-year training period (the first graduates will be in 2008). Division of the different study forms in the sixth year curriculum is still under development.

3. SUGGESTIONS

The curriculum changes introduced next year will make it more transparent. They will also bring the curriculum in line with the subject names and content used in the EU.

Further development of the curriculum should consider the following:

- Basic subjects should be taught during the first three years and the rest of the study period should be devoted to clinical disciplines.
- There should be better integration between the departments with regard to clinical training. The proportion of problem-based learning should be increased. There is a need for interdisciplinary seminars.
- Population medicine should have a greater role in the teaching of productive animals.

Next year diagnostic imaging will be introduced as a separate discipline. Also, clinical medicine will constitute a separate module, which will include infectious diseases, parasitic diseases, internal diseases, and surgery. Epidemiology will be taught in the third year of study.

CHAPTER 5:
TEACHING: QUALITY AND EVALUATION

1. FACTUAL INFORMATION

5.1. Teaching programme

The Faculty of Veterinary Medicine has a Committee of Studies that is responsible for the analysis of the curricula and the coordination of teaching between the departments. The study programmes and subject descriptions are revised each academic year. The curriculum of veterinary medicine generally meets the European requirements for higher veterinary education. As a recent major undertaking the committee worked out the teaching programme for the sixth year of study of veterinary medicine that proceeded from the EAEVE standards and suggestions.

A large part of teaching is based on classroom lectures and supervised practical training. Recently the role of seminars and supervised teaching has increased in the subject programmes. In clinical subjects problem-based teaching has increased both in seminars and practical training. The changes require more independent work on the part of the student, which is now facilitated by the fact that in recent years departments have acquired new textbooks and technical equipment. It is apparent that the previous conservative approach is being replaced by more modern opportunities. The Faculty has a well-equipped contemporary computer room that has created good opportunities both for interactive computer-assisted learning and individual work. The teaching staff increasingly use multimedia facilities for teaching.

The Faculty is relatively well-equipped with Estonian-language textbooks. Unfortunately, many of them are outdated and worn out, which means that they need to be replaced in the foreseeable future. Despite the existing problems some departments have been able to write and print textbooks. The departments have the major foreign-language textbooks and manuals (usually multiple copies), and they are used to supplement and improve the teaching materials. Also, these resources are available to the students for independent work. Many textbooks and professional journals are available at the library, but even there the number of copies is limited. To some extent it reduces the opportunities of the students to learn independently. At the same time the teaching staff and the students have access to various professional databases (*Agricola, PubMed, ScienceDirect,* and others) that enable to read full-length articles of many scientific journals. This opportunity is extensively used both for teaching and research.

The Faculty has signed cooperation agreements with a number of institutions for outside teaching. In practical and clinical training the Faculty cooperates with several meat-processing plants (Rakvere, Saaremaa, Valga, etc.) and dairies (Valio Eesti AS, Põlva Piim AS etc.). Cooperation agreements have been signed with a number of departments of the Veterinary and Food Laboratory and also with county veterinary centres. At present the Faculty has signed agreements for practical training and research with more than ten Estonian agricultural enterprises (Estonia OÜ, Põlva POÜ, Tartu Agro, etc.), and in the near future this number will further increase. In order to organize clinical training of the students, the Faculty selected outside supervisors from among the veterinary surgeons serving the large farms in various regions of Estonia and working at small animal clinics. By now the Faculty signed agreements with these people. The cost of outside clinical training of the students is paid from the Faculty budget.

5.2. Teaching environment

The teaching staff have opportunities to update their knowledge at European higher educational establishments and research institutions within the framework of *PHARE*

Project ES0105.02 Competence Centre of Veterinary Public Health with a budget of 1.5 million EEK (100, 000 €) (List of teaching stuff who have been using the possibilities are given in *Appendix XIII)*. The Open Universities of both the Estonian Agricultural University and the University of Tartu offer in-service training for the teaching staff. A number of lecturers attended courses on teaching at the tertiary level organized by the Open University of the University of Tartu. Also, the teaching staff can attend the refresher courses in pedagogy organized at the Tallinn Pedagogical University.
At the moment the Faculty has no system for the evaluation of teaching. Nor are our employees awarded bonuses for excellence in teaching or improvement. Despite this the Faculty has from time to time found possibilities to award occasional bonuses for long-term excellence in teaching and supervision. As a rule, our Faculty does not provide fast-track career opportunities; rather, the established academic practice is followed. When electing the teaching staff the Faculty values previous teaching experience and capability in its various forms (e.g. *venia legendi* for applicants of the position of Associate Professor).
The teaching staff can use technical and design assistance of the Multimedia Centre of the University of Tartu for the preparation of their teaching materials and conference presentations (posters) and making them more attractive, especially in the areas of virtual teaching and use of multimedia (audio-visual) facilities. Payment for these services is according to the price list.

5.3. Examination system

The Faculty uses the all-university examination system that is based on the academic rules approved by the Council of the Estonian Agricultural University (http://www.eau.ee/301). The rules rest on the University Act, Standard of Higher Education, Adult Education Act, general requirements of teacher training, and the statutes of the Estonian Agricultural University. The academic calendar that is published in the annual academic guide shows the beginning and end of the academic year, semesters, examination sessions, and holidays. During the academic year there are two examination sessions: two weeks in January and three weeks in June.
Students have to pass exams and pass/failure exams during the examination session following the course. The exam is the main method of evaluating knowledge, and usually the examiner is the same lecturer who taught the course. The format of the exam (oral or written, requirements) are spelt out in the syllabus that is drawn up by the subject teacher and is approved by the head of the department. A pass/failure exam is a method of assessing knowledge or regular work, where the result is shown as ‘pass’ or ‘failure’. The syllabus describes the order and the requirements of a pass/failure exam. One can asses also regular tests, laboratory work, reports, term papers and projects, the results of which are not recorded in the examination sheet but may affect the result of the exam (pass/failure exam). The Faculty practises mainly two examination formats: oral questioning and written answers to questions. In the case of oral questioning a student may be given some preparation time to prepare written answers for longer questions.
The multiple-choice examination format is not common. In a number of pre-clinical and clinical subjects the examination mark is based on the results of interim assessments. In a number of clinical subjects there is a clinical pass/failure exam. Usually the lecture decides on a suitable examination format, taking into account the specificity of the subject and teaching methods.
A lecturer is required to record the exam results in the examination sheet. If students fail to turn up for an exam or a pass/failure exam on the chosen day, the lecturer records it

as ‘no-show’ in the examination sheet. The entry ‘no-show’ equals failure. In the case of a no-show because of a valid reason the entry ‘no-show’ is cancelled if proof of a valid reason is submitted within seven days after declaring the exam results. After a repeated failure in the same subject the lecturer may refer the student to a committee exam (pass/failure exam). A student can be expelled for poor academic progress after failing an exam (pass/failure exam) three times in the same subject. The student is required to retake the exam during the same examination session. The lecturer returns the completed examination sheets, which are endorsed by the head of the department, to the Dean’s office within one week after the end of the examination session. Usually a failure in an exam or pass/failure exam is not a hindrance to taking the other exams and pass/failure exams unless the curriculum provides it differently. A student is not allowed to take an exam if a prerequisite subject is not completed.
A student is allowed to take the final exam(s) if he/she has completed the entire previous curriculum. The Faculty Council established the rules for taking final exam(s). The membership of the Committee for Final Examinations is approved by a Rector’s decree at the proposal of the Dean. The Committee for Final Exams includes external examiners who usually work as heads of the committee (Head of the Veterinary and Food Board, leading veterinary practitioners, etc.).

5.4. Evaluation of teaching

The Student Union is responsible for the regular evaluation of the competence of the teaching staff. The Student Union is guided in its activities by rules worked out by the Department of Academic. The guidelines for the evaluation of teaching were approved by Resolution No. 39 of the Council of the Estonian Agricultural University of 21/12/2000. The evaluation of teaching and subjects is carried out by means of student questionnaires. The aim of the student questionnaires is to offer regular feedback to the teaching staff and the academic structural units about the subjects taught in order to use the collected information for the improvement of the content and form of subjects. Questionnaires allow the students to evaluate the competence of the teaching staff, influence the standard of teaching, and use the collected information for making choices during their studies. The questioning is carried out by the Student Union in cooperation with the dean’s office of the Faculty. The evaluation results are forwarded to the Dean. The Dean analyses the results with each lecturer on an individual basis.
In addition, the Faculty uses evaluation sheets, approved by the Faculty Council, to question students about the standard of teaching. Starting with 2004 the teaching staff complete questionnaires about the teaching and working environment. The results of the evaluation sheets serve as a basis for efforts to overcome the existing drawbacks.

5.5. Student welfare

The University has many possibilities for the extracurricular activities and recreation of students (student club, sports centre and sports clubs, dormitories, the guest house, cafeterias, etc.). The Maintenance Service of the Estonian Agricultural University is responsible for their management and use. The cafeteria prices and the rent at the sports facilities are rather inexpensive considering the income of students.

The conditions and terms for applying, awarding, and paying student benefits are regulated by the Student Benefits and Student Loans Act (https://www.riigiteataja.ee/ert/act.jsp?id=619566; 07/08/2003).
The Act foresees the following categories of student benefits:

1) basic benefit – cash benefit for a student, with the exception of doctoral students, to cover education-related expenses;
2) supplementary benefit – supplementary cash benefit with the purpose of covering living and transportation costs for those students who are eligible for the basic benefit and whose place of residence is located outside the local-government unit and the adjacent local goverments where the educational establishment is located. The supplementary benefit does not apply to doctoral students;
3) doctoral benefit – cash benefit for a doctoral student to facilitate doctoral studies and commitment to research and to cover education-related costs.

The Dean sets up a committee for awarding the study benefits. The committee consists of five members, two members are students. The committee draws up the ranking of eligible students who have submitted an application for the basic benefit according to the curricula. Students are ranked by different years of study. Students are ranked according to the cumulative percentage of completion of studies as of August 31 and January 31. The students who have completed the scope of studies by 100 per cent or more receive an equal ranking. Master's students are ranked on the basis of the earned credit points. In case a number of applicants receive an equal ranking, the preferred student is the one with better grades. Should the results remain equal even under these circumstances, the committee will prefer the student who has achieved excellence in learning, is socially active, or has successfully attended professional competitions or contests. Should the results still remain equal, the preferred student is the one whose revenue was smaller in the previous year. Supplementary benefits are awarded on the basis of the rankings drawn up for the basic benefits for those applicants whose place of residence according to the Estonian Population Registry is located outside the local municipality and the surrounding municipalities where the Estonian Agricultural University is located.
Students have various possibilities for solving the problems that arise during their studies. At the beginning of the first year of study students are assigned a supervisor (curator) from among the teaching staff who in cooperation with the Dean's office helps students to adapt to university life and later helps to find solutions to all kinds of problems.
The Student Union of the Estonian Agricultural University is active in dealing with the study and social problems of the students. The education task force of the Student Union focuses on study-related problems. These include improvement of relations between the students and the teaching staff, participation in the work of the committee of studies of the university, proposals for improving the educational standard provided by the university, involvement of students in working out the changes, and forwarding of educational information to the Student Union. The social task force makes efforts to improve the general social welfare of students. Its areas of activity include social benefits, travel discounts, and the solution of residential issues through the Dormitory Council, Internet access in dormitories, student cafeterias, social studies among the student population, and other current social problems.
During the studies students are also supported by the City of Tartu. A student is eligible for a social benefit if his/her family received a welfare benefit during the previous

month. In that case the student should live at an address that is different from that of his/her parents. According to the regulation, the Tartu City Government compensates residential expenses up to 15 EEK (1 €) per 1 m^2 a month. Married students are eligible for a benefit if they meet all the requirements of the Social Welfare Act. The law determines which kinds of revenue are taken into consideration when applying for the benefit. The applicants must be entered into the registry of Tartu residents, and they must also share an address (personal residence, rented residence). The Social Welfare Act does not require that married family members have the same family name. The size of the benefit depends on various circumstances. A student single mother is entitled to a benefit of 700- +150- +300- EEK (44- +10- +30 €) until the child becomes one year old, the benefit for a child aged over one year is 600- + 150- +300- EEK (38- +10- +30 €).

The Department of International and Public Relations at the Estonian Agricultural University organizes the reception of international students and takes care of their studies at the Faculty. The department helps international students to adapt to university life and life in Estonia and helps them to solve various problems.

The Estonian Agricultural University has a careers service that organizes contacts between employers and students and graduates who seek jobs or places for practical training. In addition, it provides comprehensive job-market-related information and training, helps to make career choices and provides advice on how to find jobs. The employers can introduce their enterprise to the student body of the Estonian Agricultural University and find young and educated labour. The database of vacant jobs and places for practical training is being created and improved. A student or graduate can find information about the contests in progress and get in touch with the employer, if necessary. The careers service cooperates with the Labour Market Board, careers advice information centre, and the careers service of the University of Tartu.

2. COMMENTS

The quality of the teaching programmes and teaching proceeds from the possibilities of our Faculty and is on a more or less satisfactory level. Positive feedback from the graduates and the professional job market with a host of opportunities prove it.

The organization of exams is time saving, efficient, and fair. Students have not filed any protests contesting the examination results.

The choice for external examiners is limited because the smallness of Estonia. Nevertheless the Faculty makes every effort to invite the best specialists as members of the examination committee. Their say in assessing the student work provides an indirect assessment to the standard of teaching at the Faculty.

Students have an opportunity to actively participate in the work of the Faculty, including the discussions of new study programmes. The statutes of the Faculty (http://www.eau.ee/16142) require that student members must form at least 1/5 of the Council membership. The Council confirms the rules governing the election of student representatives.

3. SUGGESTIONS

The Faculty is of the opinion that there is no need to change the rules for conducting exams. Taking into account the small number of students, there is no big difference whether an exam is oral or written—the time spent is similar. Thus, there is no need to

make the rules compulsory in one or the other direction. The lecturer's choice is decisive and it depends on the format of teaching and the content of the subject.
It is necessary to involve more external examiners in the work of the committees for final examinations. Their neutral and fresh attitude towards future colleagues allows it to better evaluate their applied professional knowledge and to detect potential drawbacks and necessary changes in the study programmes. In future international visiting lecturers will make our final exams a more interesting and thorough (versatile) evaluation of knowledge.
The Faculty intends to expand cooperation with the Estonian Association of Veterinary Surgeons (http://www.eau.ee/~ely/) in the area of curriculum development and improvement. The Faculty welcomes suggestions how to change the curricula so that they could respond more flexibly to the needs of the job market.
In order to improve the standard of teaching at the Faculty, each department should evaluate the standard of teaching and the qualifications of the teaching staff on a more regular basis and more efficiently than so far. The statutes of the Faculty state that the head of a department is responsible for the organization of teaching at the department, development and unification of teaching programmes, and supervision over their implementation (http://www.eau.ee/16142).
Application of contemporary teaching methods will certainly bring about important changes in the standard of teaching. The Faculty already has the necessary equipment or will receive it in the near future. Regular in-service training of the teaching staff is of great importance for keeping and raising the good standard of teaching.

CHAPTER 6:
FACILITIES AND EQUIPMENT

1. FACTUAL INFORMATION

6.1. Premises in general

Extensive reconstruction and renovation work at the main complex of the Faculty of Veterinary Medicine at 64 Kreutzwaldi Street was started in 2002 and has to be completed in 2005 (*Appendix VI*). The State Investment Program determines the amount and implementation of the financial resources .
Two Phare projects, ES01.05.02. Competence Centre of Veterinary Public Health and CRIS No 2003/005026.07.04 Upgrade of Clinical Veterinary Medicine in Estonia, facilitate upgrading of teaching and research equipment at the Faculty (*Appendix V*). The total amount of equipment procurement is 3,669,180 €, of which PHARE co-financed 2,333,180 € and Estonia co-financed 1,336,000 €.

6.2. Animal clinics and rooms used for animal hospitalisation

Table 6.2.1. Places available at animal clinics and hospitalisation rooms

- number of hospitalisation places for cattle	10	plus a post-operation recovering box of 4.5 m^2 and two pens for calves
- number of hospitalisation places for horses	17	incl. 15 9 m^2 and two 13.5 m^2 boxes
- number of hospitalisation places for small ruminants	6	2.82 m^2 each
- number of hospitalisation places for pigs	12	3 m^2 each
- number of hospitalisation places for dogs	14	1.65 m^2 each
- number of hospitalisation places for cats	32	4 complex cages with 8 sections each

In addition there is a separate room of 30 m^2 where the cages for different small and laboratory animal species can be placed for teaching and research purposes.

Number of animals that can be accommodated in isolation facilities;

- small animals	3
- farm animals and horses	6

6.3. Enterprises involved in teaching

The Faculty has no farms with normal healthy animals for teaching purposes. That is why we have signed agreements with different farms in the vicinity of Tartu. All the sheds are less than 100 km from the Faculty.

Torma POÜ	~ 600 cows, 1000 bovine animals altogether
OÜ Eerika Research Farm	80 cows
Põlva POÜ	~1000 cows, altogether 1800 bovine animals
Aardla Milk Co-operative	~ 200 cows
OÜ Estonia	~2000 cows
AS Tartu Agro	~1500 cows
Ilmatsalu Swinery	~5000 pigs
MTÜ Equestrian and Recreation Centre	horses
Luunja Equestrian Centre	horses

6.4. Premises used for theoretical, practical and supervised teaching

Table 6.4.1. Premises for lecturing

Number of lecture halls 6

Number of places per lecture hall

Hall	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Places	84	50	33	30	40	40

Total number of places in lecture halls 277

Location of the lecture halls:
Lecture hall 1: Under renovation, opposite to microbiology complex
Lecture hall 2: obstetrics and gynaecology
Lecture hall 3: internal diseases
Lecture hall 4: animal clinic
Lecture hall 5: food hygiene
Lecture hall 6: food science

Table 6.4.2. Premises for group work

Number of rooms that can be used for group work (supervised work) 8

Number of places in the rooms for group work:

Room	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
Places	10	10	15	15	10	16	25	16

Total number of places in rooms for group work 117

Room 1: obstetrics
Room 2: animal protection
Room 3: internal diseases
Room 4: computer class
Room 5: animal clinic
Room 6: animal clinic
Room 7: anatomy, Museum of Anatomy and Orthopedics
Room 8: anatomy
All these rooms are used for both lectures and group work

Table 6.4.3. Premises for practical work

Number of laboratories for practical work for students 18

Number of places per laboratory

Room	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
Places	20	25	25	25	15	30	4	24	15

Room	No. 10	No. 11	No. 12	No.13	No. 14	No. 15	No. 16	No. 17	No. 18
Places	8	8	8	8	8	8-14	8-14	8-14	8-14

Total number of places in laboratories: >263
Room 1: Physiology
Room 2: Animal welfare
Room 3: Artificial insemination
Room 4: Parasitology
Room 5: Microbiology
Room 6: Pathological anatomy
Room 7: Anatomy I, osteology
Room 8: Histology
Room 9: Obstetrics, fetotomes, fantomes
Room 10-14: Food hygiene
Room 15-18: Food science

The rooms for practical work also include the rooms used for sample preparation and analysis.

The Faculty has close cooperation with the State Veterinary and Food Laboratory and the Tartu Laboratory of the State Health Protection Inspection, especially in research. The laboratories have set up a «register of work safety» that the students sign in order to confirm that they have been introduced to the work safety rules and regulations at the specific laboratory.

All new and renovated premises at the Faculty are built in full accordance with the work safety and health protection requirements. Further information on the legislation can be found at http://www.legaltext.ee

6.5. Diagnostic laboratories and clinical support services

1. Laboratory of clinical express diagnostics at the animal clinic, 36 m^2, equipped with the apparatus for different express tests

2. Diagnostic laboratory in parasitology; four rooms for practical studies in parasite diagnostics and parasitary diseases treatment for the undergraduate and postgraduate students, researchers and teaching staff.

2.1. Room B217 is mainly used for teaching but is also used for doing research on animal coprotests with different methods. The room is equipped with thermostates, a freezer, a magnet stirrer, compressors, a Baermann's apparatus, microscopes, glassware, textbooks, a collection of fixed parasites and samples of antiparasiticums. The maximum number of student places is 12.

2.2. Research laboratory B219a is used for the studies on epidemiology and treatment of toxocariosis in dogs and for the studies of trichinellosis using Stomacher apparatus.

2.3. Room B115a is used for parasitological autopsy, both for teaching and research purposes, diagnosing and study of samples collected from animals. The maximum number of student places is 6.

2.4. Room 001 is used for experimental parasitological studies using laboratory animals (mice, cats etc). It contains cages for animals, a laboratory, a washing room and a toilet.

After the renovation parasitological research will be carried out in a training class equipped with fan-integrated and multi-point source ventilation, light microscopes, contemporary worktables and stools.

Parasitological necropsies will be carried out in the new dissection room in the pathoanatomical complex.
Research work will be carried out in a separate two-room laboratory that will be equipped with fan-integrated and single-point source ventilation and ELISA equipment for performing serological studies. Molecular diagnostics (DNA analysis) is available at the bacteriology laboratory of the same department.

3. Laboratories of virology and microbiology of the department of infectious diseases.

As there is not enough space for the separate facilities, the laboratories are used both for teaching and research work at present. During the renovation process, modern laboratories for tutorials will be built and equipped.
At present the virology laboratory is divided into two: cell culture lab (22.2 m^2) and general lab (27.9 m^2). The first of them is equipped with a CO_2 incubator, light microscopes and a refrigerator. A cooling centrifuge is used for the treatment of cell cultures. Viral stems and cell lines are stored in a freezer at – 80°C.
General laboratory is equipped with ELISA and laminar flow hoods. This room is also used for teaching at present. Microscopy room (6 m^2) contains an inverted microscope (light and luminescence) and ovoscopes for working with chicken embryos.
Microbiology laboratory has a general part with thermostates, refrigerators, laminar flow boxes, centrifuges, colony counter and microscopes. This room is used for student seminars and tutorials and is equipped with a multimedia projector.
In addition to laminar boxes, a small room of 4 m^2 is used for sterile inoculations. Washing room is equipped with a water purification system (distillation and Milli Q), dishwasher, dry heater and an autoclave. The media preparation room (5.6 m^2) has a pH-meter, scales and refrigerators. There is a separate room of 4.5 m^2 for the spectrophotometer. In the office (13.4 m^2) we can find computers and a copy machine.

4. Necropsy room and pathological histology laboratory.

Necropsy complex of pathological anatomy is located on 214 m^2 and consists of necropsy room, preparation room, teaching room, incinerator, dressing rooms and an office for the pathologist. There are two special necropsy tables for small animals and one for large animals. There is a special table for the dissection of intestines, equipped with separate point ventilation and lights. A telfer is used for the transport of animals and a special hydraulic trolley for the intestines. Besides that there is an electric dissection saw, a vice and the scales for weighing the organs. Ventilation system has filters for both inflow and outflow air, the outflow air passes through EU filter. The canalisation system has a stop valve and the content of the system can be detoxified or neutralized.

The incinerator works on liquid fuel and its capacity is 100 kg per day. The freezing chamber next to the incinerator makes it possible to store the material of animal origin before cremation.

Research laboratory of pathological histology is located on 56 m^2. It is equipped with a freezing microtome for the frozen histological slides, tissue processing system for the paraffin technique, both a sledge and a rotor microtome and an automated staining system (60 slides at a time). In addition, light microscopes, a fluorescence microscope and a scanning electron microscope (together with digital photo processing and printing) enable immunohistochemical and tissue surface investigations.

5. Diagnostic equipment at the Animal Clinic:

I. Equipment in use on 30.04.04

1. Electrocardiograph (2000)
2. X-rays for small animals (Ruta, 1999)
3. Dental drill (2001)
4. Express laboratory: centrifuge, hematocrit centrifuge, cytocentrifuge
5. Ultrasonograph (obtained 3 years ago from the Tartu University Clinic)
6. Ultrasonograph with 7.5 and 5 MHz transducers for gynaecological investigations (2003)
7. Videoendoscope EV 2700 (2004)
8. Fiber endoscope for small animals (2004)
9. Veterinary portative ultrasonograph Logic Alfa 100 MP for limb examination, rectal examination, pregnancy diagnosis in small animals, examination of internal organs (until a stationary ultrasonograph will be installed)

II. During renovation of the clinic the following equipment will be installed in middle of the year 2004

1. Operation table for large animals – 1
2. Operation tables for small animals – 4
3. Anaesthesia equipment for large animals – 1
4. Anaesthesia equipment for small animals – 6
5. Autoclave
6. Washing machine for surgical instruments
7. Operation lamps – 7

III With thePhare follow up project procurement at the end of 2004 and beginning of 2005 the following equipment will be installed:

1. X-rays for large animals (80 kV) and for small animals (32 kV)
2. Stationary ultrasonograph for the examination of internal organs in small animal clinic
3. Laparoscope
4. Arthroscope for the operation of joints
5. Electrocardiograph
6. Dental drill for small animals
6. Videoendoscope

6.6. Slaughterhouse facilities

At present practical training for students is organised in three slaughterhouses: Saaremaa, Valga and Rakvere. The enterprises provide the students with accommodation. The duration of the practical training is two weeks. It consists of both a theoretical and a practical part. The theoretical part introduces students to the legislative documents regulating this field, self-assessment system of the enterprise, HACCP and self-control, animal welfare. The students get practical training in the ante mortem and post mortem examination.

6.7. Foodstuffs processing units

In the course of their studies students visit slaughterhouses and food processing plants on a regular basis.

In the nearest future it is possible to get an insight into the processing of different meat products, starting from raw material and finishing with the packing of the products, from technological details to the management of sanitation at the experimental department of the Meat Technology Development Centre, which forms a part of the Tartu Service School, Kopli 1, Tartu. This unit is mainly meant for the tutorials for meat technologists and students of the vocational school, but it can also be used for teaching the students of veterinary medicine.
The Estonian Agricultural University and the Tartu Service School signed an agreement in March 2004. According to this agreement, the representative of the EAU, who is working half-time as a technical assistant at the Food Science Department, is involved in launching the experimental department.

6.8. Waste management

An incinerator at the complex of pathoanatomy is used for the elimination of biological material of animal origin. In microbiology and virology laboratories, most of the biological waste is neutralised by autoclaving or chemical detoxifying.
The EAU has a special depot for the short-time storage of chemical waste. An open-end collaboration agreement with the joint-stock company Epler Lorenz (Ravila 75, Tartu 51014) for the management of hazardous waste has been signed.
There is a special room with containers for the collection of medical hazardous waste material at the Faculty (18 m^2). This waste is also transported away and destroyed by the contractual partners.

6.9. Future changes

The Department of Food Hygiene needs rooms for the tutorials in food microbiology and meat inspection. At the present, the negotiations for the renovation of these rooms are still on the way.
Laboratories for metabolic and hormonal analysis will be renovated in spring 2005.

2. COMMENTS

The renovation of the majority of teaching and research facilities of the Faculty started in 2002 and will be finished in 2005. As a result of this, the facilities should meet the needs of veterinary education in Estonia.

Two Phare projects, ES01.05.02 Competence Centre of Veterinary Public Health and CRIS No 2003/005026.07.04 Upgrade of Clinical Veterinary Medicine in Estonia, provide the Faculty with the most of the necessary teaching and research equipment (List of the eqiupment are given in *Appendix V)*.

3. SUGGESTIONS

Optimal use of the new equipment both in teaching and research, as well as its maintenance and upgrading has to be considered and planned carefully in the future.

CHAPTER 7:
ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

1. FACTUAL INFORMATION

7.1 Basic subjects
Preclinical subjects

Department of Morphology:
Anatomy

Anatomy of domestic animals is taught during the three first semesters.
In **semester 1** lab work makes up 104 hrs (4 x 26 hrs). The practical training work covers bones and joints.

1. Bones and joints are taught by using the dry preparations in the collections of the anatomy.

In **semester 2** practical training work makes up 232 hours (4 x 58 hrs). The lab work deals with muscles and internal.

2. Muscles are taught by using:
    a. glycerine preparations of equine and bovine carcasses and limb muscles;
    b. refrigerator-preserved fresh equine limbs;
    c. Fresh corps of euthanaized dogs and cats from the animal shelter and clinics are used for preparation by students. Also refrigerator-preserved fresh dog and cat preparations are used. Each group of 12 students (on average) has a dog and a cat for preparation.
3. Internal organs (digestive-, respiratory-, and urinary organs) are taught by using:
    a. dry preparations in the collections of the anatomy;
    b. refrigerator-preserved preparations of different animal species in the collections of the anatomy;
    c. preservative-solution preparations of various animal species in the collections of the anatomy;
    d. fresh preparations of the dog, cat, piglet and calf prepared by the students themselves and preserved in the refrigerator. Each group receives two dogs, two cats, a calf, and a piglet for preparation.

Total: during second semester each student **group** prepares 3 dogs, 3 cats, a calf, a piglet and which makes in total 12 dogs, 12 cats, 4 piglets, and 4 calves.

In **semester 3** there is only practical work in the scope of 200 hours (4 x 50 hrs). Practical sessions deal with reproductive organs, circulatory organs and nerves, endocrine glands, skin, sense organs, and avian anatomy.

4. Reproductive organs are taught by using:
    a. dry preparations in the collections of the anatomy;
    b. wet preparations kept in preservative solution in the collections of the anatomy;
    c. refrigerator-preserved bovine, equine, and porcine reproductive organs;
    d. canine and feline preparations made by the students themselves and refrigerator-preserved fresh dog and cat preparations. Each group receives a dog and a cat for preparation.
5. Circulatory organs and nerves are taught by using:
    a. dry preparations in the collections of anatomy;
    b. refrigerator-preserved preparations made earlier;
    c. preparations made by students themselves and refrigerator-preserved fresh preparations. Each group makes a dog and cat preparation.
6. Endocrine glands, skin, and sense organs are taught by using:
    a. dry preparations in the collection of anatomy;
    b. ready-made preparations preserved in the refrigerator and glycol solution.

7. Avian anatomy is taught by using:
    a. dry preparations in the collection of anatomy;
    b. chicken preparations made by students and preserved in the refrigerator. Each group makes preparations of two chickens. The chickens come from a poultry farm.

Total: During third semester each **group** of students prepares 2 dogs, 2 cats, and 2 chickens. In total 8 dogs, 8 cats, and 8 chickens are prepared.

During the entire course of study 20 dogs, 20 cats, 8 chickens, 4 piglets, and 4 calves are prepared at anatomy.

Pathology

Table 7.1.1. Number of necropsies during last 3 years (2001 – 2003)

	Animal species	Number of necropsies		
		2003	2002	2001
Large animals	Cattle	18	30	20
	Horses	1	1	1
	Small ruminants	2	3	3
	Swine	42	45	27
	Poultry	34	38	24
Small animals	Dogs	5	6	2
	Cats	2	2	1
	Other companion animals	-	1	-

The material for necropsy is obtained on the day of the training session. A veterinary surgeon or a Faculty lab technician brings it to class. If necessary the material is refigerated at 0°…+ 4° C or frozen -18° C. Pathological anatomy is taught using preparations in preservation solutions. Currently no material is obtained routinely from slaughterhouses.

Department of Animal Health:

Animal physiology is taught by using:

1) the blood of large animals (horse and bovine animal); human fingertip blood
2) ovaries of cows and heifers
3) cow embryos

Sources of the samples used for studies:

a) the blood is obtained from the animals of the Animal Clinic (students obtain them from study animals or patients under the supevision of a surgeon of the clinic)
b) ovaries are obtained from Vastse-Kuuste or Rahinge slaughterhouses (by a slaughterhouse employee)

c) embryos have been obtained from various farms all over Estonia (by an embryo collection group)

Preservation:
1) blood samples are not kept for a long period, blood plasma is preserved in a refrigerator for about a week
2) ovaries are preserved up to 24 hrs in a refrigerator and over 24 hrs in a deep freezer in packages that are used as sets
3) embryos are preserved in liquid nitrogen

Number of samples per student:
1) blood 9-10, incl. 4 from large animals
2) 1-2 ovaries and 20-30 aspirated ova per student
3) 1-2 embryos per student

During the course of General Pathology (pathological physiology) the blood and urine of dogs, cow, and horse are used.

The materials necessary for the practical sessions in haematology and biochemistry are obtained from the experimental animals and current patients at the Animal Clinic of the Estonian Agricultural University.

ECG is done when studying dogs and horses.

Animal Health:

During basic training students visit farms of the animal species that are raised in Estonia (poultry farm, pig farms, horse stables, cowsheds). A student spends 3 hrs in each farm (12 hrs per student). Practical training consists of determining and evaluating the factors of the environment provided for farm animals with the aim to measure their influence on animals welfare and health.

Practical training in **clinical animal health** takes place on animal farms where students carry out evaluation of herd health, solve problems related to herd health, and establish causes of various diseases.

Department of Infectious Diseases

During the teaching of **General Microbiology** and **Virology** students visit animal farms with the aim to learn sample-taking methods and possibilities. Later the same samples are studied in the course of lab work.

When teaching **Virology** the following materials are used to isolate and identify viruses and to detect antibodies: from live animals – smears of the conjunctiva, mucous membrane of the nose, faeces, blood samples, and from slaughtered animals – internal organs. Students are involved in the study of the pathological material of 40–50 farm animals (mostly piglets) for ten hours (virus isolation, identification, antibody detection). The study objects include mostly calves and piglets, less often adult animals. The samples are obtained together with the students. One practical session is devoted to the obtainment of pathological material from sick animals for virological study. There is also a farm visit. The obtained samples are not stored; the materials are studied immediately.

The teaching of **microbiology** focuses on the germs of the infectious diseases of farm animals. The study material includes internal organs of slaughtered animals sent by farms or carcasses of weaner pigs weighing up to 20 kg. A large part of the course is devoted to the bacteriological examination of milk samples for the diagnosis of mastitis. Usually the farm that has ordered the investigation is responsible for the shipment and obtainment of the study material. The examinations of the internal organs of calves and piglets consist of 150–200 samples; the number of milk samples amounts to 100–200. The samples for bacteriological examination are not stored but are immediately used for pathological and microbiological investigations.

Parasitology and Parasitic Diseases:

The teaching includes practical training of examination of faeces, muscle samples, skin scrapings, and detected parasites in farm and game animals, and poultry. Samples are obtained during visits to stables, cowsheds, and pig farms.

Table 7.1.2. The number of parasitological samples studied by students by species.

Animal species	No. of samples		
	2001	2002	2003
Swine	219	82	121
Horse	150	110	80
Cattle	91	1	42
Sheep	226	308	68
Other species (dog, cat, rabbit, chicken, wild animals, ostrich)	45	28	82
Total	731	529	393

7.2. Department of Therapy andAnimal Clinic

The Department of Therapy and Animal Clinic are responsible for the teaching of clinical subjects and providing veterinary services. The aim of the Department of Therapy is to teach clinical disciplines and to conduct clinical research.

The aim of the renovated and contemporary animal clinic is to create a basis for clinical training and teaching by means of high-quality veterinary services. The Animal Clinic consists of the Small Animal Clinic and the Large Animal Clinic.

The main purpose of the Animal Clinic is to provide regular veterinary services for all animal species. The purpose of the Small Animal Clinic is to provide both outpatient and inpatient veterinary aid. The purpose of the Large Animal Clinic is to provide outpatient, inpatient, and mobile veterinary aid. The Department of Therapy has three sections: the sections of internal diseases, surgery, and obstetrics and gynaecology. The academic and support staff consists of 18 people, including seven veterinary surgeons.

In clinical subjects the proportion of classroom work is 2 hrs and 2–3 hrs of practical training per week. Practical training includes:

1) visits to animal farms
2) on-site examination and work on the patients in the clinic
3) study and work on experimental animals in the Animal Clinic.

The Department of Therapy has contracts with 8 farms. A 18-seat bus is available for visits. Practical training is carried out in groups of 8 - 10 students. During the practical sessions a student will acquire the correct methods of procedures and diagnostics. Because practical training deals with common problems and diseases, there is no lack of partner farms. The veterinary surgeons of the Animal Clinic carry out routine treatment.

Students undergo practical training since the third year of study when they take part in the work of the clinic under the supervision of the veterinary surgeons of the clinic.

A brief description of practical training at the Department of Therapy:

1. **Obstetrics and gynaecology (incl. AI):** practical training focuses on the diagnosis of pregnancy per rectum and ultrasound, the assessment of the function of the ovaries, and dystocia cases and AI.. Insemination is taught on dairy farms using animals which are planned to be culled and using the experimental animals in the clinic. On completing the course in AI student receive the professional certificate of an insemination technician. In addition to practical work on farms, gynaecology is taught by using female reproductive organs obtained from slaughterhouses (on average 30 cows, 20 pigs, and the reproductive organs of dogs and cats).
2. **Internal diseases of production animals:** During practical training students will acquire diagnostic methods in the medicine of production animals and the techniques of the more important treatments. Diagnosis and treatment schemes are taught by the problem solving method. Examples include cough in young animals and diarrhoea, studies in herd health, indigestion in cows, study of blood samples for determining the metabolic condition, etc.
3. **Equine internal diseases:** Practical training focuses on problems of the oral cavity, respiratory problems, and digestive disorders. The students will acquire the main diagnostic and treatment methods during visits to stables or at the animal clinic.
4. **Orthopaedics. Hoof trimming**.
5. **Surgery** is taught using the patients who are either hospitalized or consulted as outpatients. Demonstration operations and surgery are carried out by the academic staff of the section of surgery. In addition, surgical treatments are taught during visits to animal farms. For example, castration of pigs, rhinoplasty and ringing of bulls. Routine and scheduled operations are carried out by the veterinary surgeons of the clinic.

Table 7.5. shows the number of animals treated in the course of practical training.

7.3. Food Hygiene

Practical training in meat inspection takes place in co-operation with the teaching of pathological anatomy in the building of pathological anatomy, where students inspect half and quarter carcasses and practise various techniques.
Meat microbiology is taught at the laboratory of food hygiene, where students study the material obtained earlier by the lecturer. Students inspect the markets of Tartu during the group work and obtain research material.
Production and control (HACCAP etc.) are taught during the study visits to two of the largest meat-processing factories of Estonia.
When teaching milk hygiene, students learn to carry out laboratory analyses of fresh milk and dairy products.
Production and control (HACCAP etc.) are taught during the study visits to two dairies.

7.4. Consultations

The Small Animal Clinic is open seven days a week and 52 weeks a year.

Mon-Fri 9-19; Sat 10-16; Sun 10-14.
The Large Animal Clinic is open on workdays 9-17. There is a 24-h duty (incl. weekends and national holidays).
Consultation hours at the Small Animal Clinic: Mon-Fri 16.00-17.00
Large Animal Clinic Mon-Fri 9.00-11.00
Small Animal Clinic 5 consultation hours a week. Mon-Fri 16.00-17.00
Large Animal Clinic 10 consultation hours a week. Mon-Fri 9.00-11.00
Consulting is carried out both by phone and in the form of reception of clients. Each surgeon has a consulting day. The consultations at the Small Animal Clinic are provided by the surgeons of the clinic and private practitioners: cardiac specialist (P-F.Mõtsküla), dermatologist (M.Valdmann), ophthalmologist (Ü.Kell), and neurologist (R.Viitma). The above-mentioned specialists are called upon request and at prior notice. Seminars for animal owners are held during consultation hours upon request.
The reception of patients at the Small Animal Clinic is by pre-registration (with the exception of emergencies).

Table 7.4.1. Number of patients having consultations and ambulatory receptions during 2001-2003

Species		Number of patients		
		2003	2002	2001
Productive animals	Bovine	-	57	45
	Horses	67	100	78
	Small ruminants	-		
	Swines	-		
	Other animals			
Pet animals	Dogs	2886	1413	1932
	Cats	719	850	556
	Other pet animals	135	141	61

7.5. Hospitalization

Table 7.5.1. Number of animals hospitalized during last three years

Species		Number of hospitalisation		
		2003	2002	2001
Productive animals	Bovine	24	26	23
	Horses	8	12	21
	Small ruminants	5	3	0
	Swines	24	6	3
	Other animals	0	0	1
Pet animals	Dogs	1176	1096	577
	Cats	356	225	130
	Other pet animals	24	18	12

7.6. Vehicles for animal transport

Sick animals are transported to the clinic by using a two-seat animal trailer. The tractor vehicle is UAZ (1990).
In 2004 the Phare project will fund the purchase of a jeep and another two-seat animal trailer.
At present the animal owner pays for the transportation. From 1 january 2005 the transportation of the animals to the clinic will be free of charge for the client.

7.7. Emergency service

Starting with 1 September 2004 the Small Animal Clinic will work round the clock. The night shift will consist of one surgeons, one technical assistant, and two students.
In addition to the surgeons of the Animal Clinic, all teachers of the medicine of production animals will be involved in duties at the Large Animal Clinic.

7.8. Mobile Clinic

Since 1 September 2003 the Large Animal Clinic employs 3 veterinary surgeons of large animals, one of which is a specialist in equine medicine. Five-seat UAZ (1990) and Suzuki Liana (2003) are used for farm visits. In previous years the Animal Clinic of the Estonian Agricultural University employed only one veterinary surgeon of large animals in the function of a surgeon on duty, who was responsible for inpatient treatment.
In addition to surgeons of the Animal Clinic, also the teaching staff makes farm visits as described in subparagraph 7.2.
Out-of-hours duties (weekends and national holidays) are manned on the basis of a schedule by all the teaching staff of the medicine of production animals. It is telephone duty.

Table 7.8.1. Number of patients of the Mobile Clinic

Animal species		No. of patients		
		2003	2002	2001
Production animals	Cattle	681	467	485
	Horses	114	112	101
	Small ruminants	30	25	21
	Pigs	90	110	98
	Other farm animals*	0	0	1 ostrich

Herd health is monitored on average in 50 milk herds, 10 stables, and 10 pig farms a year.
Average number of visits per year:
Cattle farms: 250
Pig farms: 80
Stables: 50

Sheep farms: 10
The large animal surgeons and teaching staff of the Animal Clinic complete visit diaries in accordance with the decree derived from the Veterinary Service Act of the Republic of Estonia. All the performed procedures are registered. The Animal Clinic of the Estonian Agricultural University provides services on the basis of a price list.

7.9. Additional information

The Estonian Agricultural University is located in southern Estonia. In this region agriculture is well developed. Within range of 50 km from the Animal Clinic of the Faculty of Veterinary Medicine there are about 8,000 dairy cows, 40,000 pigs, and 20,000 poultry (the closest farms being at a distance of 3-4 km). It has created favourable conditions for finding outside partnership farms. Farmers and horse breeders are interested in cooperation with the Animal Clinic.
The Animal Clinic is the market leader among the small animal practices in southern Estonia. Only the Animal Clinic of the Estonian Agricultural University provides the round-the-clock service in the city of Tartu.
On average 20 per cent of the patients are patients referred by other small animal clinics.
The Small Animal Clinic of the Estonian Agricultural University competes with the other animal clinics in town on an equal basis, that is, the price list is more or less the same.
The government budget or the university budget makes up about 30 per cent of the turnover of the Animal Clinic.
Of the small-animal patients about a half need surgery. Of these patients about 50 per cent are traumas and one third are orthopaedic and neurological patients.
Among the small-animal patients with internal diseases skin diseases make up a half, and gastroenterological and other diseases make up one third.
The veterinary surgeons of production animals at the Animal Clinic perform also more complicated operations, carry out radiological examination, and provide consultations all over Estonia. Their services are needed by private veterinary surgeons, who are involved in production animal practice and agricultural enterprises. In about one third of cases the caller is another Estonian veterinary surgeon. The surgeons of the Small Animal Clinic of the Estonian Agricultural University compete on an equal footing with the other Estonian veterinary surgeons. The price list reveals no considerable differences.
The surgeons of the Animal Clinic have all the necessary equipment for providing high-quality veterinary services (ultrasound and X-ray diagnostics).
The salary of a surgeron of the Animal Clinic consists of the basic pay and the performance-related pay.
The veterinary surgeons of the Animal Clinic of the Estonian Agricultural University are members of professional associations (Estonian Veterinary Association, Estonian Small Animal Veterinary Association), and their activities are in compliance with the statutes and the code of ethics.
The data concerning the patients and their owners are at first registered on patient cards. The patient's data are then entered into the computer using a program worked out in Estonia. The database is protected in accordance with the Estonian Data Protection Act.

Arrangement of clinical training

Students of veterinary medicine undergo practical training at the Animal Clinic of the Estonian Agricultural University, meat-processing enterprises, the state veterinary structure, and selected high-standard private practitioners. One of the practical training centers is the agricultural enterprise AS Tartu Agro, which is located three kilometres from Tartu and has 1,200 heads of cattle and 5,000 pigs.

The clinical training of students is arranged in the following way:

Year 3: introduction to clinical work. Each student spends 2 weeks during the year at the clinic. Assignment: to familiarize oneself with the work of the clinic, to acquire knowledge about the location of the rooms, and to assist senior students and veterinary surgeons.

Year 4: each student undergoes two weeks of practical training (80hrs) at the Animal Clinic of the Estonian Agricultural University. One week in the autumn semester is spent at the Small Animal Clinic, and one week in the spring semester is spent at the Large Animal Clinic.

Year 5: each student undergoes two weeks of practical training at the Animal Clinic of the Estonian Agricultural University including duties. During the autumn semester one week is spent at the Small Animal Clinic, and during the spring semester one week is spent at the Large Animal Clinic.

Faculty-external clinical training is arranged during eight weeks in the spring semester as follows. Practical training in meat hygiene: each student spends two weeks at a meat-processing enterprise under the supervision of an inspector of veterinary supervision.

Practical training in the state veterinary structure: a student spends a week at a regional veterinary centre under the supervision of inspectors.

Practical training under the supervision of a specialist: a student spends a period of five weeks at the Small Animal Clinic, undergoes training under a large-animal practitioner, or at a veterinary lab depending on his/her future track.

When undergoing practical training students complete training diaries that are submitted at the end of the training period.

Evaluation sheets are used to receive feedback from the students and supervisors concerning clinical training.

Year 6: Clinical work is carried out at the Faculty clinics under supervision of the veterinary surgerons of the clinic.

7.10. Ratios

7.10.1: **Animals available for clinical work (2003)**

Ratio: Students/production animals

$$\frac{\text{Number of students graduated in the last year}}{\text{Number of production animals}} = \frac{21}{1043} = \frac{1}{49{,}6}$$

Ratio: Students/companion animals

$$\frac{\text{Number of students graduated in the last year}}{\text{number of companion animals}} = \frac{21}{6460} = \frac{1}{308}$$

7.10.2: **Animals available for necropsy**:

Ratio: students/post-mortem examinations

$$\frac{\text{number of students graduated in the last year}}{\text{number of cadavers necropsied}} = \frac{21}{104} = \frac{1}{4{,}9}$$

2. COMMENTS

The construction of the new buildings of the Faculty of Veterinary Medicine began in the Soviet era (1986), and the first stage was completed in 1992. Construction was abandoned after Estonia regained its independence. Therefore, no complex of clinics was built for the Faculty. The existing rooms were converted into an animal clinic. However, due to the irrationality and insufficiency of rooms it was impossible to hire more surgeons. Despite this fact, the number of patients at the Small Animal Clinic increased in 1998–2002 from 536 to 5,296. The design of a new complex of clinics was started in 2001, and construction and renovation began in 2003. It created conditions for the restructuring of clinical training, which began at the beginning of 2004. The critical period for Estonian agriculture began in 1998 when the prices of animal products dropped. It brought about a low in the demand for veterinary services (farmers had no money to pay for services). Over the period 1998–2003 the number of cows dropped from 160,000 to 116,000.

During the past year the situation has levelled off and farmers have once again become solvent. The animal records for 2003 show that 70 per cent of cows are in herds with over 50 animals. It means that the main veterinary service is provided for large farms. The outpatient reception of production animals is not widespread in Estonia because there is an increasing demand for on-site consultations on farms (advice on herd health). Large-scale agricultural enterprises have created conditions for animal treatment and operations. Therefore, relatively few production animals (cows, pigs, sheep) have been hospitalized at the Animal Clinic of the Estonian Agricultural University.

3. SUGGESTIONS

The development plan of the Department of Therapy forsees two professorships, four associate professorships, six lectureships, and thirteen teaching assistantships for veterinary surgeons by 2007. According to the improved curriculum (will be launched in 2005), the tenth semester will be fully devoted to clinical training.

The proportion of outside practical training will decrease. The Faculty will hire training supervisors from among highly qualified private practitioners, who will receive a certificate after completing the required training and who will have the right to supervise outside practical training.

The number of patients of the Animal Clinic has to be increased, and more visits have to be made to pig farms.

One needs to improve interdisciplinary training, where a student has better opportunities to see the development of a medical case from anamnesis to interpretation of laboratory results.

It is necessary to involve small capacity slaughterhouses nearby Tartu to the teaching process (practical training) of food hygiene. Prelliminary discussions have already started.

CHAPTER 8:
LIBRARY AND LEARNING RESOURCES

1. FACTUAL INFORMATION

8.1. Library

General description of the Library of Estonian Agricultural University
The Library of the Estonian Agricultural University (the LEAU) is an Estonian public library oriented towards agricultural sciences and issues related to the sustainable use of primary resources necessary for human life and environmental preservation, providing the University with information and library services required for its work.

Year of foundation	1952
In the present building (Kreutzwaldi 64)	2000
Gross area	1112 m²

As of 01 January 2003, the following numbers characterise the library:

collection for use	524,575	items
books	490,879	volumes
journals	3,845	annual sets

newspapers	847	annual sets
readers	4,700	
visits	36,095	
loans	69,051	
workplaces in the reading room	50	
employees	19	

- alphabetical catalogue and systematic catalogue
- online catalogue, entries beginning with 1999
- various bibliographical and full text databases
- workstations with Internet connection in the reading room

Short overview about history of the Library of Estonian Agricultural University and other relevant information are presented in English at university homepage http://www.eau.ee/eaulib/ .

The catalogue of the Library of Estonian Agricultural University is a part of Estonian libraries union catalogue ESTER. Entries in the card catalogue of the Library of EAU ceased in December 1999. Beginning with January 2000 all items in the collection are searchable only in the online catalogue. The online database of the Library of Estonian Agricultural University is an integral part of the Consortium of Estonian Libraries Network (ELNET) union catalogue which can be accessed through the Web-catalogue ESTER (http://merihobu.utlib.ee/).

The software used for the creation of the union catalogue is INNOPAC of US company Innovative Interfaces Inc.

It is possible to search the catalogue by author, by title of a book, journal, article, by author and title, by publisher or place of publication, by subject heading, by words in titles, notes, subject headings, by numbers (ISBN, ISSN, callnumber, UDC).

The Library structure and management

The Library consists of a main library located at the main building of the Estonian Agricultural University at Kreutzwaldi St. 64. The structure of the Library is traditional with acquisitions and processing department, information and bibliography department, and department of reader's service incorporating the reading room, loans' counter and storeroom. The head of the department is responsible for the operation of the department and is appointed by the head of the library.

The Library is managed by the library council. The library council is a counselling and coordinating organ, which consists of members representing the university faculties, the student body and the Library. The head of the library is a member of the council by his/her position. The library council meets according to the necessity, but not less than twice a year. The library council appoints the head of the library, evaluates the operation of the library, and makes suggestions concerning budgeting, automation, policymaking and operational issues.

In addition to the library council, the collection development group responsible for working out the basis for acquisition policy is involved in the library management. Likewise, the collection development group makes decisions concerning the distribution of acquisition sums according to subjects taught at the university, and the proportions of study and scientific literature.

Main library is common for all university establishments.
Library's annual operating budget over the past three years:

	National currency	Euros
Year 2004	1,800,000 EEK	115,384 EUR
Year 2003	919,000 EEK	58,910 EUR *
Year 2002	1,000,000 EEK	64,102 EUR **

** Annual Report 2003 will be available in homepage in English in autumn semester*
***Appendix VII. Annual Report 2002*

Number of full-time employees: **19**
Number of journals received (in addition to books and local journals included): **116** *Appendix VIII. Currently Received Foreign Periodicals*
Number of student reading places: **50**
Library opening hours: during term time **opened 09.00-17.00 on weekdays**, closed at weekends, during summer vacations (in July) opened 09.00-13.00, closed at weekends.
Number of loans to students per academic year: **69051** (year 2003)

Information retrieval from scientific online full text and bibliographic databases and CD-ROM databases is fully accessible to students (*Appendix IX. List of databases*)

Subsidiary libraries of the establishment
There are no subsidiary libraries at different departments, however at the departments of veterinary Faculty different number of more important manuals and books are available for teaching purposes, and during the group work of students *(Appendix X). New books and manuals of veterinary medicine obtained within last three years).* New books obtained are listed constantly in library homepage.
Books and manuals at departments are usually listed as loans from library (library holds a list of individual books at departments) and are available for students only at spot if needed (reading, coping, group work, seminars).

8.2. Information technology services

A) There is no audio-visual service at university

B) Computer service department for library is common to university main building.

Number of full time employees: **2**

Library of EAU:
Number of computers available in the service: 8
-less than three years old: 4
-more than three years old: 4
Students have free access to these computers for their own use. Computers are located in the reading room which is open on weekdays 09.00-17.00.

Library employees provide teaching in the use of computers, as well teaching in information retrieval from online databases.

Library does not use interactive CD-ROM for teaching.

Faculty of Veterinary Medicine:
There is a computer room for teaching purposes and for self-use by students as well (16 PCs less than one year old). Computers are connected into university network. Computer room is open for veterinary students on weekdays 15.00-18.00. University provides teaching in the use of computers for the first year students.
Number of full time employees teaching use of computers and taking care of computers and local network as well: **1**
The establishment uses interactive CD-ROM for teaching.

2. COMMENTS

Library:
Comments and suggestions for the future developments
The purpose of the Library of Estonian Agricultural University is to acquire, preserve and make available information necessary for tuition, research and development activities of the EAU.

The last two years (2002-2003) have been favourable in respect to the development of the Library. The Library acquisition budgets (2002-2003) have enabled the Library to perform its tasks. In 2002 the Library received 1.000.000 EEK (64 000 €) from the University budget, and 748.300 EEK (48 000 €) as external funding from the Ministry of Education for acquistions (Project "The improvement and development of the collections of the Library of Estonian Agricultural University). In 2002 the acquisition sums were divided as follows: 42% on printed journals (out of it 78% on foreign periodicals), 27% on research literature, 16% on study literature, 7% on online databases, 4% on reference books. Sufficiently are covered the acquisition of printed journals and research literature. In addition to printed journals, electronic journals are made available through the online full-text databases (SpringerLink of Springer Publishers, Synergy of Blackwell Publishers, Science Direct of Elsevier Publishers, Cambridge University Press, EBSCO). For the Consortium libraries (the Consortium of Estonian Libraries Network incorporating the academic libraries of Estonia, which member the Library of Estonian Agricultural University is) the procurement of online databases is in majority covered from central funding by the Ministry of Education.

Taking into account the basis for acquisition according to disciplines taught at the Estonian Agricultural University, veterinary science is in favourable position.

1.	agriculture in general	17%
2.	veterinary science	16%
3.	rural engineering	14%
4.	economics	13%
5.	forestry	12%
6.	techics	10%
7.	animal husbandry	7%
8.	environmental sciences	6%

9.	langiages	3%
10.	others	2%

In 2002 50 new titles of monographs, and in 2003 32 new titles were acquired in area of veterinary science and animal husbandry through library budget. Different departments can buy new books independently from library budget, but obtained books remain listed in library catalogues. Extra resources were provided by PHARE project.
The Library orders literature in accordance with the requests of academic divisions. The requests will indicate data about the publication, in the case of study literature, the number of potential users (students) and the requested number of copies. The head of the department or the Dean of the Faculty, who is substantially responsible for collecting literature necessary for conducting tuition, shall approve the request.

IT facilities:
The Library IT infrastructure. The Library has a speedy and stable Internet connection via the computer networks of the Estonian Agricultural University and EENet. The Library maintains its own personal computers, a server and computer network. There are 8 computer workplaces for users in the Library premises plus computer classes in the University premises (16 places computer room at Faculty of Veterinary Medicine as well). In addition to that, the users have connected their own computers to the Internet in individual workrooms.

3. SUGGESTIONS

Suggestions for the future developments
The Library of Estonian Agricultural University is an academic library. Academic libraries are fundamental for research as well as academic education.
The role of the academic library as the "heart of the university" has changed significantly over the past decades. Electronic resources have revolutionised academic libraries. The shift is taking place in the move from the paper-based, manual library to the electronic library or the library without walls –virtual library.

The steps that the Library of Estonian Agricultural University has taken towards the electronic library:

- automation of library housekeeping – cataloguing
- public access to the Estonian libraries union catalogue ESTER
- access to Internet resources – staff/users
- the library's homepage giving access to
    - selected links to Internet resources, Internet guides
    - to research information, at the moment primarily journals.

Steps for the future:

- automation of circulation, stock control
- recent literature guides on the library's homepage
- e-reference

- subject gateways, which aim is to offer to the users systematised information according to the disciplines taught at the Estonian Agricultural University
- fee-based quick service offers
- high level consultancy services in information questions.

The potential role of the future university library. The core task will remain giving a still more sophisticated and refined acces to information and as a very essential part of that – electronic access to physical collections. In addition to basic search facilities of electronic catalogues, subject gateways and electronic reference service should be started. It is difficult for a smaller university library to run an electronic reference service on a 7/24 basis, but on a national scale it can be done.

Information access has become easier but what is called information literacy is becoming more demanding with the growing number of possibilities. Information literacy on a high level could become a part of academic education – and the Library should develop competencies to take care of that education.

The open shelves. As for now the Library stocks are closed with the exception of the reading room where on open shelves the currently received periodicals, the reference library of dictionaries, encyclopedias, and the most frequently used textbooks are displayed. To make the use of library funds more handy, the Library plans to enlarge the space of open shelves in the reading room.

CHAPTER 9:
ADMISSIONS AND ENROLMENT

1. FACTUAL INFORMATION

9.1. Student composition

Table 9.1.1. Undergraduate student composition (as of 1 September 2003)

		1999	2000	2001	2002	2003
a.	Total number of undergraduate students	194	211	218	230	206
b.	Male students	35	45	46	28	29
c.	Female students	159	166	172	202	177
d.	**Nationals:** – Estonians – Russians and Russian speakers	153 19	159 19	153 27	163 26	134 31
e.	**Foreign students:** – EU countries – non-EU countries	21 1	32 1	37 1	41	41

f.	Year 1	41	50	42	51	45
g.	Year 2	35	41	44	37	33
h.	Year 3	35	34	45	39	34
i.	Year 4	31	35	35	38	33
j.	Year 5	25	20	28	27	30
k.	Year 6					
l.	Year 7					
m.	students of not any specific year	27	31	24	38	31

Table 9.1.2. Postgraduate student composition (doctoral students) (as of 1 September 2003)

		1999	**2000**	**2001**	**2002**	**2003**
n.	Total number of postgraduate students	8	16	19	21	24
o.	Male students	4	7	8	8	9
p.	Female students	4	9	11	13	15
q.	**Nationals:** – Estonians – Russians and Russian speakers	6 2	16 2	17 2	19 2	22 2
r.	**Foreign students:** – EU countries – non-EU countries					
s.	Year 1	5	10	2	5	4
t.	Year 2	1	5	11	1	5
u.	Year 3	1	1	3	12	3
v.	Year 4	1	1	1	2	9
w.	Year 5		1	2	1	3

Notes: 2 doctoral students study at the Faculty of Veterinary Medicine of the University of Helsinki. Their study is funded by the Estonian Ministry of Education and Research.

Table 9.1.3. Postgraduate student composition (research masters) (as of 1 September 2003)

		1999	**2000**	**2001**	**2002**	**2003**
n.	Total number of postgraduate Students	20	11	9	6	1
o.	Male students	11	4	4	2	1
p.	Female students	9	7	5	4	
q.	**Nationals:** – Estonians – Russians and Russian speakers	18 2	11	9	6	
r.	**Foreign students:** – EU countries – non-EU countries					

s.	Year 1	4				
t.	Year 2	14	4			
u.	Year 3		7	4		
v.	Year 4	2		5	4	
w.	Year 5				2	1

Notes: Admission to the master's programme was discontinued in 2000 in accordance with the regulation of the Estonian Government.
Doctor became the academic degree in veterinary medicine and medicine. The table does not show the number of master's students in food technology.

Table 9.1.4. Postgraduate student composition (applied masters) (as of 1 September 2003)

		1999	**2000**	**2001**	**2002**	**2003**
n.	Total number of postgraduate students	13	12	10	15	13
o.	Male students	1	1	1		1
p.	Female students	12	11	9	15	12
q.	**Nationals:** – Estonians – Russians and Russian speakers					
r.	**Foreign students:** – EU countries – non-EU countries					
s.	Year 1	9	3	7	8	6
t.	Year 2	4	9	3	7	7
u.	Year 3					
v.	Year 4					
w.	Year 5					

Note: Transition to the six-year course of study brought about the applied master's programme as an intermediate stage. The state needed to train additional specialists in food hygiene.

9.2. Student admission

Anyone having a secondary education or a corresponding qualification can apply for a student place in veterinary training. Admission is based on the total sum of points derived from the results of the national exams in one's mother tongue (coefficient 0.1), biology (coefficient 0.2), and chemistry (coefficient 0.2), the average grade of the certificate of secondary education (coefficient 2), and professional interview (1–5 points).
The admission of students is carried out in accordance with the admission rules of the Estonian Agricultural University *(Appendix XI)* approved by the University Council on 05/12/2003. The admission rules are based on the University Act of the Republic of Estonia and the Statutes of the Estonian Agricultural University. Admission is based on

competition. A student applicant can apply for two government-funded student places. The preferred speciality is indicated in the application form, and it is allowed to change the order of preference only during the period of document submission. The University's Admissions Committee confirms the list of admitted students.
The current admissions system does not allow assessing the knowledge of student applicants. Applicants from magnet schools show better knowledge than those from ordinary schools.
The Ministry of Education and Research confirms the number of government-funded student places for the universities. The University Council confirms the number of government-funded student places and the number of fee-paying students. Estonian residents are eligible to apply for government-funded student places. The government-funded student places have to ensure the graduation of 25 students annually. Taking into account the drop-out rate, the University Council sets admission figures that are considerably higher than the number of government-funded places (about 15 additional places in recent years). The resources of the Faculty of Veterinary Medicine have allowed enrolling annually about 20 fee-paying students in addition to the state-funded places. From 1 May 2004 when Estonia joined the EU all the EU citizens can apply for student places on an equal footing.
The number of government-funded student places depends on the possible needs of the job market, the opinion of the Veterinary and Food Board, and the professional association of veterinary surgeons. On this basis the Estonian Agricultural University submits an application to the Ministry of Education and Research that makes the final decision concerning the number of government-funded student places.

Table 9.2.1. Intake of veterinary students

Year	**Number of applicants**	**Number admitted**	
		standard intake	**other entry mode (describe)**
1994	52	30	8
1995	40	25	8
1996	58	25	1
1997	71	25	6
1998	88	25	13
1999	184	25	16
2000	203	35	15
2001	182	25	17
2002	195	25	26
2003	104	25	20

Notes: standard intake – state-funded student places
Other entry mode – non-budgetary students or fee-paying students
The table does not show the students 'in reserve'.
To ensure the number of graduates according to annual block-grant contracts, the University enrols more students. The University Council approves the annual intake numbers.

Fee-paying student places are open to Estonian nationals who were not admitted on the basis of general competition and also foreign nationals if their knowledge conforms to

the set requirements. Admission to the fee-paying student places takes place on the basis of competition on the same conditions as admission to government-funded student places. A student applicant is regarded as accepted once the University has signed a contract with the student and the student has paid the tuition fee.
In the coming years the admission numbers will remain on the same level. In case English-language study groups are opened, the proportion of international students will increase. Depending on the renovation and restructuring of the Faculty, the planned intake number is about 50 students.
The knowledge of student applicants who wish to study veterinary medicine is often better than of those who apply for other specialities. Thus, the average grade of their secondary school certificate is 4.5 (5.0 being the maximum). Also, our students show better grades for the national exams in chemistry and biology than students of other faculties.
The admission number is based on the long-term demand for surgeons until 2010 (E. Pärnaste, 1996/97), which has been approved by the Veterinary and Food Board and the professional association. It is generally thought that the Republic of Estonia needs 25 new veterinary surgeons annually. The present system works and the Faculty are satisfied with it.
The year 2003 saw the beginning of the reconstruction of the rooms for the clinics and the Departments of Morphology and Theraphy. New buildings and reconstruction were modelled first and foremost after the example of the faculties in Finland and Sweden but also in other EU countries. The reconstruction of rooms ensures that space and equipment should be in accordance with the number of students. The optimum number of students allows to teach in small groups, and the teaching staff can focus more on the individual teaching.
The proportion of speciality-related subjects has been constantly increased in the curriculum. Also, the proportion of speciality-related elective subjects has increased. The six-year curriculum that was launched on 1 September 2002 provides an in-depth course in food hygiene in the final year and allows to specialize in the medicine of various animal species.
In recent years academic proficiency has shown a positive tendency. Despite this fact too many students have not passed exams, which is a precondition for proceeding to the next study year. There are relatively few students who are not talented enough or who lack motivation. The reason for failure is not that the teaching staff set requirements that cannot be met or that their pedagogical standards are poor. Usually academic failure has a material background. Many students work along with study or apply for academic leave in order to earn money for the continuation of their studies.
About 40–50 per cent of the students graduate during the normal period of study. About 4–5 per cent of the total number of students are removed from the list of students annually. Up to 20 per cent of the total number of veterinary students apply for academic leave. These students prolong the average duration of study for a few years.

9.3. Student flow

Table 9.3.1. Student flow. The present situation (five years later) for admission year N 4 (1998)

b.	Year 1	0
c.	Year 2	0

d.	Year 3	0
e.	Year 4	5
f.	Year 5	9
g.	Graduates	12
h.	Students who dropped out or were asked to leave	10
i.	Not in any identifiable year	2

Table 9.3.2. Number of graduates (undergraduate training) over the past five years

Year	Number of graduates
1999	10
2000	9
2001	21
2002	20
2003	22

Table 9.3.3. Average duration of studies. Class of 2003, students who attended the veterinary training course for 4, 5, 6, 7, 8, 9, 10, or more years

	Duration of attendance	Number
k.	4 years	0
l.	5 years	12
m.	6 years	1
n.	7 years	3
o.	8 years	2
p.	9 years	3
q.	10 –13 years	1
r.	more than 13 years	0
	Average duration of studies for graduates in 2003	6.3

A student is transferred to the next study year after he/she has completed the full curriculum for this study year. Occasionally some students have been transferred without passing exams in some general subjects. In that case a student must have passed all preliminary exams and exams in prerequisite subjects by the beginning of the next academic year. Academic proficiency is checked on August 31.

A student leaves the University at the request of the student, at the request of the University, or upon graduation. Dismissal is by written order of the Rector. If a dismissal takes place at the request of the student, the student has to submit an

application to the Rector, which is first endorsed by the Dean. The University can dismiss a student for the following reasons:

- non-attendance if a first-year student does not show up during the first two weeks of study,
- poor academic progress if
    - a student fails the same exam or preliminary exam three times
    - a student has earned less than 75 per cent of the credit points of the required curriculum by the deadline of checking academic proficiency
- unacceptable behaviour (forgery of documents, guilty verdict, contemptible conduct, or violation of good academic practice)
- legal incapacity
- death of the student
- a fee-paying student has failed to fulfil the contractual obligations

The University can dismiss a student at the proposal of a Dean.

2. COMMENTS

The number of national student admissions corresponds to the actual need of veterinary surgeons in Estonia. However, the Faculty overall capacity limits to 50 graduates.

3. SUGGESTIONS

The admission requirements have some drawbacks because of the uneven level of the student knowledge.

– The dropout rate is too high. It would require better motivated, and well-to-do students and the restoration of the prestige of veterinary medicine in society.
– The Faculty needs to pay more attention to academic proficiency and to find ways how most students could graduate within the nominal duration of studies.

CHAPTER 10:
ACADEMIC AND SUPPORT STAFF (as of 01/01/04)

1. FACTUAL INFORMATION

10.1. Personnel

Table 10.1.1. Personnel

	Budgetary posts (FTE)	**Non-budgetary posts (FTE)**	**Total (FTE)**
1. Academic staff			
a) Teaching staff	46.0		46.0
b) Research staff	7.5	1.0	8.5
c) Others (practising veterinary surgeons and researchers of other institutions)		1.75	1.75
d) Total academic staff	53.5	2.75	56.25
2. Support staff			
e) responsible for the care and treatment of animals	9.0		9.0
f) responsible for the preparation of practical and clinical teaching and engaged in research	21.0		21.0
g) responsible for administration, general services, maintenance, etc.	16.0		16.0
h) others (please specify)			

i) Total support staff	46.0		46.0
3. Total staff (d+i)	99.5	2.75	102.25

Table 10.1.2. Allocation of personnel to the various departments responsible for the teaching of veterinary students (as of 01/05/04)

Name of Department	**Academic staff**				**Others**	**Support staff**		
	Full Prof.	**Assoc. Prof.**	**Lecturer**	**Teaching Assistant**		**Technical/animal**		**Admin/ general**
						Teaching	**Resea-rch**	
Administration								16.0
Food Science	1.0	2.5	2.0	3.0		6.5		
Food Hygiene			1.0	2.0		1.0		
Morphology	1.0	2.0	2.0	1.0		3.0		
Infectious Diseases	1.0	4.0			3.0	4.5		
Therapy + clinics		3.0	3.0	14.3*	1.9	13.0*		
Animal Health	0.5	1.0	2.0	0.5	0.5	2.0		
Reproductive Biology					4.0			
Faculty of Agricultural Engineering			0.25			0.25		
Institute of Animal Science	0.6	2.5			0.4	3.5		
Faculty of Rural Engineering		0.15	0.1			0.25		
Faculty of Economics and Social Sciences			0.7	0.2		0.9		
Language Centre			0.5			0.5		
Faculty of Agronomy		0.4		0.4		0.8		
Total	**4.1**	**15.1**	**11.55**	**21.4**	**9.85**	**35.75**		**16.0**

*Teaching by Faculty-external structural units is calculated according to the FTE norms (0.1 FTE = 60 hrs). The same is true of the support staff. The table does not show the administration of other institutions. All in all 16 subjects are taught Faculty-externally.
The Appendix lists the names of employees and their positions according to the departments *(Appendix XII).*

Table 10.1.3. Personnel responsible for undergraduate teaching

A.	Number of budgetary and non-budgetary teaching staff involved in undergraduate teaching.	58.0
B.	Number of research staff involved in undergraduate teaching (see explanation to this table above).	4.0
C.	Total number of personnel responsible for undergraduate teaching (A+B)	62.0

10.2. Ratios

Ratio: teaching staff / undergraduate students

$$\frac{\text{number of teaching staff}}{\text{number of undergraduate students}} = \frac{62}{206} = \frac{1}{3.5}$$

Ratio: teaching staff / support staff

$$\frac{\text{number of teaching staff}}{\text{number of support staff}} = \frac{62}{51.75} = \frac{1}{0.9}$$

10.3. Principles of hiring the academic personnel

The University Council sets the qualification requirements for the academic personnel (teaching staff and researchers). The Faculty Council decides on the positions of the teaching staff and researchers and submits proposals to the Rector to this effect. The proposal proceeded from the teaching and research loads, funding, and the qualifications of the potential candidates. The Rector announces the vacancies in two national newspapers at least one month before the deadline for document submission. Applicants submit the required documents to the Academic Secretary of the Estonian Agricultural University. The Dean is responsible for setting up evaluation committees for the positions of Associate Professor and Senior Researcher. The Rector is responsible for setting up evaluation committees for the position of Full Professor. The Head of Department provides a written evaluation of the applicants for the positions of Lecturer and Teaching Assistant.

Elections take place not later than three months after the submission of the required documents. The University Council elects full professors. The Faculty Council elects the associate professors, lecturers and researchers. A candidate is considered elected if he / she receives over one half of the votes of the council members. Employment contracts are signed with successful applicants. Deans are elected by the Faculty Council on the basis of competition from among the full professors or associate professors. The Dean appoints the Rector approves Vice-Deans and his/her decision. The Faculty Council elects the Heads of Departments and Clinics after public competition. The Faculty statute sets the competition requirements.

The number of teaching positions is based on the teaching load that derives from the subjects taught by the Department. The job titles of the teaching staff depend on the qualifications. An applicant for the position of a full professor or an associate professor will have a doctorate and outstanding research results. The lecturers are required to

have a master's degree (MSc) in veterinary medicine. Teaching assistants are required to be graduates in veterinary medicine.
The positions of researchers are created depending on the need to implement domestic and international research projects.
The number of support staff depends on the needs of teaching and research. The ratio of the teaching staff to the support staff is 1:0.9.
In recent years it has been easier to recruit new teaching staff because a considerable number of doctoral students have completed their studies and the number of doctoral students has increased, too. Nor are there any problems in recruiting laboratory assistants.

The Faculty also hires outside workforce on a temporary basis for the teaching of those subjects where the Faculty (university) lacks the necessary teaching staff. Proposals to teach are made to well-known specialists and capable teachers. Their teaching must follow the curriculum, and the head of the corresponding department checks their work.
The subjects that are taught in full on a contractual basis include veterinary immunology and the organization and legislation of veterinary service. Radiology and ophtalmology are partly taught by outside teachingh staff. The same is true of supervision of practical training.
In recent years the academic staff has been able to attend an increasing number of conferences and seminars. It has been partly possible because of the PHARE project ES0105.02 Competence Centre of Veterinary Public Health Grant No ES0105.02.0001, Training of trainers in EU universities, and the Visby programme (funded by the Swedish Institute in 1998–2003) (for a detailed overview see Chapter 12). The teaching staff and researchers whose research projects are funded by the Ministry of Education and Research or the Estonian Science Foundation can also use the resources of these projects. The University Act and the Statutes of the Estonian Agricultural University provide that the academic staff has the right to a sabbatical semester during an election period in order to extend their knowledge at other educational and research establishments. However, until now shortage of funding and replacement personnel has not allowed to apply this principle.
The salaries of the teaching staff and researchers depend on their positions but cannot be less than the required minimum. The surgeons of the clinic receive the basic salary and additional pay depending on the services rendered. The pay depends on the number of patients, professionalism of the surgeon, and complexity of the rendered service. A surgeon-teacher who provides veterinary aid outside the clinic receives 40 per cent of the cost of the rendered service.
Because of good working conditions it is easy to find suitable personnel for the clinic. The teaching staff, researchers, and surgeons of the clinic are required to notify the employer about parallel work as a private practitioner or with another employer.
Among the academic staff of 52.15 people 39.8 or 76.3 per cent have a veterinary training.

2. COMMENTS

The ratio of the teaching staff to the number of students (1:3.5) is satisfactory. At the same time the number of the teaching staff could be higher. It would allow to use more lecturers for the teaching of large-scope subjects and to decrease the teaching load per lecturer, which would enable them to focus more on research. This would in turn increase research funding and create opportunities to hire additional staff. There are too

few full professors, which is caused by the fact that in connection with societal changes continuity was disrupted in the past decades. At that time young people did not see enough motivation to work at the Faculty because private business offered better opportunities for self-realization. In the coming years more people will apply for teaching positions because of the sufficient number of doctoral students studying both at home and abroad (in Finland and Sweden).
The problems of elderly lecturers include lack of skills in using information and demonstration technology and lack of knowledge of English. Young lecturers, however, have little teaching experience.

3. SUGGESTIONS

One has to find additional funding in order to hire more teaching and support staff.
More attention should be paid to inviting visiting lecturers first and foremost in those areas that are at present covered only by young lecturers.

CHAPTER 11:
CONTINUING EDUCATION

1. FACTUAL INFORMATION

11.1. Continuing education courses held at the establishment

Pursuant to the Veterinary Services Act both professional organizations and universities can provide continuing veterinary education. The Act provides that licensed veterinary surgeons have the obligation to refresh their knowledge. There are 752 licensed veterinary surgeons in Estonia.
In Estonia continuing education for veterinarians is provided by the Faculty of Veterinary Medicine and the professional association –Estonian Veterinary Association.
The continuing education at the Estonian Agricultural University are coordinated by the Open University, which was restructured and resumed work in accordance with the new statutes at the end of 2003.
Continuing education at the Faculty of Veterinary Medicine is organized in compliance with the Open University Statutes of the Estonian Agricultural University (www.eau.ee/4796). The curricula of continuing education courses is approved by the Faculty Council. The Department of Continuing Education serves as the coordinating structural of the Faculty of Veterinary Medicine. The Department of Continuing Education has close links with the Estonian Veterinary Association.
The Department of Continuing Education at the Faculty of Veterinary Medicine carries out continuing education and is responsible for the development of training programs. In 2000–2003 various courses were attended by 654 large animal practitioners and 170 small animal practitioners. Each year the Faculty and the Estonian Veterinary

Association hold an international conference on veterinary medicine with the participation of about 400 surgeons.
The Faculty of Veterinary Medicine of the Estonian Agricultural University serves as the centre of continuing education because of its academic personnel and excellent resources (rooms, diagnostic equipment, etc.). The Estonian Veterinary Association and government institutions order speakers for various training courses through the Department of Continuing Education. Open University of EAU is responsible for the financial and technical aspect of the training courses. In 2000–2003 the Estonian Veterinary Association organized seven continuing education courses with 56 per cent of the teaching staff of the Faculty of Veterinary Medicine acting as trainers.

Table 11.1.1: Courses organised by the establishment itself in the most recent year (2000-2002)

Title of course	Number of participants	Total number of hours of the course
Veterinary service and management in large animal practice	74	72
Swine pathological anatomy and necropsy	12	16
Cattle pathological anatomy and necropsy	28	16
Swine reproductive problems and diseases	26	16
Diagnosing of trichinellosis at the meat facilities	37	14
Reproductive diseases of cattle.	43	16
Clinical pathology discussion: hematology - renal clinical chemistry -	40	 8 8

Table 11.1.2: Courses organised by the establishment itself in the preceding year 2003

Title of course	Number of participants	Total number of hours of the course
Deep intracornual insemination	5	12
Food hygiene	131	166
Dentistry of small animal	80	8

Table 11.1.3: Courses organised at the establishment by outside bodies in the most recent year (2000-2002).

Title of course	Number of participants	Total number of hours of the course
Diseases of horses	12	16
Hand booking and management in condition of veterinary practice. Fiscal legislation	14	21
Parasitoids in sheep. Sheep nutrition.	8	7
Applying of pharmaceutical legislation in Estonia	314	6

11.2. Distance and online learning

Distance learning is not common in teaching veterinary students. The new computer room opened in 2004 improved the opportunities for web-based learning. Many lecturers use email for communication with students. The Internet is mainly used to solve problems that arise in the course of independent work.
In 2003 a WEB-CT course was organized for the teaching staff in order to develop more interactive teaching materials and to improve the knowledge of the teaching staff in the WEB-CT environment.

2. COMMENTS

Because the Faculty of Veterinary Medicine of the Estonian Agricultural University is closely linked with the Estonian Veterinary Association and implementation of continuing education, the Faculty has a major role in the development of training programmes. The continuing education of small animal practitioners has based on invited foreing lecturers and coordinated in cooperation with Estonian Small Animal Veterinary Associtation. Professional associations have detailed databases of active veterinarians and overview for educational needs of practising veterinarians. The centre of continuing education is and will remain the Faculty of Veterinary Medicine.
The development plan of the Faculty foresees two main trends in the system of continuing education:

a) basic continuing education that each veterinary surgeon has to undergo in the course of five years in accordance with his area of specialization (large animals, small animals, or food hygiene);

b) specialized continuing education that deals with narrow special problems and focuses flexibly on the changing everyday problems in veterinary medicine and food technology.

Practitioners of veterinary medicine will have an opportunity to participate on a systematic basis learning, because basic continuing education is combined with in-depth courses in the final year of study. Continuing education programmes are worked out taking into account the methodology of adult education. Continuing education programmes are taught both by the academic staff and practitioners in the field. The same principle is applied when engaging guest speakers in the continuing education of veterinary surgeons.

According to the Estonian Act of Veterinary Service, continuing education is compulsory for practising veterinary surgeons. Completion of continuing education is taken into consideration when renewing the licence.

Continuing education, if provided on a good level and on a systematic basis, will serve as an additional resource to the Faculty.

3. SUGGESTIONS

In the coming years the Estonian Veterinary Association and the Faculty of Veterinary Medicine will have a joint task of working out an accounting system and evaluation principles for continuing education.

In 2005 the professional association will convene a committee for continuing education in order to work out the quality and assessment system and to submit as a draft law. The Faculty must develop into the best centre for providing continuing education. Efforts should be made in cooperation with the Estonian Veterinary Association to explain to the practitioners the need for continuing education. Open Univesrity of EAU (Faculty board as well) should pay more attention to the pedagogical training of the teaching staff, focusing on the teaching of adults.

CHAPTER 12:
POSTGRADUATE EDUCATION

1. FACTUAL INFORMATION

According to the University Act of the Republic of Estonia, the higher education standard, and the academic rules of the Estonian Agricultural University, doctoral study is the highest form of academic study when a student acquires the knowledge and skills needed for independent research, development, or professional activity. The nominal duration of study in veterinary medicine is four years and the scope of the curriculum is up to 160 credit points (240 ECTS). In different years 2–10 doctoral students have been admitted to the doctoral programme. In recent years admission has decreased due to the smaller number of government-funded places. The Faculty Council assigns an academic supervisor(s) and confirms the plan of doctoral study. The supervisor's task is to advise the doctoral student on a regular basis and to keep an eye on the academic proficiency of the doctoral student. The supervisor is a lecturer or researcher holding a doctoral degree. The supervisor of a doctoral student is required to have peer-reviewed research publications, to participate in research projects, and to have previous experience in supervising students. It is also possible to assign a co-supervisor from some other university or research establishment. Doctoral students are evaluated at least once a year by the Faculty Council in accordance with the established rules. Evaluation means the assessment of the academic proficiency and research of a doctoral student. The doctoral programme ends with the public defence of the doctoral thesis. A graduate of the doctoral programme is awarded an academic degree – Doctor of Veterinary Science. The government-funded doctoral students are entitled to a benefit that is allocated in accordance with academic progress. In addition, doctoral students can apply for target financing from the Ministry of Education. If a doctoral student participates in his/her

supervisor's grant of the Estonian Science Foundation, the supervisor is allowed to pay him/her a research scholarship from the project. In 2000 a regulation of the Estonian Government terminated admission to the master's programme in veterinary medicine. Doctorate became the only academic degree in veterinary medicine. The applied master's programme in food hygiene was set up in 1999 because in connection with preparations for joining the EU the state needed more specialists in food hygiene. Also, it served as an intermediate stage in transition to the six-year study in veterinary medicine. The six-year study was launched for the first-year students enrolled in 2002, and it allows narrower specialization in the food hygiene track. The need for the applied master's programme will disappear after the arrival on the job market of the first veterinary surgeons who have completed the six-year study.

Table 1. Admission to the doctoral programme over the past five years

	1999	2000	2001	2002	2003
No. of admitted doctoral students	5	10	2	5	4

Table 2. Number of defended doctoral theses over the past five years

	1999	2000	2001	2002	2003
No. of defended doctoral thesis	1	1	1	1	2

Three doctoral thesis were defended during the first half of 2004.

12.1 Postgraduate clinical training (interns and residents)

The Faculty lacks a systematic post-diploma programme on the level of interns and residents. Nor are there programmes that are related to the European Specialization College.

12.2 Taught postgraduate courses

The Faculty has no systematic taught postgraduate courses.

12.3 Postgraduate research programs

The Faculty has an applied master's programme in food hygiene that admits graduates in veterinary medicine. Five students are admitted annually, and the duration of study is two years. The first year focuses on theoretical subjects, and the second year is intended for the writing and defending of a research project. Upon defence graduates are awarded the academic degree of an applied master.

Each doctoral student has an individual plan of doctoral study. The Faculty lacks a regular system of special courses for doctoral students because there are few doctoral students and it is impossible to form groups of doctoral students with similar interests

every year. Therefore doctoral students are eager to attend doctoral courses at other Estonian, Baltic, and Nordic Universities. The laws of the Republic of Estonia allow students of public universities to attend doctoral courses at other universities. In cooperation with the Baltic and Nordic countries doctoral students have been able in recent years to attend the courses held in the framework of NOVA-BOVA and NORFA. Our Faculty and teaching staff has also participated in organizing the NOVA-BOVA courses. The table below (Table 3.) shows the list of courses. The academic rules of the Estonian Agricultural University provides a system for transferring the credit points earned at foreign universities for doctoral courses to the credit-point system of this university.

In addition, doctoral students have been able to participate in the courses funded by the grant of the Estonian Agricultural University and the Centre of Reproduction Biology of the Swedish University of Agricultural Sciences "Improvement of reproductive efficiency in farm animals". The grant was received in order to promote cooperation between the agricultural scientists in the Baltic Sea area, and it was funded by the Swedish Institute in 1999–2001.

The cooperation project was extended in 2002–2003 under the title "Farm animal reproduction – reducing infectious diseases and preserving local genetic resources" with the participation of Latvian and Lithuanian agricultural universities. A number of symposia and seminars have been organized within the framework of these projects. Doctoral students have been able to attend and make presentations there. Table 3. provides a list of these symposia and courses. In addition, these projects have allowed to fund the participation of doctoral students in doctoral courses held at the Swedish University of Agricultural Sciences. The earned credit points are transferred to our system of doctoral study.

Table 12.3. Postgraduate research training programmes

(a) Professional Master Level (Food Hygiene) Indicate discipline and/or department.	Duration of training	Number enrolled	
		Full time	Part time
GENERAL STUDIES	2 years	5	
Using of Internet (Faculty of Economics and Social Science)			
English/German (Language Centre)			
SPECIALITY STUDIES			
Gneral food hygiene (Department of Food Hygiene)			
Food safety (Department of Food Hygiene)			
Legislation of Food (Department of Food Hygiene)			
Microbiology of Foodstaff (Department of Infectious diseases)			
General Course in Quality Management (Department of Food Hygiene)			
General Course in Food Sensoric Analysis			

(Department of Food Science)			
Technology and Hygiene of Dairy Products (Department of Food Hygiene)			
Technology of meat products and production Hygiene (Department of Food Science)			
Toxicology (Department of Therapy)			
Quality and Standards of Horticultural and Field Products (Faculty of Agronomy)			
Food toxicology (Department of Food Hygiene)			
Practical and pedagogical training			
Master thesis			
(b) PhD level			
NOVA - BOVA PhD courses: 1. Animal welfare measurements and automation in dairying 2. Bovine reproduction 3. Bovine and equine reproductive technology	 24. - 30.11.2003 12. – 17.11.2003 16 – 20.04.2001	 12 14 15	
Courses held by Swedish Institute grants: 1. Dairy production – today and tomorrow 2. Ultrasound in equine, bovine and porcine gynaecology 3. Feeding, metabolism and infections in farm animals with special reference to reproduction 4. Reproduction and infections 5. Reproductive failure in farm animals 6. Modern concepts of endocrine regulation and clinical use of hormones in domestic animals	 7. – 8.06.1999 31.05 – 02.06.1999 24. – 25.02.2000 27. – 28.04.2000 09. – 11.05.2001 14. – 15.06.2001	 20 14 51 31 20 20	

2. COMMENTS

A comparison of the annual intake of doctoral students and the number of completed doctoral thesis shows that unfortunately the number of defences is much smaller. Many doctoral students are unable to complete the thesis within the nominal period of study. There are two main reasons for this:

2. Many doctoral students work along with doctoral study because the scholarship is small and cannot be awarded to all the doctoral students.
3. Not all doctoral students have an active supervisor who would deal with the student properly and keep an eye over his/her academic progress.

In recent years the Faculty has focused its attention to the quality of supervision, and this problem is being dealt with.

In narrower specialities where there are no local supervisors a doctoral student can be sent to a foreign university either for the entire doctoral programme or for the completion of part of the programme. Also, active use is being made of the opportunities to consult foreign supervisors.

3. SUGGESTIONS

In the coming years doctoral schools need to be launched with the participation of other public universities in order to offer basic courses to doctoral students. Also, such a school should operate on the level of all the three Baltic countries. It would allow considerable economy of resources and improve the standard of doctoral study. The efficiency and quality of doctoral study is topical also for the other Estonian universities, and recently this problem has been discussed extensively. The Estonian Agricultural University has come to an agreement with the University of Tartu with regard to setting up joint doctoral schools. Also, the Estonian Ministry of Education and Research favours the establishment of joint doctoral schools. In 2003 BOVA universities started to create a network of veterinary education.. The first major aim is to organize regular doctoral courses on the basis of the better developed research areas represented at the faculties of veterinary medicine in the Baltic states.

CHAPTER 13:
RESEARCH

1. FACTUAL INFORMATION

Usually undergraduate students of veterinary medicine are not involved in experimental research. About five per cent of students from the third to the fifth study year participate dircetly in research annually. Over the past three years students have carried out research at the Department of Infectious Diseases (3–4 students annually at the Lab of Parasitology), the Department of Therapy (1–2 students annually in obstetrics and gynaecology) and the Department of Reproductive Biology (1–2 students annually). Participation is voluntary. The students'role consists in assistance in conducting experiments and the acquisition of working techniques and skills.

In a number of subjects (obstetrics and gynaecology, internal diseases) students have to write a written term paper or essay, which requires the reading of specialized literature and interpretation skills.

The possibility to apply for special scholarships motivates students to carry out research. The Faculty of Veterinary Medicine awards scholarships named after Esko Nurmi, Julius Tehver, Ferdinand Laja, and Johannes Kaarde. In order to be eligible, a student must show excellent academic proficiency and submit a research paper or development plan. In addition to the above-mentioned scholarships, a student can apply for an AS Interfarm scholarship for a research paper or term paper in obstetrics and gynaecology, AI, and the DeLaval AS scholarship for research in animal-production-related specialities.

Despite modest active participation in research a questionnaire revealed that over 70 per cent of students from the second to the fifth year of study are interested in conducting research, and 60–76 per cent of students consider this opportunity to be of great significance. Unfortunately, only 14 per cent of students have actively looked for such

opportunities. Over 80 per cent of students think that the teaching staff should inform them about their research problems and results. On the positive side only 14 of students claim that they are unaware about the research carried out at the Faculty. The main source of information is the teaching staff followed by scholarly and professional journals. 40–60 per cent of students would prefer to write a final research project instead of final exams, and about 40 per cent of students woul like to continue their studies at the doctoral programme if possible.

2. COMMENTS

The majority of the teaching staff find that the University should provide and it is possible to provide students with more opportunities to participate in research. Specific topic can be offered in anatomy, surgery, parasitology, pharmacology, infectious diseases, and reproductive biology. Also, the student questionnaire showed that few lecturers have actively offered possible research topics. Some departments mention difficulties with regard to research conditions and funding.

Nor have students been properly motivated to conduct research because it does not give any credit points. Cash prizes motivate students to take part in competitions for student research papers. Unfortunately, because of a high level of thoroughness and elaboration mostly master's and doctoral students are able to win prizes there.

The state of student research is closely linked with the general standard of research at the Faculty of Veterinary Medicine: the structural units with an outstanding record of research are also able to involve students.

3. SUGGESTIONS

The Faculty needs to increasingly emphasize the prestigiousness and significance of research. Research is the integral part of the University and the academic staff. The research findings of teams have to be made known and discussed regularly in research seminars. Doctoral students are required to present their research findings at least once a year starting with the second year of study. Students are recommended to attend the research seminars of doctoral students as the audience. Lecturers are recommended to introduce their research topic, problems, and findings within the framework of the courses they teach. Brighter students should be offered opportunities to begin research at an early stage in order to find suitable candidates for the doctoral programme.

The Faculty has plans to hold a contest of student research projects once a year. Selected papers will be presented at the students' research conference with subsequent publication in a separate collection of papers or in the professional journal of Estonian veterinary surgeons "Veterinary Review".

There are also plans to replace final exams with a final research project. It would require both extensive reading of the specialized literature and an experimental part. Students could start work on the project in the fourth year of study.

Appendix I

APPROVED by
Resolution no. 22 of 26/06/2003 of the
Council of the Estonian Agricultural University

Approved by the Council of the
Faculty of Veterinary Medicine
on 17/06/2003

Development Plan of the Faculty of Veterinary Medicine of the Estonian Agricultural University for 2003B2010

1. Introduction

The Faculty of Veterinary Medicine of the Estonian Agricultural University is the Estonian centre of academic teaching and research for veterinary medicine and food science. The teaching, development, and continuing education of the Faculty is firmly based on research.
The specialities taught by the Faculty of Veterinary Medicine fully cover the health of production animals and animal companions and various aspects of the production chain 'from the farm to the table'. Thus, the quality and safety of food and the health of humans and animals depend on the quality of teaching, research, and development of our Faculty.
The development plan of the Faculty of Veterinary Medicine is a document, which being based on visions of the future, describes the general prospects of teaching and research veterinary medicine and dairy and milk technology. The development plan serves as a basis for drawing up short-term specific action plans.

2. A brief overview of the history of the Faculty of Veterinary Medicine of the Estonian Agricultural University

Veterinary education has been provided in Tartu since 1848 when the Tartu Veterinary School was established with Prof. Peter Jessen as head. In 1873-1918 the school was called the Tartu Veterinary Institute. The Tartu Veterinary School had 112 graduates, and the Tartu Veterinary Institute had 1630 graduates. The first Estonian dairy studies were carried out at the Veterinary Institute in 1900-1907 under the supervision of Prof. K. Happich. Meat hygiene was first taught at the Tartu Veterinary School in the 1850s.
1919 saw the establishment of the Faculty of Veterinary Medicine at the University of Tartu on the basis of the Tartu Veterinary Institute. It was the first time when Estonian served as the medium of instruction. The Estonian Agricultural Academy was set up in 1951 on the basis of the Faculties of Agriculture, Forestry, and Veterinary Medicine. In 1960 the Department of Meat and Dairy Technology joined the Faculty of Veterinary Medicine. In 1994 The Estonian Research Institute of Animal Husbandry and Veterinary Science joined the Estonian Agricultural University. The Departments of Veterinary Medicine and Reproductive Biology of the previously mentioned institute were attached to the Faculty of Veterinary Medicine. The historical name Faculty of Veterinary Medicine was adopted once again in 1998.

3. Current situation

The Faculty of Veterinary Medicine consists of the Chairs of Morphology, Animal Health, Infectious Diseases, Therapy, and Food Hygiene, the Departments of Reproductive Biology, Continuing Education, the Animal Clinic, and the Pharmacy. The chairs are involved in veterinary undergraduate and postgraduate teaching; the Department of Reproductive Biology is responsible for postgraduate studies and serves as a centre for reproductive studies. The Department of Food Science is responsible for bachelor's, master's, and doctoral studies in meat and dairy technology. The Department of Continuing Education is responsible for the organization and coordination of the lifelong learning of veterinary surgeons. The Animal Clinic and the Pharmacy are used for the practical clinical training of students.
As of the academic year 2002/2003 the Faculty of Veterinary Medicine employed 25 full-time lecturers: 10 lecturers and researchers have part-time positions; 23 lecturers and researchers of other faculties are also involved in teaching. Altogether 58 staff members are involved in the teaching of the curriculum of veterinary medicine at the Faculty of Veterinary Medicine of the Estonian Agricultural University. Of them 32 lecturers hold a doctorate (55 per cent) and 16 have a master's degree (28 per cent). As of the academic year 2002/2003 the Department of Food Science has 7 full-time lecturers, of which 4 (57 per cent) hold a doctorate and 2 (29 per cent) have a master's degree.
In 2002 the Ministry of Education funded two research themes in the framework of target-financed research (altogether 1.215 m EEK); the Ministry of Agriculture funded three applied projects (totalling 960, 000 EEK); 17 lecturers and researchers held grants of the Estonian Science Foundation (1.371 m EEK). The Faculty participated in one FAO and one EU 5th framework project. Although one might evaluate the general standard of research at the Faculty as satisfactory, there are considerable differences between the subunits. In many research areas the number of researchers is insufficient for efficient research.

Inadequate funding of the research projects is a serious problem. In 2002 an international team evaluated the research standard at the Department of Food Science as satisfactory to unsatisfactory.
The Faculty of Veterinary Medicine is located in rather new premises. However, most rooms do not conform to the standards of the European Association of Establishments for Veterinary Education (EAEVE). In 2000-2001 witnessed the renovation of the rooms of the Chair of Food Hygiene and the Department of Food Science and an incinerator for carcasses and waste has built. The PHARE project ES0105.02 "Competence Centre for Veterinary Health" was launched, which allows to update teaching and research in food hygiene and sanitation, pathology and meat inspection, and epizootology and infectious diseases. Partnership relations with farms in the region of Tartu allow to compensate the small number of large-animal patients in the Animal Clinic. The Faculty has started active cooperation in the field of dairy farming, welfare and health of milking cows with the University of Helsinki in order to set up automatic data capture systems and to hold training courses. The curriculum of meat and dairy technology was accredited by the Estonian Higher Education Accreditation Centre in 2000.
The TAIEX team that visited the Faculty in 2002 pointed out in their report serious drawbacks concerning the buildings, equipment, and the number of teaching staff and their qualifications, especially in the teaching of clinical subjects. In order to rectify the situation, an action plan was drawn up for 2003–2004, the implementation of which will create the necessary conditions for the EAEVE accreditation of the curriculum of veterinary medicine of the Faculty of Veterinary Medicine at the Estonian Agricultural University in the autumn of 2004. The TAIEX expert that visited the Faculty in 2003 noted some progress in the material-technical base but pointed out drawbacks in the organization of practical clinical training: absence of a 'mobile clinic' (organization of clinical training for veterinary students through the veterinary service of the production animals in the region), weak links and cooperation in the teaching of various subjects, insufficient supervision of postgraduate students, and excessive teaching loads that do not allow to devote properly to research.

4. Mission

The mission of the Faculty of Veterinary Medicine of the Estonian Agricultural University is to ensure consistent and high-quality teaching in veterinary medicine and food science that will follow the contemporary trends in veterinary medicine and food science and will meet the demands of society, lifelong continuing education of veterinary surgeons and food technologists, and high-level research and development in veterinary medicne and food science, ensuring healthy and safe animal food and human health through animal health and welfare.

5. Vision

The Faculty of Veterinary Medicine at the Estonian Agricultural University will be an internationally recognized academic centre for veterinary education in the Baltic Sea region. International integration into cooperation networks in veterinary medicine and food science in order to carry out high-quality research

and research-based education and to ensure sustainable development of lifelong learning. Close links between the development of food science and the production of foodstuffs, the needs of food production, and animal and human health.

6. Goals

61. Accreditation of the curriculum of veterinary medicine of the Faculty of Veterinary Medicine of the Estonian Agricultural University by the European Association of Establishments for Veterinary Education (EAEVE) in the autumn of 2004.

6.2. To integrate the Faculty of Veterinary Medicine of the Estonian Agricultural University into the international network of higher schools and research centres of veterinary medicine and food science as a competitive internationally recognized centre for academic education and research in the Baltic Sea region.

6.3. To ensure the competitiveness of graduates on the international labour market through academic education that is based on contemporary science.

6.4. To set up system of lifelong learning for people in veterinary medicine and food science, ensuring them regular opportunities for in-service training on a contemporary scientific and practical basis.

6.5. To establish a steady link with society, to inform on a regular basis research findings in animal health and welfare, food science and hygiene, and biotechnology and to ensure their rapid implementation into practice.

6.6. To create the necessary working conditions and motivation for the successful work of the teaching staff and researchers and for the preparation of academic offspring through skilful management, a well-organized system of teaching and research, purposeful use of funding and internal competition.

6.7. Systematization, unification, and development of Estonian-language specialized terminology in cooperation with government bodies and professional associations.

7. Faculty of Veterinary Medicine and Society

7.1. In teaching and research the Faculty of Veterinary Medicine will follow the main principles of sustainable development, environmental protection, animal welfare and protection and will teach these principles and attitudes to students

7.2. The Faculty of Veterinary Medicine will participate in the scientific analysis and solution of the emerging problems in veterinary medicine and food science that are important for society.

7.3. The Faculty of Veterinary Medicine will step up cooperation with the Veterinary and Food Board and the Veterinary and Food Department of the Ministry of Agriculture as governmental veterinary institutions, alumni, professional associations, producers' associations, governmental bodies, and the Estonian Parliament.The Faculty will respond promptly and flexibly to the

societal needs for the training and continuing education of veterinary surgeons and food technologists and for the solving of scientific problems.

7.4. The Faculty will more than before seek media coverage of activities related to the Faculty of Veterinary Medicine, contributing to the appreciation of the professions of the veterinary surgeon and food technologist in society.

8. Teaching

8.1. Teaching at the Faculty of Veterinary Medicine is based on contemporary research.The aim of the teaching staff is to combine research and teaching in order to ensure high standards of teaching, research and development, and sustainable development.

8.2. Improvement of the learning environment:

8.2.1. To renovate the Faculty buildings by means of government funding in order to ensure contemporary working and learning conditions to the teaching staff and students.

8.2.2. To ensure intensive and economical use of teaching, seminar, a

8.2.3. To develop experimental farms for the purpose of teaching with the other faculties of the Estonian Agricultural University.

8.2.4. To develop contemporary experimental tehnological stations in food science for teaching and research and development.

8.2.5. To ensure regular updating of information technology and research equipment, supply with up-to-date teaching materials and availability of professional scientific information both for the teaching staff and students.

8.2.6. To create an IT infrastructure in the form of computer rooms and work stations that are equipped with hardware and software, to stimulate the requalification of the teaching staff in e-learning and the creation of computer-based teaching aids.

8.2.7. To motivate the teaching staff and researchers to write contemporary Estonian-language high-quality teaching materials and to ensure the availability of internationally acclaimed textbooks and professional journals in the library.

8.2.8. To establish a vivarium for contemporary interdisciplinary research and development.

8.2.9. To actively use various opportunities to support bright students (scholarships of professional associations, participation in student contests, student exchanges).

8.3. Further development of the curriculum:

8.3.1. To do away with overlap between the subjects by ensuring closer interdisciplinary cooperation.

8.3.2. To use cycle study and problem solving in the clinical subjects, which will ensure systematic knowledge to students.

8.3.3. To elaborate new principles for the organization of practical clinical training of students and to ensure the quality of outside

8.3.2. Taking into account the development trends in veterinary

medicine, to supplement the curriculum with programmes in molecular biology and biotechnology, avian medicine, laboratory and wild animal medicine, diagnostic imagery, medical equipment, and ecosystems.

8.3.3. To pay more attention to various aspects of the processing of non-animal food and its quality in the curriculum of veterinary medicine and dairy and meat technology.

8.3.4. To organize the teaching of human nutrition and human health in the master's programmes of dairy and meat technology and food hygiene in cooperation with the Medical Faculty of the University of Tartu.

8.3.5. To enable narrower specialization in bioveterinary science in cooperation with the Faculty of Biology and Geography at the University of Tartu.

8.3..6. To launch specialization in veterinary training.

8.3.7. To develop e-study in general subjects that will help to reduce teaching costs.

8.3.8. To launch English-medium undergraduate and doctoral programmes in order to ensure international competitiveness of veterinary medicine at the Faculty of Veterinary Medicine and to organize international courses in veterinary medicine and food science.

8.3.9. The Department of Food Science will work out a master's curriculum in plant food technology based on the bachelor's curriculum in field and garden produce.

8.3.12.To work out new marking systems for objective evaluation of student knowledge by using information technology.

8.3.13.To launch a quality assurance system in teaching based on regular feedback with graduates and employers.

8.4. Teaching staff:

8.4.1. To optimize the number of full-time staff of the Faculty of subjects and 1:8 in pre-clinical subjects).

8.4..2. To use more than before domestic and international visiting and food science.

8.4..3. In order to attract highly qualified teaching staff, more attention has to be paid to motivating pay policy and additional financial resources are needed to increase the salaries.

8.4.4. To work out a schedule of requalification for the teaching staff that will grant all the lecturers the opportunity to work at another university least once during a period of five years. To set up a special-purpose foundation to ensure the regular visits of the teaching staff to other universities.

8.4.5. To ensure regular in-service training for the teaching staff in pedagogy, psychology, communication, and presentation skills.

8.5. Postgraduate study:

8.5.1. To ensure quality and efficiency in postgraduate study. To create the necessary conditions for the completion of studies within the nominal period of study.

8.5.2. To restructure the admission rules for the doctoral programme in

order to place doctoral students to successful research projects.

8.5.3. To launch a doctoral school that will provide doctoral students with systematic knowledge of foundations of research, statistics, mathematical models, academic writing, academic ethics, pedagogy, and one's speciality.

8.5.4. If necessary, to find international supervisors for doctoral students in the framework of international cooperation projects.

8.5.5. To launch an English-medium doctoral programme in cooperation with the University of Tartu and Nordic and Baltic universities.

8.6. Continuing education:

8.6.1. The Faculty will create a system of regular in-service education of veterinary surgeons and food technologists in Estonia that will take into account both domestic responsibilities ensuing from Estonia's accession to the EU and the long-term trends in veterinary medicine and food science.

8.6.2. In order to coordinate the provision of continuing education, one needs to step up cooperation with the government veterinary and food institutions and professional associations.

8.6.3. To implement two main directions of the system of in-service training: a) basic in-service training that each veterinary surgeon undergo every five years depending one's specialization (production animals, small animals, or food hygiene); b) specialized in-service training where narrow specialized problems are dealt with and that focuses on the current problems in veterinary medicine and food technology.

8.6.4. To involve international lecturers in continuing education and to join the international network of continuing education.

8.6.5. To apply the possibililties of e-learning to continuing education for veterinary surgeons and food technologists.

9. Research and development

9.1. The main principle of planning research is the intertwinement of basic and applied research that allows to seek funding for various sources both in Estonia and the European Union.

9.2. In order to achieve good research results, it is necessary to optimize the use of financial and human resources, the infrasctucture, and the research equipment; the efforts of small research teams have to be concentrated on the complex solutions of larger problems.

9.3. In addition to developing the existing successful research trends (bovine reproduction and reproductive biotechnology, parasitology, and animal health), it is necessary to find ways to retain and develop research trends that are important for the Faculty as as a whole (veterinary microbiology and virology, normal and pathological morphology of domestic animals, physiology).

9.4. Taking into account the international development trends in veterinary medicine and the Estonian needs, more attention needs to be paid to studies in the health of high-production dairy herds, healthy and safe food, enviromental medicine, and biotechnology.

9.5. To promote more intensive and efficient interdisciplinary cooperation.
9.6. To involve postgraduate and undergraduate students in the work of research teams in order to provide them with the necessary work experience, competence in research planning and management, and high-standard academic supervision. To motivate doctoral students as prospective teaching staff and researchers.
9.7. To popularize and inform the public of research findings and to motivate such activities among the researchers and the teaching staff.
9.8. To establish a closer link between the scientists and the immediate consumers of research findings and to promote contractual cooperation in the application of the research findings.
9.9. To conttribute to the rapid use of applied research findings and the elaboration of new technologies by means of technological development centres and spin-off companies.
9.10. To support and to promote the search for extrabudgetary financial resources for research and development.

10. International and domestic relations and integration

10.1. Openness, the wish to carry out cooperation both within the faculty and the univerity, with other Estonian universities, and international partners is an important principle for the sustainable development of the Faculty.
10.2. The Faculty needs to be actively involved in the work of EAEVE. New ways and cooperation forms need to be found to step up one's activities in other international organizations and structures.
10.3. To step up cooperation with partner faculties in the Baltic Sea region in order to become part of the European veterinary system and to work out joint curricula that would provide the students with the best possible education.
10.4. To use as much as possible the existing mobility programmes of researchers and the teaching staff (with Swedish, Estonian, Latvian, and Lithuanian higher agricultural schools, Erasmus, PHARE etc.) and to find new possibilities in this area.
10.5. To create the required conditions for receiving international students, scientists, and visiting lecturers and for the patricipation of our scientists and lecturers in the research of international centres of excellence.
10.6. To actively develop cooperation with Estonian universities and research institutions, professional associations, and production enterprises.
10.7. To actively participate in the Tartu and Estonian research space by solving problems that are of common interest and developing infrastructural elements (vivaria, training centres, information systems).

11. Implementation of the development plan

The development plan is a strategic programmatic document that serves as a basis for the annual action plans of the Faculty of Veterinary Medicine. The development of teaching and research and development at the Faculty needs to be benchmarked against the internationally recognized standards.
The detailed action plan of each academic year is approved by the Council of the Faculty of Veterinary Medicine of the Estonian Agricultural University. The Dean is responsible for the implementation of the plan and makes a report to the council to this effect.

Appendix 2

APPROVED BY
Council of theEstonian Agricultural University
(Decision 35, 24/10/2002)

COORDINATED WITH
Expert Committee to Conform Veterinary Training at the Estonian Agricultural University to the EU standards
Riho Raave, Vice-Chairman
/signature/

Prof Stig Einarsson,
TAIEX Representative
/signature/

Estonian Veterinary Association
Paul. F. Mõtsküla, President
/signature/

ACTION PLAN FOR THE PREPARATION OF VETERINARY TRAINING AT THE ESTONIAN AGRICULTURAL UNIVERSITY FOR EAEVE EVALUATION IN 2004

Compiled by the committee:
T. Suuroja, Dean of the Faculty of Veterinary Medicine, Committee Chairman
T. Elken, MaintenanceDirector, Estonian Agricultural University
A. Aland, Department of Animal Health, Lecturer

III. **Ü. JAAKMA, DEPARTMENT OF REPRODUCTIVE BIOLOGY, HEAD**
M. Jalakas, Department of Therapy, Lecturer
P. Kalmus, Department of Continuing Education, Head
A. Kolk, Phare project, Counsellor
T. Saar, Department of Infectious Diseases, Head
A. Vuks, Animal Clinic, Head

Tartu 2002

ACTION PLAN
For the preparation of veterinary training for EAEVE evaluation in 2004

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ACTION PLAN
For the preparation of veterinary training for EAEVE evaluation in 2004

1. Objectives

1.1 General objective:
EU standard in veterinary and food inspection in Estonia

1.2 Aims:
- EU recognition of the qualifications and diplomas of Estonian veterianrians
- EAEVE Accreditation of the Faculty of Veterinary Medicine at the Estonian Agricultural University

2. Background and substantiation

The veterinary services of EU member countries are offered by the graduates of national veterinary training institutions that are accredited by EAEVE. Up to now the EU candate countries Hungary, Poland, Czechia, Romania, Slovenia, and Serbia have already had their veterinary training institutions evaluated, and the remaining countries, including Latvia and Lithaunia are applying for it.

The Faculty of Veterinary Medicine at the Estonian Agricultural University is one of the 25 oldest veterinary training universities of the world. At present the student population of the faculty includes 215 Estonian and 41 international students, 11 master's, and 25 doctoral students. Among the teaching staff 55 per cent have a doctoral degree or an academic degree equal to a doctoral degree.

The faculty is housed in relatively new facilities that unfortunately do not meet the EU standards. In 2001- 2001 self-funding and a bank loan (7 m EEK) enabled us to renovate the facilities of the Chair of Food Hygiene, the Institutes of Meat Technology and Dairy Technology, and to build an incinerator for carcasses and waste. We launched the Phare project ES0105.02 "Competence Centre of Veterinary Public Health" with a budget of 45.7 m EEK, which allows to restructure teaching and research in food hygiene and sanitation, pathology and meat inspection, and epizootic and infectious in the following areas:

- curriculum and materials;

- continuing education of teaching staff at EU universities;
- continuing education of veterinarians;
- equipment;
- computer hardware and software.

Despite this, the TAIEX experts who visited the faculty in March 2002 found serious deficiencies concerning the facilities and equipment, the number of teaching staff and their qualification, especially with regard to the teaching of clinical subjects. There is a danger that the diplomas of Estonian veterinarians may be deleted from the draft supplement of the Estonian Treaty of Accession, which allows recognition of the qualifications and free movement of regulated professions on the EU job market.

The action plan for 2003-2004 was drawn up to rectify the mentioned deficiencies and to make veterinary training conform to the internationally recognized level. The plan includes the following constituent parts:

1) Plan to improve the learning environment:
    a) investment plan to make the buildings of the Faculty of Veterinary Medicine conform to the EAEVE standards in 2002-2004;
    b) investment plan for the equipment of the teaching complex of the Faculty of Veterinary Medicine in compliance with the EAEVE standards in 2002-2004;
    c) acquisition plan of up-to-date learning resources.
2) Plan to raise the qualifications of the teaching staff, to ensure their optimum number, including deadlines and estimated cost.
3) Plan to raise the standard of continuing veterinary education.
4) Plan to establish Estonian and international cooperation networks in veterinary education.
5) Plan to draw up a long-term development plan of veterinary training.

3. Action plan

3.1. Plan to improve the learning environment

3.1.1. *Investment plan for the facilities of the Faculty of Veterinary Medicine to conform to the EAEVE standards in 2002-2004*

Some general principles for preparing for the evaluation:

- The clinics, the complex of pathoanatomical post-mortem examinations, and the anatomical dissection rooms are of crucial importance for the teaching of veterinary medicine as a practical and clinical speciality. The building of these complexes should be regarded as a top priority, and they must conform to the EAEVE standards;
- The new rooms have to be built and the existing rooms have to be renovated without interrupting teaching and the work of the animal clinic;
- The rooms must be equipped in compliance with the requirements.

Proceeding from the above-mentioned principles and the condition of the rooms of the teaching complex of the Faculty of Veterinary Medicine (Appendix 1) and following the state investment programme of the Government of Estonia for 2003-2006 (Decree no. 630/k of 25 September 2002, Appendix 2), the construction work will be carried out in the following order of importance:

1. Renovation of the pathoanatomical complex.
   The renovation work will be carried out in accordance with the existing preliminary design. Two new rooms will be built: the room for teaching pathoanatomy (33 m^2) and the preparations room (17 m^2). The existing rooms will be renovated, including the sanitation units. The building is scheduled for the second and third quarters of 2003. The purchase of the equipment for the pathoanatomical complex will be funded from the projects Phare I and Phare II.

2. Large animals clinic (new building, 900 m^2).
   The preliminary design is available, and it takes into account the recommendations of specialists of the Faculty of Veterinary Medicine at the University of Helsinki and the Norwegian School of Veterinary Science. The large animals clinic is the first priority because it serves as a prerequisite for the building of the complex of clinics. The building of the large animals clinic is scheduled for the third quarter of 2003.

3. Large and small animals clinic (refurbishment of the existing rooms and the building of the addition, all in all 2,700 m^2).
   The preliminary design is available and it takes into account the recommendations of specialists of the Faculty of Veterinary Medicined at the University of Helsinki and the Norwegian School of Veterinary Science. Technical design work is scheduled for the first and second quarters of 2003; the construction will take place from the fourth quarter of 2003 to the second quarter of 2004. The purchase of the equipment will be funded from the projects Phare I and II for the second and third quarters of 2004.

4. Anatomical complex (refurbishment of the existing rooms, 421 m^2).
   Work on the preliminary design is in progress and will be completed in the fourth quarter of 2002. The technical design will be drawn up during the second quarter of 2003; the construction will be carried out in the third quarter of 2003. The purchase of the equipment will be funded from Phare I and II during the fourth quarter of 2003.

5. Other rooms scheduled for renovation (4,080 m^2). The rooms will be renovated from the fourth quarter of 2003 to the second quarter of 2004.

The priority new buildings and renovation work, listed in 1-4, can be carried out concurrently, independently of the other buildings. The construction work will not disturb teaching significantly. Appendix 3 provides the time schedule for the designing of the pathoanatomical and anatomical complex, the large animals clinic, and the clinical complex. Table 1 presents the financing schedule for the construction work. Table 2 shows the cost of equipment and the supplying schedule.

Table 1. Financing of the renovation of the Faculty of Veterinary Medicine of the Estonian Agricultural University until 2004 (application RIP-I)

	Completed until 2003		2003				2004				
	Self-financed	**State budget**	**I quarter**	**II quarter**	**III quarter**	**IV quarter**	**I quarter**	**II quarter**	**III quarter**	**IV quarter**	**Total**
Kreutzwaldi 62											
Preliminary design		0.1									**0.1**
Design preparation		0.33									**0.33**
Designing			2.0	3.3							**5.3**
Renovation and construction				1.0	19.0	22.52	12.0	8.0	2.65		**65.17**
KREUTZWALDI 62 TOTAL	**0.0**	**0.43**	**2.0**	**4.3**	**19.0**	**22.52**	**12.0**	**8.0**	**2.65**	**0.0**	**70.90**
Kreutzwaldi 58											
Design preparation				0.1							**0.1**
Designing				0.2	0.4						**0.6**
Renovation and construction	7.2				1.0	2.8	2.5				**13.5**
KREUTZWALDI 58 TOTAL	**7.2**	**0.0**	**0.0**	**0.3**	**1.4**	**2.8**	**2.5**	**0.0**	**0.0**	**0.0**	**14.2**
Eerika Animal House											
Designing							0.4				**0.4**
Construction								3.2			**3.2**
EERIKA TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.4**	**3.2**	**0.0**	**0.0**	**3.6**
FINANCES TOTAL	**7.2**	**0.43**	**2.0**	**4.6**	**20.4**	**25.32**	**14.9**	**11.2**	**2.65**	**0.0**	**88.70**

Table 2. Schedule of completion of buildings and purchase of equipment for the Faculty of Veterinary Medicine at the Estonian Agricultural University in 2002-2004

No.	Building	Completion date	Purchase date of equipment	Funding source
1	Pathoanatomical complex	2003, III quarter	2003, III and IV quarters	Phare I and II
2	Large and Small Animals Clinics	2004, II quarter	2004, II andIII quarters	Phare I and II
3	Anatomical complex	2003, IV quarter	2003, IV quarter	Phare I and II
4	Other renovated rooms	2003 IV quarter to 2004 II quarter	2004, II and III quarters	Phare I and II

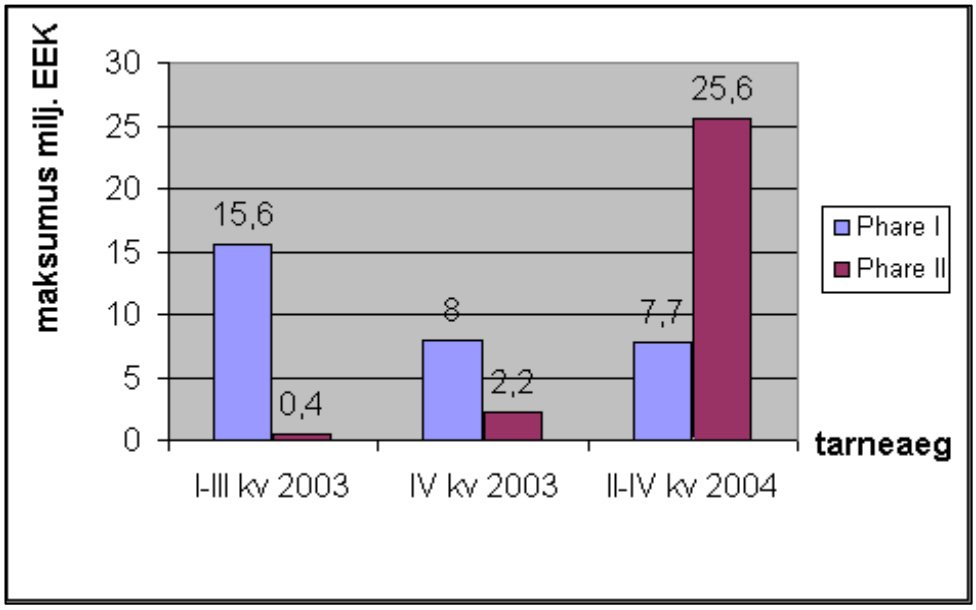
3.1.2. Investment plan for equipment of the teaching complex of the Faculty of Veterinary Medicine in compliance with EAEVE standards in 2002-2004

The Estonian Agricultural University obtains the equipment that corresponds to the EAEVE standards with the help of project Phare I ES 010205.02 "Competence Centre of Veterinary Public Health" (Appendix 4) and the Phare II project proposal " Animal Welfare and the Development of Clinical Veterinary Medicine in Estonia" (Appendix 5).

Phare I foresees the purchase of equipment, computer harware and software for 31.3 m EEK, Phare II for 28.2 m EEK, totalling 59.5 million EEK (Table 3, Figure 1).

Tabel 3. Investments according to Phare projects in the equipment, computer hardware and software for the Faculty of Veterinary Medicine at the Estonian Agricultural University (in millions of EEK)

Buildings and renovated spaces	**Completion date**	**Phare 1**	**Phare 2**	**Total**
Anatomy and pathology	2003, IV quarter; 2004, III quarter	12. 9	1.9	14.8
Clinics	2004, II-IV quarters	0.9	13.3	14.2
Other	2003-2004	17.5	13.0	30.5
TOTAL FOR THE FACULTY		**31.3**	**28.2**	**59.5**



Maksumus milj. EEK - Cost mil EEK

Kv - Qr.

Tarneaeg - Supply date

Figure 1. Phare investments in equipment, lab furniture, computer hardware and software (in millions of EEK) and their purchase in 2003-2004.

The priorities in the ordering of equipment, computer hardware and software are set by taking into account the following circumstances:

- The equipment, computer hardware and software, and furniture will be ordered and supplied as the rooms are completed.
- The equipment, computer hardware and software that will be needed for teaching will be ordered and supplied first.
- Expensive equipment must be used actively.
- Such equipment will be purchased that is not available at other research institutions in Tartu. Cooperation with other institutions of higher education and research will be sought for its use.

Appendix 6 provides a list of the equipment, computer hardware and software to be purchased with the funding of the Phare project ES0105.02 Competence Centre of Veterinary Public Health.

3.1.3. Plan for the acquisition of up-to-date learning resources

The standard of teaching depends to a considerable degree on the textbooks and research literature, handbooks, video materials, and computer-based interactive exercises that are available to students and the teaching staff. Therefore, the funding foreseen by both Phare I and Phare II will be used to acquire up-to-date learning resources for the Faculty of Veterinary Medicine at the Estonian Agricultural University.

1) The financial resources of the Estonian Agricultural University will be used:
    - To purchase textbooks and manuals of veterinary medicine for the library of the Estonian Agricultural University.
      In 2002 a sum of 90, 000 EEK was allocated to this end; 26 English-language textbooks and manuals were purchased in accordance with the list drawn up by the chairs (Appendix 7); in 2003-2004 we will spend 100,000 – 150,000 EEK on textbooks and manuals every year.
    - To buy scholarly journals and databases of veterinary medicine and food hygiene for the library of the Estonian Agricultural University.
      In 2003 the library will subscribe to 14 scholarly and practical journals of veterinary medicine and food hygiene (Appendix 8), of which the full texts of 5 journals will be available online as well. The cost of the subscriptions amounts to 79,000 EEK. In 2004 the subscriptions will be renewed at least for the same amount.
      In 2002 the following databases were available at the library: EBSCO (includes 10 databases, e.g. MEDLINE, AGRIS, AGRICOLA). Cambridge University Press and SYNERGY were available for testing. In 2003 ScienceDirect (all the journals as full texts), the online version of Current Contents, and Springer LINK will be added.
2. The PHARE project foresees:
    - The writing and publication of Estonian-language handbooks and textbooks in the framework of the project Phare I (ES01005.02 “Competence Centre of Veterinary Public Health”). The budget for 2003-2004 forsees 1.56 milllion EEK for this purpose. Applications have

been submitted for the writing of 14 publications; the contracts will be signed at the beginning of 2003 (Appendix 9).

- The writing of Estonian-language textbooks and handbooks in the framework of the project Phare II ("Promotion of animal health and clinical veterinary medicine in Estonia"). The project proposal will be submitted to the European Commission for approval in the coming weeks. The project proposal foresees the allocation of 1.56 million EEKS for this purpose.
- The writing and publication of teaching materials (computer-based interactive courses) by the experts of the project Phare I in food hygiene, sanitation, pathology and meat inspection, epizootic and infectious diseases (the cost will be covered from the total budget of the experts amounting to 4.23 million EEK).
- The writing and publication of teaching materials (computer-based interactive courses) by the experts of the project Phare II in clinical and laboratory diagnostics, internal diseases, animal welfare and health monitoring, veterinary surgery, and radiology. The total budget of the experts amounts to 6.73 million EEK.
- The purchase of textbooks, handbooks, CD-ROMs, and other teaching materials with the funding provided by Phare I in accordance with the recommendations of the experts and chairs:
  The budget for 2003-2004 will provide 180,000 EEK; as of 01/10/2002 applications for 42 titles have been submitted (83,000 EEK).
- The purchase of textbooks and handbooks, CD-ROMs, and other teaching materials with the funding provided by the proposal of Phare II as recommended by the experts and chairs:
  The budget for 2004-2005 foresees about 90,000 EEK for this purpose.

3.2. Plan to raise the qualifications of the teaching staff, to ensure the optimum number of teaching staff, and its estimated cost.

1) The present situation and the future needs:

- In the academic year 2002/2003 the Faculty of Veterinary Medicine employs 25 lecturers (22 full-time positions); 10 lecturers and researchers are employed on an hourly basis. In addition, 23 lecturers and researchers of other faculties teach the students of the Faculty of Veterinary Medicine. Altogether 58 lecturers are involved in the teaching of the curriculum of veterinary medicine at the Faculty of Veterinary Medicine at the Estonian Agricultural University (Appendix 10).
- Of the teaching staff 32 lecturers have a doctoral degree or its equivalent (55 per cent); 16 lecturers have a master's degree (28 per cent). The average age of the teaching staff is 49 years.
- The teaching load of full-time teaching staff at the Faculty of Veterinary Medicine is as follows: professors on the average 390, associate professors 374, lecturers 378, and teaching assistants 515 hours. However, in the case of different subjects the teaching loads vary considerably and need to be adjusted in the coming years (Tables 4 and 5).

- In 2002 the average teaching load of the teaching staff of the Faculty of Veterinary Medicine was 1/3 higher than at the University of Tartu (Figure 2). The decision of the Estonian Parliament of 12 June 2002, which approves the University Act and the law that amends the other related legal acts, provides that since 2002 veterinary training will last for six years. Therefore, the scope of the curriculum will increase from 200 credit points to 240 credit points. The teaching loads will increase accordingly, too.
- Because of the intensive six-year curriculum of the Faculty of Veterinary Medicine, the dropout rate is rather high. Therefore, the annual intake should be at least 40 students in order to ensure the preparation of 25 state-budgeted graduates annually. This circumstance will further increase the teaching load of the staff.
- EAEVE standards require that a curriculum of veterinary medicine should be taught by a minimum staff of 70-80 lecturers (including part-time teaching staff). The required teaching staff / student ration is 1:5 – 1:8.

Table 4. Anticipated need for teaching staff in 2004

Subject	**No of teaching posts in 2002**	**Teaching load (hours)**	**Average teaching load per lecturer (hours)**	**Anticipated number of full-time teaching staff in 2004**	**Teaching load per lecturer on the basis of the anticipated number**
Anatomy	2.0	904	452	3.0	301
Histology and morphology	1.0	408	408	1.5	272
Physiology	1.5	831	554	2.5	332
Microbiology	1.0	392	392	1.5	261
Virology and immunology	1.0	456	456	1.5	304
Epizootic diseases and organization of veterinary service	1.5	650	430	2.0	325
Parasitology and invasive diseases	1.5	324	216	1.5	216
Animal health	1.5	695	463	2.5	278
Gynecology, obstetrics, and reproduction	2.5	815	326	2.5	326
Surgery and orthopaedics	2.0	1064	532	3.5	304
Internal diseases and diagnostics	2.5	922	369	3.0	307
Pharmacology and toxicology	1.0	392	392	1.5	261
Food hygiene	1.5	760	506	2.5	304
Pathological	1.5	650	433	2.0	325

anatomy and forensic veterinary medicine					
TOTAL	22	9263	421	31	298

- In 2004 the faculty will need nine additional teaching positions to optimize the teaching loads. The retired lecturers will be replaced, and the additional teaching positions will be filled by graduates of the doctoral programme.

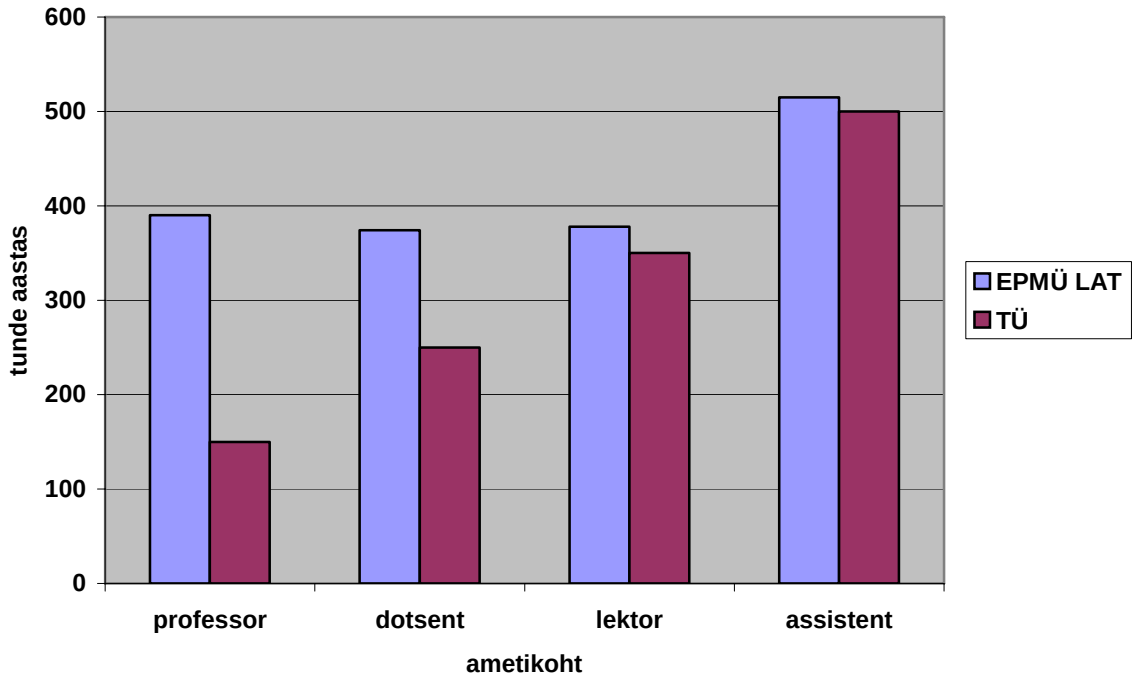
Table 5. Teaching load of the teaching staff of the Faculty of Veterinary Medicine at the Estonian Agricultural University in the academic year 2002/2003

Lecturer	Position	Subjects taught	Lectures (hours)	Practical work (hours)	Total (hours)
1	2	3	4	5	6
E. ERNITS	Associate Professor	anatomy	76	352	428
E. Nahkur	Lecturer	anatomy		476	476
T. Suuroja	Professor, Dean	histology, morphology	68	340	408
Ü. Jaakma	0.5 Professor	physiology	100	380	480
T. Tiirats	Lecturer	pathological physiology	27	324	351
B. Aasmäe	Lecturer	pharmacology, toxicology	122	270	392
J. Praks	Professor emeritus	animal health, aetiology, preventive veterinary medicine	90	260	350
A. Aland	Associate Professor, Head of Department	animal welfare	45	300	345
R.Lindjärv	Associate Professor	microbiology	72	320	392
T. Saar	Associate Professor, Head of Department	virology, immunology	48	264	312
Outside lecturer		virology, immunology	24	120	144
J. Alaots	Associate Professor	epizootic diseases,	144	312	456

		veterinary genetics			
Outside lecturer		epizootic diseases, veterinary genetics	36	158	194
T. Järvis	Professor	parasitology and invasive diseases	54	108	162
E. Mägi	0.5 Lecturer	Parasitology and invasive diseases; foundations of research	16	146	162
P. Kalmus	Lecturer	Internal diseases	40	180	220
K. Kask	Professor, Chairman of the Methods Committee	obstetrics, reproduction, internal diseases	8 18	158 240	166 258
A. Vuks	0.5 teaching assistant, Head of Clinic	Clinical diagnostics	50	200	250
M. Valdman	0.5 teaching assistant	internal diseases	38	156	194
M. Aidnik	Professor, Head of Department	insemination, obstetrics, reproduction	42	283	325
Outside lecturer		insemination, reproduction	6	86	92
M. Jalakas	Lecturer	obstetrics, reproduction	64	168	232
V.Andrianov	Associate Professor	Operative and special surgery, radiology	40	405	445
Outside lecturer		surgery, radiology	16	102	118
I.Nikulnikova	Lecturer	General and special surgery, radiology	80	421	501
M. Roasto	Lecturer, Head of Department	Food hygiene	78	370	448
T. Tamme	0.5 teaching assistant	Food hygiene		312	312
E. Lepp	Associate Professor	Pathological	64	312	376

		anatomy			
T. Järveots	0.5 teaching assistant	Pathological anatomy	16	258	274
TOTAL	**22**		**1482**	**7781**	**9263**

Average teaching load per full-time lecturer, without taking into account extramural practical work, examinations, preliminary examinations, marking of term papers, supervision of master's and doctoral theses: 421 hours.



tunde aastas - Teaching hours per year
Professor
Dotsent - Associate Professor
Ametikoht - Teaching position
Lektor - Lecturer
Assistent - Teaching assistant
EPMÜ LAT - Estonian Agricultural University
TÜ - University of Tartu

Figure 2. Average teaching load at the Faculty of Veterinary Medicine of the Estonian Agricultural University and the University of Tartu.

2) Salaries of teaching staff:

- The current salaries at the Faculty of Veterinary Medicine are rather low and do not motivate the teaching staff to fully commit themselves to teaching and research (Table 6).
- Salaries will increase first and foremost on the basis of the additional funds that derive from the adherence to the cost coefficient of veterinary training (about 1.4 million EEK). Because the scheduled salary increase requires additional funding in amounting to 2,592,621 EEK in 2003 and to 3,577,851 EEK in 2004, then direct additional government funding is needed in 2003 to an extent of 1.5 and in 2004 to an extent of 2.0 million EEK. Veterinary training is a specific speciality, where lectures cannot be delivered to large groups of students. The practical work in clinical subjects needs to be conducted in small groups of 6-8 students. Therefore, in future it is necessary raise the coefficient of veterinary training from 4.2 to 5.0.

Table 6. Number of teaching staff, salaries, and total expenditure on salaries in 2002- 2004

Year/ teaching staff	**Number**	**Monthly salary**	**Total salary**	**Salary+social security, health and unemployment insurance payments**
2002				
Teaching assistants	2	4,964	119,136	159,046
Lecturers	8.5	5,070	517,140	690,382
Associate Professors	8	6,486	622,656	831,246
Professors	3.5	8,415	354,430	471,829
TOTAL	**22**	**24,935**	**1,612,362**	**2,152,503**
2003				
Teaching assistants	3	8,000	288,000	384,480
Lecturers	9	9,200	993,600	1,326,456
Associate Professors	9	12,100	1,306,800	1,744,578
Professors	5	16,100	966,000	1,289,610
TOTAL	**26**	**45,400**	**3,554,400**	**4,745,124**
			Compared to	**+ 2,592,621**

			2002	
2004				
Teaching assistants	4	8,000	384,000	512,640
Lecturers	10	9,200	1,104,000	1,473,840
Associate Professors	10	12,100	1,452,000	1,938,420
Professors	7	16,100	1,352,400	1,805,454
TOTAL	**31**	**45,400**	**4,292,400**	**5,730,354**
			Compared to 2002	**+3,577,851**

Note: the salary level is based on the preliminary agreement for 2003 between the Ministry of Education and the Trade Union Association of Estonian Higher Schools UNIVERSITAS concerning the foundations for salary grading (of 26 April 2002).

3) current situation and prospects of the doctoral programme:

- As of 01/10/2002 there are 25 doctoral students at the Faculty of Veterinary Medicine, of whom 19 are state-budgeted and 6 are non-budgeted students (without paying the tuition fee) (Table 7). Two state-budgeted doctoral students, financed by the Ministry of Esducation, will complete the full course of doctoral studies at the Faculty of Veterinary Medicine at the University of Helsinki. Fifteen doctoral students are employed by the Faculty of Medicine as lecturers, teaching assistants, or veterinarians.
- For 2003 and 2004 the Faculty has applied for four new places for doctoral studies each year.
- Since 01/09/2002 all the students admitted to the doctoral programme have also external supervisors.
- All in all, in 2003-2004 the Faculty will need 4.9 million EEK for the training of the teaching staff reserve (the existing state-budgeted doctoral students); 2.7 million EEK will be needed in 2003 and 2.2 million EEK in 2004. The Swedish Agricultural and Forestry Academy will contribute 0.5 million SEK towards the training of one non-budgeted doctoral student in Sweden.
- Fifteen defences of doctoral dissertations are scheduled for the academic years 2002/2003 – 2004/2005. New PhDs will replace five members of the teaching staff who will reach the retirement age, and they will fill also nine additional teaching positions.

Table 7. Doctoral students of the Faculty of Veterinary Medicine at the Estonian Agricultural Academy in 2002-2006 and the cost of their training in 2003-2004

No.	Name of the doctoral student	Training period	Speciality	Scheduled to defend	Cost of training 2003-2004 (EEK)	Source of funding
1.	Aasmäe, Birgit	1999-2003	pharmacology	2003/2004	158, 760	budgeted
2.	Aland, Andres	1998-2002	animal health	2003	-	non-budgeted
3.	Aunapuu, Marina	1999-2003	histology	2003/2004	158, 760	budgeted
4.	Andrianov, Vladimir	1999-2003	surgery	2003/2004	158, 760	budgeted
5.	Hallap, Triin	2000-2004	Reproductive biotechnology	2004	~ 317 ,520	Non-bud, Swedish scholarship**
6.	Hõim, Rainer	2000-2004	surgery	2004/2005	317, 520	budgeted
7.	Järveots, Tõnu	2001-2005	Pathological anatomy	2005/2006	317, 520	budgeted
8.	Kavak, Ants	2000-2004	Artificial semination of horses	2004/2005	317, 520	budgeted
9.	Janson, Kadri	2001-2005	Internal diseases	2005/2006	317, 520	budgeted
10.	Kääramees, Kadri	2000-2004	Internal diseases	2005/2006	317, 520	budgeted
11.	Lehtla, Andžela	2000-2004	surgery	2004/2005	-	non-budgeted
12.	Põdersoo, Diivi	2000-2004	virology	2004/2005	317, 520	budgeted
13.	Roasto, Mati	2000-2004	food hygiene	2004/2005	317 520	budgeted
14.	Samarütel, Jaak	1999-2003	Bovine metabolism	2004	-	Non-budgeted
15.	Sjatkovskaja, Olga	1999-2003	microbiology	2004	-	Non-budgeted
16.	Valdmann, Merle	2000-2004	histology	2004/2005	317, 520	budgeted
17.	Villemson, Merit	2000-2004	Internal diseases	2004/2005	317, 520	budgeted
18.	Viltrop, Arvo	1996-2001	Epizootic diseases	2002	-	budgeted
19.	Viitmaa, Ranno	2002-2006	radiology	2006/2007	-	Non-budgeted
20.	Praakle, Kristi	2001-2005	Food hygiene	2005	170, 000*	budgeted, Univ of Helsinki
21.	Orro, Toomas	2001-2005	Internal diseases	2005	170, 000*	budgeted, Univ of Helsinki
22.	Tamme, Terje	2002-2006	Veterinary hygiene	2006/2007	300, 000	budgeted
23.	Nahkur, Esta-Laine	2002-2006	anatomy	2006/2007	300, 000	budgeted
24.	Tralman, Garri	2002-2006	surgery	2006/2007	300, 000	budgeted
25.	Neeme, Talvi	2002-2006	surgery	2006/2007	-	Non-budgeted

* The amount paid by Estonia is negotiated on an annual basis.

** Scholarship of the Swedish Agricultural and Forestry Academy

Cost of training the state-budgeted teaching staff reserve

2003: 2,683,880 EEK
2004: 2,207,600 EEK
TOTAL: 4,891,480 EEK

4) Raising the qualifications of the teaching staff:

In order to raise the qualifications of the teaching staff, the programme Phare I foresees short-term (1-3 months) continuing education at the accredited universities of the European Union between November 2002 and April 2004. For this purpose the programme Phare I earmarks 1.878 million EEK. About 52 members of the teaching staff will be able to use this opportunity (Appendix 11).

3.3. Plan to improve the level of continuing veterinary education

1) In 2003, 2004, and 2005 the Phare projects forsee continuing education for Estonian veterinary control officers, border-guard service, and authorized veterinarians, altogether 30 courses. For this purpose Phare I foresees 6.73 million EEK and Phare II also 6.73 million EEK (Appendices 4 and 5).
2) Since 1 September 2002 the Department of Continuing Education is a constituent part of the structure of the Faculty. Its aims are as follows:
    - To work out plans for systematic continuing veterinary education in Estonia;
    - To cooperate with the Estonian Veterinary Association and the state veterinary institutions in organizing continuing education;
    - To organize training courses for students and practising veterinarians in 2002-2004 with the participation of international lecturers;
    - To launch specialization in veterinary training.
3) In the academic year 2002/2003 the funding of the Department of Continuing Education comes mainly from the participation fees of the courses and from the funding of the Faculty of Veterinary Medicine. Starting with 2004 the Faculty will apply for additional funding from international training programmes (Socrates, Erasmus) and state target-funded grants.
4) Seven courses are planned for 2003-2004. This number should be sufficient, taking into account the Phare courses that will take place during the same period.

3.4. Plan to set up Estonian and international cooperation networks for veterinary training

Estonian and international cooperation networks will be set up in veterinary training.

1) Cooperation in Estonia:
    - Cooperation agreements with agricultural enterprises.

    In 2002 cooperation agreements were concluded with the following large farms with the purpose of teaching, practical work, and research: Torma Agricultural Association, Põlva Agricultural Association, Aardla Dairy Association, Estonia Joint-Stock Company, Tartu Agro Ltd, Centre for Equestrian Sport and Recreation (Appendix 12). The aforementioned agreements ensure the EAEVE-

required number of animals for practical work in clinical subjects. The researchers and doctoral students will have access to farm animals for collection of experimental data.

- Cooperation agreement with the Veterinary and Food Laboratory for joint research and doctoral studies (there is a preliminary agreement, which will be finalized in December 2002).
- Cooperation agreement with the Medical Faculty of the University of Tartu that covers teaching and research (there is a preliminary agreement, which will be finalized in November 2002).

2) International cooperation
    - A joint meeting of the faculties of veterinary medicine of the Baltic and Nordic countries was held at the Latvian Agricultural University in Jelgava on 1 September 2002. During the meeting preliminary negotiations were held between the faculties of veterinary medicine of the Baltic states and the NOVA University concerning cooperation in the framework of specialization during the sixth year of veterinary training and the teaching of elective subjects (Appendix 13). The project foresees the exchange of teaching staff and student mobility between various higher schools.
    - There are preliminary agreements to sign cooperation agreements concerning teaching and research with the faculties of veterinary medicine at the Lithuanian Academy of Veterinary Medicine and the Latvian Agricultural University in January 2003. The project foresees close cooperation in the field of specialization during the sixth year of veterinary training, doctoral studies, and continuing education.
    - The years 1999-2001 witnessed close and fruitful research cooperation between the Estonian Agricultural University and the Centre of Reproductive Biology in Uppsala (CRU) within the framework of the programme "Improvement of reproductive efficiency in farm animals", which was funded by the Swedish Institute (Visby programme).
      The new cooperation network for 2002-2004 "Farm animal reproduction-reducing infectious diseases and conserving local genetic resources " (the new Visby programme) will involve, in addition to the Estonian Agricultural University and the CRU, also the Lithuanian Veterinary Academy and the Latvian Agricultural University. The programme covers exchange of researchers, continuing education of teaching staff and veterinarians, and joint symposia (Appendix 14).
    - The Faculty of Veterinary Medicine at the Estonian Agricultural University is a founding member of the Nordic and Baltic educational network "Reliable Food Inspection in Nordic and Baltic Countries". The project is located at the Norwegian School of Veterinary Medicine; its budget for 2003-2004 amounts to one million DKK (funded by the Nordic Council of Ministers). The working plan of the project foresees seminars and courses in food microbiology (Appendix 15).

3.5. Plan to draw up a long-term development plan of veterinary training

The development plan will be drawn up with the following considerations:

- It will estimate the prospective need for veterinarians until 2015, proceeding first and foremost from the population dynamics of domestic and farm animals and the prognosis of the retirement of practising veterinarians. The estimate will be based on the data provided by the Ministry of Agriculture, the Veterinary and Food Board, and the Estonian Veterinary Association (December 2002 - January 2003).
- It will estimate the prospective need for veterinary control officers in accordance with EU norms until 2010, with contributions from specialists of the Veterinary and Food Board, the Agricultural Ministry, the Veterinary and Food Laboratory, and the Estonian Veterinary Association (December 2002- February 2003).
- Consultations will be held with Prof Stig Einarsson, TAIEX expert, concerning the long-term development plan (January 2003).
- The committee for drawing up the long-term development plan will meet on a regular basis (twice a month from November 2002 to March 2003).

4. Anticipated results of the action plan in preparation for the evaluation of veterinary training in 2004

- The complex of buildings, nomenclature of rooms, and the spaces will conform to the EAEVE Minimum Standard for Veterinary Schools.
- The anatomical and pathoanatomical complexes and the large and small animal clinics will be completed.
- The equipment of the structural units of anatomy, pathoanatomy, clinics, etc., especially the equipment used in the teaching process, will conform at least to the minimum standards of EAEVE. The researchers and support personnel who use the equipment will have received sufficient training for its efficient use.
- The Faculty of Veterinary Medicine will have acquired up-to-date learning resources. This objective will be met with the help of interactive teaching aids, compiled by Phare specialists within the framework of Phare I and Phare II, and the Estonian-language textbooks and handbooks written by the teaching staff of the faculty within the framework of Phare II.
- The Library of the Estonian Agricultural University will provide the teaching staff and the students of the faculty with access to contemporary foreign-language textbooks and handbooks, specialist journals, and databases.
- The Faculty of Veterinary Medicine will employ at least 31 full-time members of the teaching staff, whose optimum teaching load will enable them to do research efficiently and to supervise postgraduate students.
- Thanks to a sufficient reserve of doctoral students (25), the teaching staff that will retire in 2003-2004 will be replaced by young lecturers with PhD degrees. They will also fill nine additional teaching positions.
- The salaries will be raised to the level foreseen by the Ministry of Education and the Universitas Association on 26 April 2002, which will motivate the teaching staff to commit themselves more fully to teaching and research.
- About 50 members of the teaching staff and doctoral students (prospective university teachers), who teach the curriculum of veterinary medicine, will have attended short-term courses at EU accredited universities with Phare I funding. It will raise their qualifications towards the EAEVE standard.

- The work of all the doctoral students will be directed by international supervisors in addition to the domestic ones.
- Thanks to the implementation of the action plan of continuing veterinary education, the faculty will include a properly functioning department of continuing education. The department of continuing education will be able to organize training courses to practising veterinarians, veterinary control officers, and students in Estonia in cooperation with the Estonian Veterinary Association and the veterinary training institutions in Nordic and Baltic countries.
- As a result of setting up the Estonian and international cooperation networks, the Faculty of Veterinary Medicine will have close ties with contemporary Estonian agricultural enterprises on a contractual basis, which will serve as an important basis for the clinical teaching of students and the research conducted by the teaching staff of the faculty.
- There will be cooperation with the Veterinary and Food Laboratory to make optimum use of the contemporary research equipment and to train personnel for the laboratory.
- There will be cooperation with the Medical Faculty of the University of Tartu that covers joint research projects, joint use of expensive equipment, and exchange of teaching staff.
- Cooperation will have been launched with the faculties of veterinary medicine in the Baltic and Nordic countries within the framework of the NOVA-BOVA programme (student and teaching staff mobility between various higher schools for certain courses), as well as with the faculties of veterinary medicine of the Latvian Agricultural University and the Lithuanian Veterinary Academy (first and foremost concerning specialization during the sixth year of study and doctoral studies).
- Membership in the Nordic and Baltic educational cooperation network "Reliable Food Control in Nordic and Baltic Countries" will ensure constant training and continuing education of students, practising veterinarians, and food control officers in the field of food hygiene and safety.

The fulfilment of the above-mentioned conditions will create the basis for the accreditation of the Faculty of Veterinary Medicine at the Estonian Agricultural University by the European Association of Establishments for Veterinary Education in the autumn of 2004.

/signature/

Prof T. Suuroja
Dean of the Faculty of Veterinary Medicine
Estonian Agricultural University

Appendix III

FACULTY OF VETERINARY MEDICINE

VETERINARY MEDICINE
Study plan (6623206)

General studies

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-6.2339	History of Veterinary Medicine	1.0		P								
TET-3. 2342	Physics for Medical Students with Fundamentals of Biophysics	2.0	E									
LKI-2.2668	Organic and Analytical Chemistry	4.0	E									
MIT-5.2709	Risk Analysis and Safety in Working Environment	2.0						P				
LKI-1.2480	Short Course in Animal Breeding and Genetics	2.5		E								
MST-1.1116	Fundamentals of Economics	3.0			E							
MST-2. 877	Fundamentals of Law	2.0						P				
MST-2.763	General Course in Communication Psychology	2.0			A							
LKI-1.1759	Informatics and Biometry	3.0		P								
KEK-1.zzz	Foreign Language for Specific Purposes	3.0	x	E								
	Total	**24.5**	**7.5**	**8.0**	**5.0**			**4.0**				

Speciality studies

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
AGT-4.3399	Forage plants	3.0	E									
LKI-1.2607	Animal Biology	2.0	E									
LKI-4.1107	Special Course in Different Species of Farm Livestock	3.0		E								
LKI-3.1103	Animal Nutrition	3.0				E						
LKI-3. 2757	Nutrition Physiology and Metabolism	2.0								E		
LKI-2.1763	Biochemistry and Basics of Molecular Biology	5.0			E							
KEK-1.098	Latin for Specific Purposes	1.0	x	P								
LAT-6.1546	Cytology, Embryology and Histology	2.5+2.5		x	E							
LAT-6.518	Anatomy of Domestic Animals	2+4.5 +2.5	E	E	E							
LAT-5.1327	Physiology	2.5+2.5			x	E						
LAT-5.2338	General Pathology (pathological physiology)	1.5+3				x	E					
LAT-x.2340	Field Practice and Practical Training in Clinics	1+1+3 +4+5	x			P	x	P	x	P	x	P
LAT-3.1540	Operative Surgery	2.5+2.5					x	E				
LAT-3.1542	Obstetrics and Gynaecology	1.5+3 +1.5						x	x	E		
LAT-3.1541	Artifical Insemination and Reproduction	2.5+2.5					P	E				
LAT-3.1319	Veterinary Radiology	1.0+1.5							x	E		
LAT-3.531	General and Special Surgery	2+2.5 +1+0.5							P	x	x	E
LAT-3.1756	Anaesthesiology	2.0						E				

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-3.1757	Ophtalmology	2.0							E			
LAT-4.2332	Epizootology and Infectious Diseases	1.5+1.5+1.5+1.5							x	P	x	E
LAT-6.1545	Forensic Veterinary Medicine	1.5										P
LAT-4.1753	Microbiology	2.5+2.5			x	E						
LAT-4.2331	Virology	2.0+2.0				x	E					
LAT-4.2337	Organization of Veterinary Services and Veterinary Legislation	1.5									E	
LAT-4.1754	Parasitology and Parasitic Diseases	3.0+3.0								P	E	
LAT-6.926	Pathological Anatomy and Necropsy	2.5+2.5+1.5+1.5						x	E	x	P	
LAT-5.3403	Animal Hygiene	3.0+1.0					x	E				
LAT-5.1751	Pharmacology	2.5+2.5					E			E		
LAT-5.1539	Toxicology	2.0								P		
LAT-3.3405	Internal Diseases	3+3+3							x	P,E	E	
LAT-3.3406	Clinical-laboratory Diagnostics	4.0						E				
LAT-4.1543	Veterinary Genetics	2.0					E					
LAT-4.542	Fundamentals of Scientific Research	1.0				P						
LAT-3.2786	Animal Protection and Professional Ethics	0.5+1.0	x	P								
LAT-5.543	Ethology	1.0				P						
LAT-5.3404	Animal Welfare and Environment	2.0									P	
LAT-4.1628	Veterinary Immunology	2.0						P				

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-7.551	Hygiene of Milk and Dairy Products	1.5							P			
LAT-7.1755	Food Hygiene	3.0+3.0								P	E	
AGT-3.952	Ecology and Environmental Protection	3.0				P						
	Total	**161.0**	9.5	11.0	15.0	17.5	18.5	20.0	18.5	26.0	17.5	7.5

Elective speciality subjects (7.5 credit points to be selected)

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-6.3461	Evolution	1.0		P								
LAT-6.3462	Anatomy of Fishes, Amphibians and Reptiles	1.0		P								
LAT-6.2368	General and Molecular Biology	2.0		P								
LAT-5.3465	Pet Fish in Aquarium	0.5						P				
LAT-3.3464	Pain	0.5							P			
LAT-3.3463	Endocrinology	1.5						P				
LAT-3.3471	Medicine of Exotic Animals	2.0							P			
LAT-5.3466	Sports Physiology and Doping	1.5					P					
LAT-3.3467	Physiotherapy	1.0						P				
LAT-3.3460	Alternative Methods in Veterinary Medicine	1.0						P				
LAT-3.3459	Medicine of Laboratory Animals	1.5							P			
LAT-4.3458	Fur Animal Diseases	2.0										P

Subject code	Subject	Credit points	Study year, term									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-4.917	Poultry Diseases	1.5										P
LAT-3.3457	Diseases of Hoof	1.0								P		
LAT-6.544	Fish Diseases	1.0									P	
LAT-5.1316	Diseases of Bees	1.0								P		
LAT-3.2334	Small Animal Clinical Nutrition	1.0								P		
LAT-4.3456	Wild Animal Diseases	1.0									P	

General studies	24.5	7.5	8.0	5.0			4.0				
Speciality studies	161.0	9.5	11.0	15.0	17.5	18.5	20.0	18.5	26.0	17.5	7.5
Optional specialty and elective subjects	12.5		2.0			1.0	1.0	1.5		3.0	4.0
Total	**196.5**	**17.0**	**21.0**	**20.0**	**17.5**	**19.5**	**25.0**	**20.0**	**26.0**	**20.5**	**11.5**

6 –th academic year

Directions for specialization

Compulsory subjects for all directions

Subject code	Subject	Credit points	Study year, term	
			6.	
			a	s
LAT-4.3418	Veterinary Epidemiology	3.0	E	
LAT-5.3419	Professional Ethics	0.5	P	
LAT-3.3420	Veterinary Practice Management	1.0+0.5	x	P
LAT-4.3421	Zoonosis and Public Health	1.0	P	
	Total	**6.0**	**5.5**	**0.5**

'Productive Animals and Equines Medicine'

LAT-5.3422	Species-specific Behaviour of Farm Animals	1.0	P	
LAT-5.3423	Biotechnology of Reproduction	1.0	P	
	Hygiene of the cattle herd:			
LAT-3.3424	Milk Quality Management	1.5	E	
LAT-3.3425	Reproduction Management	1.5	E	
LAT-3.3426	Youngstock Health Management	1.5	E	
LAT-3.3427	Metabolic Diseases and Nutrition of High-yielding Dairy Cows	1.5	E	
LAT-4.3428	Infections Control in Cattle Herds	1.0	E	
	Small ruminants:			
LAT-3.3429	Metabolic Diseases in Sheep and Goats	1.5	E	
LAT-4.3430	Infectious Diseases in Sheep and Goats	1.5	E	
LAT-3.3431	Reproductive Disorders in Sheep and Goats	1.0	E	
	Pigs:			
LAT-3.3432	Youngstock Health Management	1.5		E
LAT-3.3433	Management of Swine Reproduction	1.5		E

LAT-4.3434	Infections Control in Swine Herds*	2.0		E
	Horses:			
LAT-3.3435	Diseases of Foals	1.0		E
LAT-3.3436	Equine Internal Medicine	2.0		E
LAT-3.3437	Equine Orthopedics	1.5		E
LAT-3.3438	Equine Reproductive Management	1.5		E
	TOTAL (with compulsory subjects)	**38.5**	**20.0**	**18.5**

'Pet Animals Medicine'

LAT-3.3439	Neurology**	1.5	A	
LAT-3.3440	Small Animal Gastroenterology	2.5	E	
LAT-3.3441	Small Animal Urology	2.5	E	
LAT-3.3442	Small Animal Cardiovascular Diseases	2.5	E	
LAT-3.3443	Small Animal Respiratory Diseases	2.5	E	
LAT-3.3444	Small Animal Reproduction	2.5	E	
LAT-3.3445	Small Animal Surgery	2.5		E
LAT-4.3446	Small Animal Infectious Diseases	2.5		E
LAT-3.3447	Small Animal Dermatology	2.5		E
LAT-3.3448	Small Animal Hereditary Diseases	1.0		P
LAT-3.3449	Small Animal Pediatric and Geriatric Diseases	1.0		P
LAT-3.3450	Small Animal Stomatology	1.0		P
LAT-33472.	Emergency Care of Small Animals	1.0		P
LAT-3.3451	Small Animal Clinical Diagnosis by Laboratory Methods	0.5+2.0	x	E
LAT-5.3452	Species-specific Behaviour of Pet Animals	1.0		P
LAT-3.3453	Research Project in Pet Animal Medicine	3.5		E

	TOTAL (with compulsory subjects)	**38.5**	**20.0**	**18.5**

'Food hygiene'

LAT-7.3454	General Food Hygiene **	3.5		E
LAT-7.3455	Meat Inspection **	3.5		E
LAT-7.3473	Milk Hygiene	1.5	P	
LAT-2.2756	Food Safety	3.0	E	
LAT-2.1568	Legislation of Food	2.0		P
LAT-4.2802	Microbiology of Foodstuffs	4.0	x	E
LAT-2.1889	General Course in Quality Management	1.5		P
LAT-1.1890	General Course in Sensoric Analysis of Food Products	1.5		P
LAT-2.3474	Technology and Hygiene of Dairy Products	2.0		E
LAT-1.3475	Technology of Meat Products and Production Hygiene	2.0	E	
AGT-6.1607	Quality and Standards of Horticultural and Field Products	3.5	E	
LAT-7.2918	Food Toxicology	2.5	P	
	TOTAL (with compulsory subjects)	**38.5**	**20.0**	**18.5**

** Compulsory subjects for those specializing in farm animals

- Compulsory subjects for those specializing in food hygiene

	Credit points	Study year, term					
		1.	2.	3.	4.	5.	6.

		a	s	a	s	a	s	a	s	a	s	a	s
General studies	24.5	7.5	8.0	5.0			4.0						
Specialty studies	199.5	9.5	11.0	15.0	17.5	18.5	20.0	18.5	26.0	17.5	7.5	20.0	18.5
Optional specialty and elective subjects	12.5		2.0			1.0	1.0	1.5		3.0	4.0		
Final examinations	3.5										2.0		1.5
TOTAL	**240.0**	**17.0**	**21.0**	**20.0**	**17.5**	**19.5**	**25.0**	**20.0**	**26.0**	**20.5**	**13.5**	**20.0**	**20.0**

MEAT AND DAIRY TECHNOLOGY
Master's study plan *(7622217)*

Speciality studies

Subject code	Subject	Credit points	Study year, term			
			1.		2.	
			a	s	a	s
LKI-3.2565	Fundamentals of Scientific Experiments and Statistical Data Analysis	3.0	P			
LAT-2.1564	Quality Management	3.0		E		
LAT-2.2752	Legislation of Food	3.0			E	
MST-1.2518	Basics of the European Union	3.0				E
MST-2.804B	General Course in Enterprise Management	2.0				P
MIT-7.1217	Fundamentals of Building	2.0			P	
LAT-2.2753	Theoretical and Techno-economical Fundamentals of Technological Processes in Food Industry	3.5	E			
LKI-2.2787	Methods of Foodstuff Analysis	2.0		E		
LAT-2.2595	Microbiology and Biotechnology of Meat and Dairy Products	4.0+2.0	E		E	
LAT-1.2755	Product Development in Food Industry	2.0			E	
LAT-1.1552	Technology Design in Meat and Dairy Industry	2.0			P	
LAT-1.1557	Practical Training in Technology	5.0		P		
	Total	**36.5**	**10.5**	**10.0**	**11.0**	**5.0**

Specialization in Meat Technology

Subject code	Subject	Credit points	Study year, term	
			1.	2.

			a	s	a	s
LAT-1.2739	Technology of Slaughter Products	4.0	E			
LAT-1.2281	Physico-chemical and Biochemical Fundamentals of Meat Technology	4.0	E			
LAT-7.1550	Hygiene and Veterinary Inspection in Meat and Dairy Industry	2.5	E			
LAT-1.2596	Technology of Meat Products	5.0		E		
LAT-1.1358	Special Equipment for Meat Industry	3.0		E		
	Total	**18.5**	**10.5**	**8.0**		

Specialization in Dairy Technology

Subject code	Subject	Credit points	Study year, term			
			1.		2.	
			a	s	a	s
LAT-2.2672	Technology of Dairy Products	11.5	E	E		
LAT-2.2279	Physico-chemical and Biochemical Fundamentals of Dairy Technology	4.0	E			
LAT-2.1301	Special Equipment in Dairy Industry	3.0		E		
	Total	**18.5**	**10.0**	**8.5**		

Speciality studies	36.5	10.5	10.0	11.0	5.0
Specialization in Meat Technology	18.5	10.5	8.0		
Specialization in Dairy Technology	18.5	10.0	8.5		
Elective subjects	5.0				5.0
Master's thesis	20.0		2.0	8.0	10.0
TOTAL IN MEAT TECHNOLOGY	**80.0**	**21.0**	**20.0**	**19.0**	**20.0**
TOTAL IN DAIRY TECHNOLOGY	**80.0**	**20.5**	**20.5**	**19.0**	**20.0**

Appendix IV

FACULTY OF VETERINARY MEDICINE

VETERINARY MEDICINE

Study plan (6623206) for those admitted before 2002

GENERAL DISCIPLINES

Code	Subject	Credits	Year, semester									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
LAT-6.2339	HISTORY OF VETERINARY MEDICINE	1.0		A								
TET-3. 1793	MEDICAL PHYSICS AND BIOPHYSICS	2.0	E									
LKI-2. XXX	Organic and analytical chemistry	4.0	E									
TET-1.XXX MIT-1.XXX	Risk analizys and safety of working environment	2.0						A				
LKI-1. XXX	Course of genetic and breeding	2.5		E								
MST-1.1116	Basic economy	3.0			E							
MST-2. 877	Foundation of law	2.0						A				
MST-6. 763	Communication psychology	2.0			A							
LKI-1. 1759	Information and biometry	3.0		A								
KEK-1.XXX	Foreign language	3.0	X 1,5	E 1,5								
	TOTAL	**24.5**	**7,5**	**8,0**	**5.0**			**4.0**				

PROFESSIONAL TRAINING

Code	Subject	Credits	Year, semester									
			1.		2.		3.		4.		5.	
			a	s	a	s	a	s	a	s	a	s
AGT-4.1044	Botany with fundamentals of agronomy	3.0	E									
LKI-1.XXX	Animal biology	2.0	E									
LKI-4.1107	Special course of different species of farm livestock	3.0		E								
LKI-3.XXX	Animal nutrition	3.0				E						
LKI-3 XXX	Physiology of nutrition metabolism	2.0								E		
LKI-2.1763	General course in biochemistry with basics of molecular biology	5.0			E							
KEK-1.098	Latin language	1.0	X 0,5	A 0,5								
LAT-6.1546	Cytology, embryology and histology	5.0		X 2,5	E 2,5							
LAT-6.518	Anatomy of farm animals	9.0	X 2	E 4,5	E 2,5							
LAT-6.1327	Physiology	5.0			X 1,5	E 3,0						
LAT-6.915	Pathological physiology	4.5			X 1,5	E 3,0						
LAT-x.1547	Field practice and practical training in clinics	14.0	X 1,0	A 1,0				A 3,0	A 2,0	A 2,0	A 2,0	A 3,0
LAT-3.1540	Operative surgery	5.0					X 2,5	E 2,5				
LAT-3.1542	Obstetrics and gynaecology	6.0						X	X	E		

								1,5	3,0	1, 5		
LAT-3.1541	Artificial insemination and reproduction	5.0					X 2,5	E 2,5				
LAT-3.1319	Veterinary radiology	2.5							X 1,0	E 1,5		
LAT-3.531	General and special surgery	6.0							A 2,0	X 2,0		E 2,0
LAT-3.1756	Anaesthesiology	2.0					E					
LAT-3.1757	Ophtalmology	2.0							E			
LAT-4.1752	Epizootology and infectious diseases	6.0							X 1,0	A 1,0	X 2,0	E 2,0
LAT-6.1545	Forensic veterinary	1.5										A
LAT-4.1753	Microbiology	5.0			X 2,5	E 2,5						
LAT-4.1326	Virology	4.0				X 2,0	E 2,0					
LAT-4.1325	Veterinary organization and jurisprudence	1.5									E	
LAT-4.1754	Parasitology and parasitic diseases	6.0								X 3,0	E 3,0	
LAT-6.926	Pathological anatomy and necropsy	8.0						X 2,5	E 2,5	X 1,5	A 1,5	
LAT-1538	Animal hygiene	5.0				E						
LAT-3.1751	Pharmacology	5.0					X 2,5	E 2,5				
LAT-3.1539	Toxicology	2.0								A		
LAT-3.1749	Noninfectious internal diseases	8.0						X 2,0	X 2,0	E 2,0	E 2,0	
LAT-3.1750	Clinical-laboratory diagnostic	5.0					X 2,5	E 2,5				
LAT-4.1543	Veterinary genetic	2.0					E					
LAT-4.542	Fundamentals of scientific research	1.0				A						
LAT-6.XXX	Animal protection and professional ethics	1.5	X 0,5	A 1,0								
LAT-3.543	Ethology	1.0				A						
LAT-3.545	Animal welfare and environment	1.0									A	
LAT-4.1628	Veterinary immunology	2.0					A					
	Milk and dairy products hygiene	1.5							A			
LAT-6.1755	Food hygiene	6.0							X 2,0	X 2,0	E 2,0	
AGT-3.952	Ecology and environment protection	3.0				A						
	PROFESSIONAL TRAINING	**161**	9,0	12,5	16,0	23,5	18,0	19,0	19,0	20,5	15,0	8,5
	GENERAL STUDIES	**24,5**	7,5	8,0	5,0			4,0				
	STATE EXAMS	**3,5**										
	Scientific work or free disciplines (humanitary subjects 4 credits)	**11,0**		2,0			1,0	1,0	2,0	1.0	2,5	1,5
	lV. **TOTAL**	**200**	16,5	22,5	21,0	23,5	19.0	24,0	21,0	21,5	17,5	10,0

Appendix V

Phare project ES0105.02 Competence Centre of Veterinary Public Health
Procurement of apparatus, equipment, hard- and software

Lots/Items	Departments	Price €	Cost €
Lot 1. General laboratory equipment	**QUANTUM EESTI AS**		**116 293.00**
1. Deep freezer, -87…-65ºC	C, Hy	**6252.00**	**12 504.00**
2. Deep freezer, -46…-10ºC	Hy,F	**2412.00**	**4 824.00**
3. Porkka cold room 3 m^3	T	**4500.00**	**4 500.00**
4. Water purification system	C	**7086.00**	**7 086.00**
5. Reverse osmosis system	C,Hy,F	**4620.00**	**13 860.00**
6. Homogenizer	C,Hy	**1643.00**	**3 286.00**
7. Vortex mixer	C3,Hy3,F,R	**201.00**	**1 608.00**
8. PH/conductivity meter	C,Hy	**1300.00**	**2 600.00**
9. Laboratory dishwasher	C	**15000.00**	**15 000.00**
10. Magnetic stirrer with hotplate	C,Hy2,R	**567.00**	**2 268.00**
11. Sample mill	Hy	**4714.00**	**4 714.00**
12. Stomacher circulator	C	**11024.00**	**11 024.00**
13. Horizontal shaker for extraction	Hy	**4457.00**	**4 457.00**
14. Colony counter	C,F	**1280.50**	**2 561.00**
15. Cryoscope	F	**5059.00**	**5 059.00**
16. Micro-osmometer	R	**4380.00**	**4 380.00**
17. Luminometer	Hy2	**6156.00**	**12 312.00**
18. 2-D gel-electrophoresis system	Hy	**4250.00**	**4 250.00**
Lot 2. Chromatographic apparatus	**QUANTUM EESTI AS**		**305 078.00**
1. Gas chromatograph	Hy	**37 115.00**	**37 115.00**
2. LC/MS/MS	Hy	**267 963.00**	**267 963.00**
Lot 3. PC-s and presentation equipment			
1. PC (desktop), var. 1	Hy9	**912.00**	**8 208 .00**
2. PC (desktop), var. 2	Hy3,C3,T3,M3,F4,H,R	**1055.00**	**18 990.00**
3. Portable PC	Hy4,F4,C2	**1645.00**	**16 450.00**
4. Laser printer var 1	C2,Hy2,F2,T,M,H	**333.00**	**2 997.00**
5. Laser printer var 2	Hy,F	**1562.00**	**3 124.00**
6. Colour laser printer	Hy,T	**1185.00**	**2 370.00**
7. Scanner	C,Hy,F,T,M	**166.00**	**830.00**
8. 24-port Ethernet Switch	M	**455.00**	**455.00**
9. Video/data projector	C,Hy2,F2,M	**2130.00**	**12 780.00**
10. Portable overhead projector	Hy2	**490.00**	**980.00**
11. Colour TV camera	M	**1668.00**	**1 668.00**
12. Digital camera	Hy,M	**404.00**	**808.00**
13. Super-perform zoom digital camera	M	**15104.00**	**15 104.00**
14. Colour copier A3-A5	Hy,T	**13076.00**	**26 152.00**
15. Fax machine	Hy,F	**593.00**	**1 186.00**
16. Copy machine	F,C,Hy,M	**3857.00**	**15 428.00**

Lot 4. Microbial DNA analyser	**QUANTUM EESTI AS**		**61 051.72**
1. Gradient Thermal Cycler	C	**6 159.60**	**6 159.60**
2. Biophotometer	C	**2 902.90**	**2 902.90**
3. Centrifuge for 1.5/2 ml tubes	C3	**530.15**	**1 590.45**
4. Refrigerated centrifuge	C	**2 115,30**	**2 115,30**
5. Pipettes Reference with stand	Hy,R	**1257.50**	**2 515.07**
6. Digital pipette set	C,Hy	**1856.67**	**3 713.34**
7. Vortex mixers	C3	**200.10**	**600.30**
8. End-over-end rotator	Hy	**420.00**	**420.00**
9. Refrigerator/freezer	C	**3 625.00**	**3 625.00**
10. Thermal mixer	C	**2 122.80**	**2 122.80**
11. Electrophoresis power supply	C	**870.00**	**870.00**
12. Horizontal gel-electrophoresis system	C	**553.60**	**553.60**
13. UV cabinet	C	**2 600.00**	**2 600.00**
14. Water bath	C	**1 450.00**	**1 450.00**
15. Magnetic stirrer with hot plate	C	**600.00**	**600.00**
16. UV lamp	C	**750.00**	**750.00**
17. PFGE system	C	**16 263.36**	**16 263.36**
18. Gel documentation system	C	**12 200.00**	**12 200.00**
Lot 5. ELISA systems	**QUANTUM EESTI AS**		**33 863.70**
1. ELISA reader	C,Hy,R	**7011.00**	**21 033.00**
2. Microplate washer	C,Hy,R	**3665.00**	**10 995.00**
3. Microplate shaker	C,Hy,R	**611.90**	**1 835.70**
Lot 6. Apparatus for meat and diary lab	**AMEX**		**88 904.30**
1. Analyser for total fat determination	F	**29 112.50**	**29 112.50**
2. Analyser for Kjeldahl nitrogen det	F	**27 130.60**	**27 130.60**
3. Homogenizer	F	**3 688.50**	**3 688.50**
4. Water activity meter	F,Hy x 11 307.50	**11307.50**	**22 615.00**
5. Up-right freezer, -40 ˚C	F	**4 769.70**	**4 769.70**
6. pH-meter	F	**984.60**	**984.60**
7. Portable pH-meter	F	**603.40**	**603.40**
Lot 7. Ovens, heaters, autoclaves, incubators	**AMEX**		**70 469.00**
1. Autoclave 25 l	Hy,F x 4 883	**4883.00**	**9 766.00**
2. Autoclave 65 l	C	**11 248.80**	**11 248.80**
3. CO_2 incubator	C,F x 7 121.80	**7121.80**	**14 243.60**
4. Cooled incubator	C,F x 3 405.30	**3405.30**	**6 810.60**
5. Incubator 108 l, 5…70 ºC	C4,F x 1 184.40	**1184.40**	**5 922.00**
6. Incubator 100 l, 30… 70 ºC	F	**1 184.40**	**1 184.40**
7. Microwave oven	C	**250.50**	**250.50**
8. Muffle furnace	F	**2 012.60**	**2 012.60**
9. Water bath 18 l	C,Hy x 1527.50	**1527.50**	**3 055.00**
10. Water bath 14 l	F	**603.50**	**603.50**
11. Laboratory oven 40-220 ºC	C2,F2,Hy x 1 648.40	**1648.40**	**8 242.00**
12. Heating block	Hy	**1 110.50**	**1 110.50**
13. Shaking water bath	Hy	**3 185.90**	**3 185.90**

Lot 8. Centrifuges and supplies	**QUANTUM EESTI AS**		**34 828.97**
1. Refrigerated centrifuge	C,Hy	**9262.60**	**18 525.20**
2. Centrifuge for 1.5/2.0 ml	Hy2,F	**530.13**	**1 590.40**
3. Cooling centrifuge for 1.5/2.0 ml	Hy	**2 056.10**	**2 056.10**
4. Laboratory centrifuge	C,Hy	**4911.15**	**9 822.30**
5. Portative centrifuge	T	**2 834.82**	**2 834.82**
Lot 9. Balances	**AMEX**		**14 143.20**
1. Balance 4000g/0.1g	M	**1 123.50**	**1 123.50**
2. Balance 200g/0.1g	C,M3 x 72.30	**72.30**	**289.20**
3. Balance 230g/0.1mg	C,Hy,F2,R x 1 568.00	**71568.00**	**7 840.00**
4. Laboratory balance 1510g/0.01g	Hy,F2 x 1 067.2	**1067.20**	**3 201.60**
5. Moisture analyser	F	**1 688.90**	**1 688.90**
Lot 10. Pathomorphology equipment	**OPTIKA & DIAGNOSTIKA OÜ**		**414 779.00**
1. Dissection table for large animals	M		**34 000**
2. Dissection table for large animals bow.	M		**25 375**
3. Dissection table for small animals	M3x 17 387		**52 161**
4. Hydraulic body lifter	M		**12 158**
5. Organ table	M2x950		**1 900**
6. Instrument cart	M2x 6 617		**13 234**
7. Waste bag cart	M		**368**
8. Bowl stand	M2x 458		**916**
9. Preparating & organ tray	M5x 47		**235**
10. Head rest	M		**132**
11. Autopsy instruments	M3x 1 067		**3 201**
12. Push-cart for animal dead body	M		**10 708**
13. Parallel-vice	M2x 7 942		**15 884**
14. Balance 24 kg	M		**3 758**
15. Balance 500 kg	M		**10 083**
16. Electric necropsy saw	M		**5 533**
17. Neck support	M		**137**
18. Injection apparatus	M		**3 042**
19. Organ container	M3x 1 000		**3 000**
20. Organ container with perforated insert	M3x 1 163		**3 489**
21. Specimen cuvette	M2x 4 892		**9 784**
22. Body cuvette	M		**19 027**
23. Window chain	M		**19 133**
24. Body tray	M3x 650		**1 950**
25. Book-end writing desk	M		**1 125**
26. Universal car	M		**29 825**
27. Modular embedding station	M		**8 337**
28. Cryomicrotome	M		**34 506**
29. Bench microtome	M		**15 331**
30. Anti-vibration table	M		**2 105**
31. Flatteling stable for paraffin section	M		**909**
32. Linear stainer	M		**25 629**
33. Automatic tissue processor	M		**16 408**
34. Rotary microtome	M		**31 396**

Lot 11. Safety cabinets and supplies	**AMEX**		**32 376.60**
1. Class II Laminar flow cabin. (1200)	C2,Hy,F x 5 227.20		**20 908.80**
2. Class II Laminar flow cabin. (1500)	C		**6 735.20**
3. Safety Bunsen burner	C3,Hy x 437.40		**1 749.60**
4. UV sterilisation stand	C2		**2 983.00**
Lot 12. Laboratory furniture, fume cabinets	**UAB LABOCHEMA**		**15 483.00**
1. Fume hood	C,Hy2 x 2 850		**8 550.00**
2. Preparation table	M		**450.00**
3. Fume extraction arm	M3 x 1 025		**3 075.00**
4. Laboratory table	M15 x 135		**2 025.00**
5. Laboratory chair	M30,F2 x 44		**1 408.00**
Lot 13. Software	**Hy MICROLINK SERVIT AS**	**9230.00**	**9230.00**
Lot 14. Various laboratory equipment	**EstDoma OÜ**		
1. UV-Vis spectrophotometer			
2. Vacuum pump	C,Hy,F	**12703.33**	**38 110.00**
3. spe-vacuum manifold	Hy	**3811.00**	**3 811.00**
4. Flaked ice maker	Hy	**583.00**	**583.00**
5. Digital burette 0.1-100 ml	C	**4680.00**	**4 680.00**
6. Autom. Adjust. set pipettes, microb	Hy2,R	**515.00**	**1 545.00**
7. Automatic adjustable set of pipettes	C	**7354.00**	**7 354.00**
8. Set of electronic pipettes	C2,Hy2,R	**833.80**	**4 169.00**
9. Multi-channel pipette	C2,Hy3,F,R	**2050.00**	**14 350.00**
10. Multi-channel electronic pipette	C,Hy,R	**750.00**	**2 250.00**
11. Dispenser manual hand-held	R	**700.00**	**700.00**
12. Micro-organism growth analyser	C,Hy,R	**492.33**	**1 477.00**
	Hy	**43386.00**	**43 386.00**
Lot 15. Endoscopy and ultrasound equipment	**Semetron AS**		
1. Videoendoscope	T	**13610.00**	**13 610.00**
2. Small animal fiberendoscope	T	**6660.00**	**6 660.00**
3. Biopsy forceps	T	**216.00**	**216.00**
4. Cytology brush	T	**70.00**	**70.00**
5. Video processor CH 01D	T	**3555.00**	**3 555.00**
6. Halogen cold light fountain R150DUO	T	**1030.00**	**1 030.00**
7. Video monitor	T	**780.00**	**780.00**
8. Veterinary ultrasound scanner	T	**13757.48**	**13 757.48**
Lot 16. Optical instruments	**OPTIKA & DIAGNOSTIKA OÜ**		**280 545**
1. Classroom microscope var.1	M25x 1 735	**1735.00**	**43 375.00**
2. Classroom microscope var.2	M20x1 659	**1659.00**	**33 180.00**
3. Classroom microscope var.3	M5x 3 302	**3302.00**	**16 510.00**
4. Laboratory microscope var.1	M2x 26 211	**26211.00**	**52 422.00**
5. Laboratory microscope var.2	M	**29 969.00**	**29 969.00**
6. Photomicroscope	M	**72 188.00**	**72 188.00**
7. Inverted microscope	M	**23 750.00**	**23 750.00**
8. Stereomicroscope	M	**7 151.00**	**7 151.00**

Lot 17. Electron microscope	**ELO SERWIS**		**157 805.00**
1. Scanning electron microscope	M	157 805.00	157 805.00
Lot 18. Realtime PCR apparatus	**SURGITECH AS**	**57 920.00**	**57 920.00**
1. Real time PCR apparatus	Hy	57 920.00	57 920.00

Legend:
A - **A**nimal clinic, Aivar Vuks 313 224, 313 219, avuks@eau.ee
C - Department of **C**ontagious diseases, Tiiu Saar 313 342, tsaar@eau.ee
F - Department of **F**ood science, Priit Elias 313 348, pelias@eau.ee
H - Department of Animal **H**ealth, Andres Aland 313 221, aland@eau.ee
Hy-Department of Food **Hy**giene, Mati Roasto 313 433, matiro@eau.ee
M - Department of **M**orphology, Toivo Suuroja 313 345, marit@eau.ee
R - Department of **R**eproduction biology, Ülle Jaakma 313 466, yjaakma@eau.ee
T - Department of **T**herapy, Madis Aidnik 313 201, aidnik@eau.ee

Appendix VI

Rough plan of the Faculty

Plans are attached only to paper copy.

A. **Main entrance of animal clinic**
B. **Registry room**
C. **Pharmacy**
D. **Examination and treatment**
E. **Necropsy**
F. **Incineration**
G. **Large animal surgery rooms**
H. **Small animal surgery rooms**
I. **X-ray**
J. **Small animal stationary**
K. **Offices and seminary rooms**
L. **Secondary rooms for small animal clinic**
M. **Large animal stationary**
N. **Manege**
O. **Quarantine**
P. **Department of Morphology**
Q. **Department of Animal Health (under reconstruction)**
R. **Department of Infectious Diseases (Microbiology, Virology)**
S. **Offices of Department of Therapy**
T. **Parasitology (under reconstruction)**
U. **Computer room**

Appendix VII

THE LIBRARY OF ESTONIAN AGRICULTURAL UNIVERSITY

ANNUAL REPORT 2002

FOREWORD

In 2002, from the viewpoint of development of the Library of Estonian Agricultural University (the LEAU), one stage came to an end. This development had required great effort, reorganization of previous work and attempts to keep pace with the changes, which had taken place in Estonian library science.
The library has been in its present new premises since the spring of 2000, having moved twice during four years.
The merging of several branches of the library into one structure has enabled a more economical use of resources and no longer requires duplicating literature. As a compact university village is presently developing in Tähtvere and most of the university buildings are located quite close to each other, the merging of the collections of the library has not lessened the availability of literature. The growing interdependence of sciences has rather improved the interdisciplinary use of the collections from different fields.

The year 2002 was the year of stabilization for the library: for the first time over a long period the library could perform only its main duties. In order to secure the role and place of the library in Estonian society, it was especially important to prepare the development plan of the library and specify its development tasks for the year 2003.
The library systematically started acquiring scientific and study literature in accordance with the development guidelines of the university and the established division of tasks between research libraries. In addition to upgrading information technology, lots of attention was paid to improving customer service.

COLLECTIONS

In 2002, the basis for acquiring publications for the library and the proportions of collected research literature by fields of science was revised. The methods of assessing collections were worked out and the project dealing with the assessment of collections was commenced.
1,429 books, 289 annual sets of serials (including 148 magazines and 36 newspapers) and 64 manuscripts of research work were supplied. As of the end of the year, the collections contained 522,332 items of printed matters (including 488,741 books).

In the year 2003 the Library subscribed to 104 journals (among them 37 foreign scientific journals) and continuing publications.

In the year 2002 eight online databases were available on trial basis, out of which two were purchased. Thus the students, researchers and lecturers could get an overview of a large amount of significant information available through online databases and e-journals.

In addition the Library collection supplemented by the donations.
Functioning as a depository library of the FAO (the Food and Agriculture Organization of the United Nations) in Estonia, we receive the FAO publications. Out of the FAO publications 1312 have been entered in the Library collection.
All in all the Library has 11 exchange partners, from the above source 18 annual sets of periodicals were received.

All the publications (purchases, donations, items received through exchange) acquired by the Library of EAU throughout the reported year are entered in the ESTER online catalogue.
The Library participated in the retrospective projects of the ELNET Consortium.

During the reported year 3699 bibliographic entries and 31013 copy entries were made or supplemented with additional data.

As of the end of the year 2002 the Estonian libraries online catalogue ESTER contained 41072 entries carrying the call number of the LEAU, which comprises 15,2% of the total fund.

WORK OF BIBLIOGRAPHY DEPARTMENT

In cooperation with other ELNET Consortium libraries in INNOPAC the journals, collections and serial publications published in Estonia are described on analytical level.

The Bibliography Department of the Library of EAU enters and indexes in the ESTER online catalogue articles from 31 publications: 11 agricultural journals, 4 annual books and 16 collections of research works. 1501 articles were bibliograhized and indexed.

In the 1990's, based on the card files of the department, personal lists of the following members of the academic staff of the EAU were compiled/edited: Osvald Hallik, Karl Sinijärv, Loit Reintam, Jaan Lepajõe, Olev Saveli ja Paul Kuldkepp. In 2002 the Department provided assistance to the Institute of Animal Husbandry in compiling the personal list of prof. Ülo Oll and two lists of recommendation were drafted.

In 1993 the Library of EAU was designated the national AGRIS/CARIS (International Information system for the Agricultural Sciences and Technology) Center of Estonia. The Library makes input into the AGRIS database concerning agricultural and agriculture related monographs, articles from proceedings and journals, and conference materials published in Estonia. For years the above mentioned work has been a thanks-worthy outlet to the world for the academic staff of EAU and for all agricultural scientists of Estonia. Last year 238 records were entered into the database. The total number of input into the database by the Library of EAU is 1789 records.

READERS' SERVICE

In December 21, 2002 4377 readers were registered in the Library. During the year 34961 visits were registered, 63316 loans, out of it 47931 to the reading room and 15385 home loans. In the reading room there are 50 workplaces and 5 PC terminals for searches in the online catalogues and information retrieval from full text scientific databases. On the open shelves on the reading room there are displayed the journals of last three years and the latest copies of most used textbooks. The amount of the titles of the textbooks are changed according to the demand.

In the reading room located in the department of bibliography it is possible to use the publications of FAO (Food and Agriculture Organization of the United Nations) and the manuscript materials of research work.

In 2002 more attention was paid to professional service and the elaboration of service principles.

60 readers placed 463 requests to Interlibrary Loan (ILL) service. From the collections of the Library of EAU 43 documents were requested through ILL. The Library is a member of AGLINET (Agricultural Libraries Network). AGLINET libraries offer to its partner libraries free-of-charge or low cost interlibrary loan and photocopy services.

DEVELOPMENT WORK

In 2002 when the Library for the first time had a possibility to perform only its main duties, the Library evaluated its potential and carried out inner evaluations to state its future developments. In the first place the development tasks for the present year were specified. The potential and functioning of the Library of EAU was analyzed and the strategic development plan of the Library for the next years was prepared.
Attention was paid to the development of client service. The evaluation of the readers composition was

conducted to estimate availability of information and the correspondence between the service and demand for information.
More attention was paid to the formation and use of library collection, specifically the evaluation process of the use of scientific periodicals, for this purpose a project was initiated.

In the field of info-technology the reconstruction of the local area network came to an end and the formation of additional readers' workplaces. All the PC-s, the ones of staff and readers, have access to Internet. The homepage of the Library was completed.

COOPERATION

In connection with the operation of INNOPAC, the cooperation between the ELNET consortium libraries has tightened. In addition to coordinating acquisitions procedure, emphasis has been laid on cooperation in area of cataloguing and bibliograhizing.

To solve the common problems, the working groups have been created by the Association of Estonian Librarians and the ELNET Consortium. The staff members of the Library of Estonian Agricultural University also participate in these working groups.

The Library of Estonian Agricultural University is a member of AGLINET (Agricultural Libraries Network). AGLINET as an international cooperative network of agricultural libraries was formed in 1971 in the framework of IAALD (International Association of Agricultural Librarians and Documentalists) and today it has 49 members. The Library of Estonian Agricultural University is a member of AGLINET since 1992. Regular cooperation has been going on since 1995. The major AGLINET partners of the Library of EAU are agricultural libraries from the USA, the Netherlands, Germany, Canada and the Scandinavian countries.

Cooperation with the FAO (the Food and Agriculture Organization of the United Nations) continued. The Library of EAU is a national AGRIS/CARIS Center of the FAO in Estonia.
The Library makes input into the AGRIS (International Information System for the Agricultural Sciences and Technology) database. In return our library receives AGRIS database on CD-ROM.

Estonian Agricultural University is a member of NOVA-BA (Nordic Veterinary and Agricultural University) which aim is to promote cooperation between the Nordic and Baltic agricultural universities and higher institutions of veterinary medicine.

CONCLUSION

The year 2002 was for the Library a year for regulating the collections and work of library and for setting tasks for the future. The re-cataloguing projects developed well. The development plan of the Library was concluded. The systematic acquisition procedure of contemporary scientific and study literature was commenced.

Appendix VIII

A. FOREIGN PERIODICALS RECEIVED IN 2003

Nr	Title	ISSN	Country	US$	EEK	
1	Acta Horticulturae	0567-7572	BE	79,93	1358,81	
2	Agra Focus	1430-1431	GE	340,20	5783,40	
4	Agricultural Finance Review	0002-1466	US	30,00	510,00	
6	Agriculture, Ecosystems & Enviroment	0167-8809	NE	1503,11	25552,87	Elsevier
7	Agronomy Journal	0002-1962	US	246,00	4182,00	free ONLINE
8	Biology and Fertility of Soils	0178-2762	GE	2387,04	40579,68	
9	Biosystems Engineering		EN	803,15	13653,55	
10	Building Enviroment	0360-1323	EN	1275,01	21675,17	Elsevier
11	Dairy Food & Enviromental Sanitation	1043-3546	US	223,00	3791,00	
12	Deutsche Milchwirtschaft	0012-0480	GE	263,19	4474,23	
13	Deutsche Gartenbau	0341-2091	GE	183,65	3122,05	
14	Enviromental Management	0364-152x	GE	875,70	14886,90	Springer
15	Equine Veternary Education	0957-7734	EN	145,89	2480,13	
16	Equine Veternary Journal	0425-1644	EN	138,37	2352,29	
17	European Planning Studies	0965-4313	EN	935,00	15895,00	
18	Fleischwirtschaft	0015-363x	GE	237,95	4045,15	
20	Forest Science	0015-749x	US	290,00	4930,00	
21	Forestry	0015-752x	EN	323,36	5497,12	free ONLINE
22	Helmintological Abstracts	0957-6789	EN	849,77	14446,09	
23	In Practice	0263-841x	EN	133,86	2275,62	
24	Journal of Animal Science	0021-8812	US	400,00	6800,00	free ONLINE
25	Journal of Dairy Science	0022-0302	US	425,00	7225,00	free ONLINE
26	Journal of Enviromental Quality	0047-2425	US	234,00	3978,00	
27	Journal of Food Protection	0362-028x	US	338,00	5746,00	
28	Landscape Ecology	0921-2973	NE	498,11	8467,87	Kluwer
31	Materialprüfung	0025-5300	GE	284,05	4828,85	
32	Mein Schöner Garten	0178-1308	GE	48,66	827,22	
33	Nutrient Cycling in Agroecosystems	1385-1314	NE	1070,31	18195,27	Kluwer
34	PC Magazine	0888-8507	US	76,00	1292,00	
36	Topos	0942-752x	GE	112,88	1918,96	
37	Trends in Parasitology	1471-4922	EN	807,11	13720,87	Elsevier
38	Transactions of the ASAE	0001-2351	US	293,00	4981,00	
39	Veterinary Record	0042-4900	EN	270,72	4602,24	
40	Veterinary Research	0928-4249	FR	384,06	6529,02	
41	Woods Science & Technology	0043-7719	GE	881,40	14983,80	free ONLINE
42	World of Ingredients	1566-6611	NE	105,00	1785,00	C&S Publishers

				17492,48	**297372,16**

Nr	Nimetus	ISSN	Kirjastus	US$	EEK
3	Agricultural Economics	0169-5150	Elsevier	552,70	9395,90
5	Agricultural Water Management	0378-3774	Elsevier	1152,19	19587,23
6	Agriculture Ecosystems ja Enviroment	0167-8809	Elsevier	1503,11	25552,87
19	Forest Ecology ja Management	0378-1127	Elsevier	2585,12	43947,04
29	Landscape and Urban Planning	0169-2046	Elsevier	1170,71	19902,07
30	Livestock Production Science	0301-6226	Elsevier	1196,06	20333,02
35	Theriogenology	0093-691x	Elsevier	851,96	14483,32
				9011,85	153201,45

B. FOREIGN PERIODICALS RECEIVED IN 2004 *

1. Agra Focus
2. Agricultural Finance Review
3 Agriculture, Ecosystems & Environment
4. Agronomy Journal
5 Biology and Fertility of Soils
6. Compendium on Continuing Education
7. Deutsche Milchwirtschaft
8. Deutsche Gartenbau
9. Environmental Management
10. Equine Veterinary Education
11. Fleischwirtschaft
12. Forest Science
13. Forestry
14. Grass and Forage Science
15. Helminthological Abstracts
16. In Practice
17. Journal of Animal Science
18. Journal of Dairy Science
19. Journal of Food Protection
20. Materialprüfung
21. Mein Schöner Garten
22. Topos
23. Transactions of the ASAE
24. Trends in Parasitology
25. Veterinary Research
26. Veterinary Record
27. Veterinary Clinics of North America
28. Woods Science & Technology

* Number of foreign periodicals received is reduced because availability of electronical versions

Appendix IX

List of library databases

1. Full text online databases

- **Cambridge University Press** *http:// www.journals.cambridge.org*
  (Campuswide access)

- **EBSCO databasess** *http://search.epnet.com*
  EBSCO Academic Search Premier
  EBSCO Business Source Premier
  EBSCO Online Citations
  MEDLINE
  PsycInfo
  Health Source: Nursing/Academic Edition
  Health Source: Consumer Edition
  MasterFILE Premier
  Business Wire News
  Newspaper Source
  (Campuswide and at-home access)

- **Kluwer Online** *http://journals.kluweronline.com*
  (Campuswide access)

- **ScienceDirect** *http://www.sciencedirect.com*
  (Campuswide access)

- **SpringerLink** *http://link,springer.de*
  (Campuswide access)

- **Synergy** *http://www.blackwell-synergy.com*
  (Campuswide and at-home access)

2. Bibliographic online databases

- **CAB Abstracts** *http://search.epnet.com*
  (Campuswide and at-home access)

- **AGRICOLA** *http://www.nal.usda.gov*
  (free access)

- **AGRIS** *http://www.fao.org/agris*
  (free access)

3. CD-ROM databases in the Library of EAU

- **AGRICOLA (AGRICultural OnLine Access) / Bibliographic database / U.S. Dept. of Agriculture**
  Content: online catalogue of the National Agricultural Library of the US
  Time coverage: 1979 - June 1998
  Place: reading room

- **AGRIS (International Information System for the Agricultural Sciences and Technology / Bibliographic database /FAO**
  Content: 3 mil. records in the area of agriculture
  Time coverage: 1975 – Sept. 2003
  Place: reading room

- **Current Contents CD-ROM Version / Bibliographic database /**
  Institute for Scientific Information. - USA. - CD-ROM.
  Agriculture, Biology & Environmental Sciences edition
  Content: scientific database with searchable author abstracts, offering a 52-week rolling file
  Time coverage: 1996-1999; 2001-2003
  Place: reading room

- **Food and Human Nutrition in AGRIS / Bibliographic database / FAO**
  Content: records in the area of food and human nutrition extracted from the AGRIS database
  Time coverage: 1975 – Dec. 2003
  Place: reading room

4. CD- ROM database at Faculty of Veterinary Medicine, EAU

ISI Focus On: Veterinary Science & Medicine

Diskette database updated monthly and cumulation with data from March 1993 on CD-ROM. Available for
academic staff of Faculty of Veterinary Medicine. Ordered directly by establishment.

Appendix X

New books and manuals of veterinary medicine obtained within last three years

PHARE PROJECT (MOSTLY FOOD HYGINE):

1. A Colour Atlas of Meat & Poultry Insp 1 tk. ISBN: 0723407088;
2. Advanced Organic Chemistry 1 tk. ISBN: 0306462435; Autor: Carey, Francis A.; Kirjastus: Plenum Pub.Co.
3. Advanced Organic Chemistry Reaction and synthesis Part B 1 tk. ISBN: 0306462451; Autor: Sundberg, Richard J.; Carey, Francis A.; Kirjastus: Kluwer Academic Publishers Group
4. Anatomy and Physiology Laboratory Textbook Essentials Version 1 tk. ISBN: 0072323639; Autor: Benson, Harold J.; Talaro, Arthur; Talaro, Kathlee; Kirjastus: McGraw-Hill Education – Europe
5. Biochemistry and Molecular Biology 2 tk. ISBN: 0198700458; Autor: Elliott; Kirjastus: Oxford University Press
6. Campylobacter 1 tk. ISBN: 1555811655; Autor: Nachamkin, Irving; Blaser, Martin J.; Kirjastus: American Society of Microbiology (ASM)
7. Color Textbook of Histology 1 tk. ISBN: 072167481X; Kirjastus: Saunders
   Staadium: **Viibib** - 16.09.2003 ei ole veel ilmunud
8. Current Practice of Gas Chromatography-mass Spectrometry 1 tk. ISBN: 0824704738; Autor: Niessen, W M A; Kirjastus: Dekker
9. Diagnostic histopathology of tumors 1 tk. ISBN: 0443079927; Autor: Fletcher, Christopher D.M.; Kirjastus: Harcourt
10. Drug Residues in Foods Pharmacology, Food Safety, and Analysis (US Edition) 1 tk. ISBN: 0824789598; Autor: Botsoglou, Nikolaos A.; Fletouris, Dimitrios J.; Kirjastus: Marcel Dekker Inc
11. Electrophoresis in Practice 1 tk. ISBN: 3527303006; Autor: Westermeier, R.; Kirjastus: John Wiley and Sons Ltd
12. Encyclopedia of Dairy Sciences 1 tk. ISBN: 0122272358; Autor: Roginski;
13. Enzyme Immunoassays From Concept to Product Development 1 tk. ISBN: 0412056011; Autor: Deshpande, S.S.; Kirjastus: Kluwer Academic Publishers Group
14. Experiments in Molecular Biology Biochemical Applications 1 tk. ISBN: 0121473708; Autor: Burton, Zachary F.; Kaguni, Jon M.; Kirjastus: Harcourt Publishers Ltd, a subsidiary of
    Fenaroli's Handbook of Flavor Ingredients 1 tk. ISBN: 0849309468; Autor: Burdock, George; Kirjastus: CRC Press
15. Food Chemistry 1 tk. ISBN: 354064704X; Autor: Belitz, H. D.; Kirjastus: Springer-Verlag Telos
    Food Chemistry A Laboratory Manual 1 tk. ISBN: 0471175439; Autor: Miller, D.D.; Kirjastus: John Wiley and Sons Ltd
16. Food Toxicology 1 tk. Hind: 1 785.00 kr. ISBN: 0849327601; Autor: Helferich, William; Winter, Carl K.; Kirjastus: CRC Press
17. Foodborne Disease Handbook Bacterial pathogens Vol 1 (US Edition) 1 tk. ISBN: 0824703375; Autor: Hui, Y.H.; Pierson, Merle D.; Gorham, J. Richard; Kirjastus: Marcel Dekker Inc
18. Foodborne Disease Handbook Viruses, parasites, pathogens, and HACCP Vol 2 (US Edition) 1 tk. ISBN: 0824703383; Autor: Hui, Y.H.; Sattar, Syed A.; Murrell, K.D.; Kirjastus: Marcel Dekker Inc
19. Functional Foods Biochemical and Processing Aspects Vol 2 1 tk. ISBN: 1566769027; Autor: Shi, John X.; Mazza, G.; Maguer, Marc Le; Kirjastus: Technomic Publishing Co
20. GC/MS A Practical User's Guide 1 tk. ISBN: 0471248266; Autor: McMaster, Marvin; McMaster, Christopher; Kirjastus: John Wiley and Sons Ltd
21. Handbook of Nutraceuticals and Functional Foods 1 tk. ISBN: 0849387345; Autor: Wildman, Robert E.C.; Kirjastus: CRC Press
22. HPLC Practical and Industrial Applications 1 tk. ISBN: 0849300037; Autor: Swadesh, Joel; Swadesh, Joel K.; Kirjastus: CRC Press

23. Lehninger Principles of Biochemistry Third Edition 1 tk. ISBN: 1572599316; Autor: Nelsom; Kirjastus: Worth
24. Manual of Small Animal Ophthalmology 1 tk. ISBN: 0905214218;
25. Modern Food Microbiology 1 tk. ISBN: 083421671X; Autor: Jay, James M.; Kirjastus: Kluwer Academic Publishers Group Nutritional Biochemistry 1 tk. ISBN: 0121348369;
26. Pharmacognosy, Phytochemistrty, Medicinal Plants 1 tk. ISBN: 1898298637; Autor: Bruneton, Jean; Kirjastus: Intercept Scientific, Medical and Techni
27. Physiological and Clinical Anatomy of the Domestic Mammals Central nervous system Vol 1 1 tk. ISBN: 0632053852; Autor: King; Kirjastus: Blackwell Science Ltd
28. Phytochemicals in Nutrition and Health (US Edition) 1 tk. ISBN: 1587160838; Autor: Meskin, Mark S; Meskin, Mark S.; Bidlack, Wayne R.; Kirjastus: Technomic Publishing Co
29. Practical HPLC Method Development 1 tk. ISBN: 047100703X; Autor: Snyder, L.; Kirkland, J. Rockland; Glajch, A.; Kirjastus: John Wiley and Sons Ltd
30. Rapid Food Analysis and Hygiene Monitoring Kits, Instruments and Systems 1 tk. ISBN: 3540632530; Autor: Raugel, P.-J.; Kirjastus: Springer-Verlag Berlin and Heidelberg Gm
31. The Colour Atlas of Pathology 1 tk. ISBN: 0815122489; Autor: Damjanov;
32. Toxicology 1 tk. ISBN: 0683066641;
33. Veterinary Toxicology 1 tk. ISBN: 0750672404; Autor: Roder; Kirjastus: Butterworth Heinemann
34. WIE Principles of Genetics 1 tk. ISBN: 047138710X;

Literature acquired in 2002 (Library budget)

Jrk	Pealkiri, autor, kirjastus	Eks. arv
1	Textbook of Veterinary Anatomy; Dyce, K M, etc., Cloth, *1997*	1
2	Miller's Guide to the Dissection of the Dog; Evans, Howard E, Cloth, *2000*	2
3	Veterinary Microbiology and Microbial Diseases P.J.Quinn, B.K Markey, M.E. Carter, W.J. Donnelly F.C Leonard Blackwell Science	2
4	BSAVA Manual of Canine and Feline Infectious Diseases Edited by Ian Ramsey and Bryn Tennant, British Small Animal Veterinary Associat	1
5	Handbook of Veterinary Neurology	2
6	Veterinary Neuropathology	1
7	Handbook Behavioural Problems of the Dog and Cat	1
8	Pain Management in Animals	1
9	Learning Veterinary Terminology	1
10	Arthurs Veterinary Reproduction and Obstetrics 8E; by Noakes , June 2001, Hardback/cloth, W.B. Saunders	1
11	**C**anine & Feline Theriogenology; by Johnston , **March 2001**, Hardback/cloth, W.B. Saunders	2
12	Atlas of Veterinary Hematology by Harvey et al., 2001, W.B.Saunders	1
13	Theory and Practice of Histologiacal Techniques (5e) by Bancroft et al, 2001, Churchill Livingstone	1
14	Picture tests in Histology by Young, 2001, Churchill, Livingstone	1
15	Color Atlas of Normal Cytology by Herzberg, 1999, Churchill Livingstone	1
16	Laboratory profiles of Small Animal Diseases: A Guide to laboratory Diagnosis, Ch. Sodikoff, Mosby Publishing, 3rd edition, 2000	2
17	Small Animal Clinical Diagnosis by Laboratory Methods, MD Willard, H Tvedten, GH Turnwald (eds), Harcourt Brace & Co, 1999	1
18	Textbook of Veterinary Physiology; by James G. Cunningham , *Pub. Date:* 31 Jan 2002 , *Publisher:* WB Saunders ; *Binding:* Hardback Edition: 3rd Ed	2
19	Dukes' Physiology of Domestic Animals; by Henry Hugh Dukes Editor: Melvin J. Swenson William O. Reece , *Pub. Date:* 1993 ; *Publisher:* Cornell University Press ; *Binding:* Hardback Edition: 11th Ed	1
20	Reproduction in Farm Animals; Hafez, E S E, Cloth, *2000* Lippincott Williams & Wilkins	2
21	The Immunoassey Handbook, 2nd edition, D.Wild, editor, 2001	1
22	D.Slatter. Fundamentals of veterinary ophthalmology.- Saunders, 2001.	1
23	Gelatt, Kirk V., Paperback. Color Atlas of Veterinary Ophthalmology. 2001	1

24	D.Fowler. Manual of Canine and Feline Wound Management and Reconstruction.	1
25	D.E.Thrall. Textbook of Veterinary Diagnostic Radiology. Saunders, 2002	1
26	David A.Grossley. Manual of Small Animal Dentistry. 1995.	1
27	PAPICH. Saunders Handbook of Veterinary Drugs. Saunders, Apr. 02.	2
28	SPEIRS. Clinical Examination of Horses. Saunders, Feb. 97.	2
29	BLOWEY. Diseases and Disorders of Cattle 2nd Edition. Mosby, Nov. 02.	2
30	RADOSTITS. Veterinary Medicine 9th Edition. Saunders, May 00.	2
31	RADOSTITS. Herd Health, 3rd Edition. Saunders, Sep. 01.	2
32	RADOSTITS ET AL. Veterinary Clinical Examination and Diagnosis. Saunders, Sep.00.	2
33	BRYETTE. Small Animal Clinical Endocrinology. Butterworth Heinemann, sept 02.	1
34	BUERGELT. Color Atlas of Reproductive Pathology of Domestic Animals. Mosby, feb. 97	1
35	ROOT KUSTRITZ. Small Animal Theriogenology. Butterworth Heinemann, apr.03	2
36	D.SLAUSON, BJ COOPER. Mechanism of Disease. A Textbook of Comparative General Pathology, Mosby, aug.2001	2
37	NF CHEVILLE. Introduction to Veterinary Pathology, Iowa State University Press, dec 2000.	2
38	TC JONES, RD HUNT, NW KING. Veterinary Pathology. Lippincott Williams&Wilkins, dec 1997	1
39	Dyce, K M, etc. Textbook of Veterinary Anatomy. 3rd Edition.	2
40	Colour Atlas of Veterinary Anatomy. Vol 3: The Dog an Cat.	2
41	BSAVA Manual of Small Animal Ophthalmology	1
41	BLANCHARD Manual of Equine Reproduction, 2nd Edition , November 2002, Mosby	1

Literature acquired in 2003 (Library budget)

1. The immunoassay handbook/edited by David Wild. 2nd ed. London; Basingstoke: Nature Publishing Group, 2001.
2. BSAVA manual of canine and feline wound management and reconstruction/edited by David Fowler, J.M.Williams. Cheltenham: British Small Animal Association, 1999.
3. Dukes' physiology of domestic animals/edited by Melvin J. Swenson, William O. Reece. 11th ed. Ithaca; London: Cornell University, 1993.
4. BSAVA manual of small animal ophthalmology/edited by Simon Petersen-Jones, Sheila Crispin. 2nd ed. Gloucester: BSAVA, 2002.
5. BSAVA manual of small animal dentistry/edited by David A. Crossley, Susanna Penman. 2nd ed. Gloucestershire: British Small Animal Veterinary Association, 1995.
6. Reproduction in farm animals/edited by B. Hafez, E.S.E. Hafez. 7th ed. Philadelphia; Baltimore [etc.]:Lippincott Williams & Wilkins, 2000.
7. Veterinary microbiology and microbial diseases/P.J. Quinn …[et al.]. Oxford: Blackwell Science, 2002.
8. Lehma udara kirurgilised ja naha haigused/Kaljo Reidla. Tartu: Eesti Põllumajandusülikool, 2002 (Tartu: Tartumaa Trükikoda).
9. Jäsemehaigused hobusel ja veisel/Kaljo Reidla. Tartu: Eesti Põllumajandusülikool, 2001 (Tartu: Tartumaa Trükikoda).
10. Arthur's veterinary reproduction and obstetrics/ed. by David E. Noakes, Timothy J. Parkinson…[et al.]: with foreword by Geoffrey H. Arthur. 8th ed. London; Philadelphia [etc.]: W.B. Saunders Company, 2001.
11. Pain management in animals/edited by Paul A. Flecknell, Avril Waterman-Pearson. London; Edinburgh [etc.]: W.B. Saunders Company, 2000.
12. Atlas of veterinary hematology: blood and bone marrow of domestic animals/John W. Harvey. Philadephia; London [etc.]: W.B. Saunders Company, 2001.
13. Canine and feline theriogeneology/Shirley D. Johnston, Margaret V. Root Kustritz, Patricia N.S. Olson. Philadelphia; London [etc.]: W.B. Saunders Company, 2001.
14. Color atlas of normal cytology/Arlene J. Herzberg, Dominic S.Raso, Jan F. Silverman. New York: Churchill Livingstone, 1999.
15. Fundamentals of veterinary ophtalmology/Douglas Slatter. 3rd ed. Philadelphia; London [etc.]: W.B. Saunders Company, 2001.
16. Handbook of behaviour problems of the dog and cat/Gary M. Landsberg, Wayne Hunthausen, Lowell Ackerman. Oxford: Butterworth-Heinemann, 2000.

17. Handbook of veterinary neurology/John E. Oliver, Michael D. Lorenz, Joe N. Kornegay. 3rd ed. Philadelphia; London [etc.]: W.B. Saunders Company, 1997.
18. Laboratory profiles of small animal diseases: a guide to laboratory diagnosis/Charles H. Sodikoff. 3rd ed. St. Louis; London [etc.]: Mosby, 2001.
19. Learning veterinary terminology/Douglas F. McBride. 2nd ed. St. Louis; London [etc.]: Mosby, 2002.
20. Miller's guide to the dissection of the dog/Howard E. Evans, Alexander de Lahunta. Revised print. Philadelphia; London; Toronto: W.B. Saunders Company, 1971.
21. Picture tests in histology/Barbara Young. Edinburgh; London [etc.]; Churchill Livingstone, 2001.
22. Small animal clinical diagnosis by laboratory methods/Michael D. Willard…[et al.]. 3rd.ed. Philadelphia; London [etc.]: W.B. Saunders Company, 1999.
23. Textbook of veterinary anatomy/Keith M. Dyce…[et al.]. 3rd ed. Philadelphia; London [etc.]: Saunders, 2002.
24. Textbook of veterinary diagnostic radiology/Donald E. Thrall. 4th ed. Philadelphia; London [etc.]: W.B. Saunders Company, 2002.
25. Veterinary neuropathology/Brian A. Summers…[et al.]. St. Louis; Baltimore[etc.]: Mosby, 1995.
26. Clinical examination of horses/Victor C. Speirs; with contributions by: Robert H. Wrigley. Philadelphia [etc.]: Saunders, 1997.
27. Color atlas of veterinary anatomy. Volume 3, The dog & cat/Stanley H. Done, Peter C. Groody…[et al.]. London [etc.]: Mosby, 2002.
28. Color atlas of reproductive pathology of domestic animals/Claus D. Buergelt. St. Louis [etc.]: Mosby, 1997.
29. Herd health: food animal production medicine/Otto M. Radostits. 3rd ed. Philadelphia [etc.]: Saunders, 2001.
30. Manual of equine reproduction/Terry L. Blanchard, Dickson D. Varner…[et al.]. 2nd ed. St. Louis [etc.]: Mosby, 2003.
31. Mechanisms of disease/David O. Slauson...[et al.]. St. Louis: Mosby, 2002.
32. Textbook of veterinary physiology/Cunningham, J.G. 3rd ed. Philadelphia, London: W. B. Saunders Company, 2002.
33. Veterinary clinical examination and diagnosis/edited by O.M. Radostits. London: Saunders Company, 2000.
34. Encyclopedia of dairy sciences. Vol. 1, A-C, Vol. 2, D-G; Vol. 3, H-M; Vol. 4, N-Z./ed. by H. Roginsky, J.W. Fuquay, P.F. Fox. London; San Diego: Academic Press, 2002.
35. Manual of equine dermatology/Reginald R.R. Pascoe. London: Saunders, 1999.
36. Manual of equine gastroenterology/ed. by T. Mair…[et al.]. London: Saunders, 2002.
37. Meat hygiene/J.F. Gracey. London: Saunders, 1999.
38. Poultry disease/F. Jordan …[et al.]. 5th ed. London: Saunders, 2001.
39. Wildlife ecology and management/E. Bolen. New Yersey: Prentice Hall, 1999.
40. Veterinary pathology/T.C. Jones. 6th ed. Philadelphia: Lippincott Williams & Wilkins, 1997.
41. Antimicrobial therapy in veterinary medicine/ed. by J.F. Prescott. Iowa State University Press, 2000.
42. Theory and practice of histological techniques/ed. by J.D. Bancroft. London: Churchill Livingstone, 2002.
43. Meditsiiniline biokeemia I/M. Zilmer…[et al.]. Tartu, 1996.
44. Meditsiiniline Biokeemia II/M. Zilmer…[et al]. Tartu, 1999.
45. The biochemistry of silage/Peter McDonald, Nancy Henderson, Shirley Heron. 2nd ed. Marlow: Chalcombe, 1991.
46. Feeding the dairy cow/A.T. Chamberlain, J.M. Wilkinson. Welton: Chalcombe, 2002.
47. Progress in pig science/J. Wiseman, M.A. Varley, J.P. Chadwick. Nottingham: Nottingham University Press, 1998.
48. Animal welfare and meat science/Neville G. Gregory. Wallingford: CABI Publishing, 1998.
49. Behaviour of the horse/Andrew F. Fraser. Wallingford: CABI Publishing, 2001.
50. Carp and pond fish culture/Laszlo Horvath, Gizella Tamas, Chris Seagrave. 2nd ed. Oxford: Fishing News Books, 2002.
51. The ethology of domestic animals: an introductory text/edited by Per Jensen. Wallingford: CABI Publishing, 2002.

52. Farm animal behaviour and welfare/A.F. Fraser, D.M. Broom. 3rd ed. Wallingford: CABI Publishing, 1997.
53. The genetics of the dog/edited by A. Ruvinsky, J. Sampson. Wallingford: CABI Publishing, 2001.
54. The genetics of the horse/edited by A.T: Bowling, A. Ruvinsky. Wallingford: CABI Publishing, 2000.
55. The genetic of the pig/ed. by M.F. Rothschild. Wallingford: CABI Publishing, 1998.
56. Intellectual property rights in animal breeding/edited by Max Rotschild and Scott Newman. Wallingford; New York: CABI Publishing, 2002.
57. Introduction to conservation genetics/Richard Frankham, Jonathan D. Ballou, David A. Briscoe. Cambridge: Cambridge University Press, 2002.
58. Linear models for the prediction of animal breeding values/R.A. Mrode. Wallingford: CAB International, 2000.
59. Livestock, ethics and quality of life/edited by John Hodges, In K. Han. Wallingford: CABI Publishing, 2002.
60. Manual of salmonid farming/Stephen Willoughby. Oxford [etc.]: Fishing News Books, 1999.
61. Pollution in livestock production systems/ed. by I. Ap Dewi, R.F.E. Axford…[et al.]. Wallingford: CAB International, 1994.
62. Principles of cattle production/C.J.C. Phillips. Walllingford: CABI Publishing, 2001.
63. A quantitative biology of the pig/J. Kyriazakins. Walllingford: CABI Publishing, 1999.
64. Quantitative trait loci analysis in animals/Joel Ira Weller. Walllingford: CABI Publishing, 2001.
65. Social behaviour in farm animals/edited by L.J. Keeling, H.W. Gonyou. Wallingford: Cabi Publishing, 2001.
66. Statistical genomics: linkage, mapping, and QTL analysis/Ben Hui Liu. Boca Raton (Fla.); New York: CRC Press, c1998.
67. The veterinary book for sheep farmers/David C. Henderson. Ipswich: Old Pond, 2002.
68. Introduction to veterinary pathology [CD-ROM]/Norman F. Chevile. Ames: Iowa State University Press, 2000.
69. Antimicrobial therapy in veterinary medicine/ed. by John F. Prescott, J. Desmond Baggot, Robert D. Walker. 3rd ed. Ames: Iowa State University Press, 2000.
70. Saunders handbook of veterinary drugs/Mark G. Papich. Philadelphia: Saunders, 2002.
71. Veterinary anesthesia and pain management secrets/Stephen A. Greene. Philadelphia: Hanley & Belfus, 2002.
72. Veterinary toxicology/Joseph D. Roder. Boston: Butterworth-Heinemann, 2001.
73. Equine reproductive physiology, breeding and stud management/Mina C.G. Davies Morel. 2nd ed. Wallingford: CABI Publishing, 2003.
74. The modern shepherd/Dave Brown, Sam Meadowcroft. Ipswich: Farming Press, 1996.
75. Beekeeping/E.F. Phillips. Jodphur: Agrobios, 2001.
76. Hamlyni lemmikloomade hooldamise entsüklopeedia/D. Alderton. Tallinn : Varrak, 2000.

NOTE: Literature obtained by the departments of establishment during reacent years is not listed here. More than 300 issues are located at the different departments of the faculty.

Appendix XI

Enrolment requirements

The applicants wanting to pursue full-time studies at the EAU are required to present the following documents by **June 10**:

1. a completed application form
2. a copy of their secondary school leaving certificate and the matriculation certificate admitting them to University studies in their home country
3. academic record (if applicable)
4. a copy of identification pages from their passport
5. three passport-size photos, signed on the back

Applicants are required to have completed their secondary education and must satisfy the university requirements in their own country. Applicants who intend to study at the Estonian Agricultural University are not required to take entrance examinations. All decisions regarding the admittance of international and exchange students are made by the Admissions Committee together with the Dean of the appropriate Faculty by **June 25** All applicants will receive a letter of acceptance or non-acceptance within two to three weeks.

In assessing an applicant's potential, the Committee takes into account all factors relating to the applicant's scholastic record, background, record of extracurricular activities as well as work experience and knowledge of Estonian.

Students who have been admitted to the Estonian Agricultural University should confirm their intention to study at the Estonian Agricultural University by **July 15.**

Appendix XII

List of personnel engaged in teaching veterinary medicine
April 2004

Department of Food Hygiene

1. Mati Roasto	–	Lecturer
2. Terje Tamme	–	Teaching Assistant
3. Tõnu Püssa	–	Associate Professor
4. Merike Lillenberg	–	Lab Assistant

Department of Morphology

1. Toivo Suuroja	–	Full Professor
2. Enn Ernits	–	Associate Professor
3. Elbi Lepp	–	Associate Professor
4. Esta-Laine Nahkur	–	Lecturer
5. Tõnu Järveots	–	Lecturer
6. Juhan Song	–	Teaching Assistant
7. Eha Järv	–	Lab Assistant
8. Marit Suuroja	–	Lab Assistant
9. Märt Rahi	–	0.5 Engineer
10. Tiiu Tenno	–	0.5 Worker

Department of Infectious Diseases

1. Toivo Järvis	–	Full Professor
2. Tiiu Saar	–	Associate Professor
3. Jaagup Alaots	–	Associate Professor
4. Raivo Lindjärv	–	Associate Professor
5. Arvo Viltrop	–	Associate Professor
6. Mihhail Sudakov	–	non-budgeted employee
7. Katrin Alekand	–	non-budgeted employee
8. Erika Mägi	–	non-budgeted employee
9. Illa Miller	–	non-budgeted employee
10. Heli Talvik	–	non-budgeted employee
11. Epp Klaassen	–	Lab Assistant
12. Malle Liblik	–	Lab Assistant
13. Valentina Aigro	–	Veterinary Surgeon
14. Ingrid Veske	–	0.5 Lab Assistant
15. Lehte Tamm	–	Lab Assistant
17. Salme Kangur	–	non-budgeted employee

Department of Therapy

1. Madis Aidnik	–	Full Professor
2. Vladimir Andrianov	–	Associate Professor
3. Kalle Kask	–	Full Professor
4. Mihkel Jalakas	–	Associate Professor
5. Irina Nikulnikova	–	Lecturer

6. Piret Kalmus	–	Lecturer
7. Merle Valdmann	–	Lecturer
8. Aivar Vuks	–	0.5 Teaching Assistant
9. Svetlana Mahhova	–	Lab Assistant
10. Niina Sidorova	–	Lab Assistant
11. Eha Kask	–	Lab Assistant
12. Valentina Gusselnikova	–	Lab Assistant
13. Heigi Saaremäe	–	Lab Assistant
14. Ülle Kell	–	0.1 Teaching Assistant (non-budgeted employee)
15. Margus Birkenfeldt	–	0.1 Teaching Assistant (non-budgeted employee)
16. Eino Väli	–	0.1 Teaching Assistant (non-budgeted employee)
17. Viktor Trohhalev	–	Lab Assistant-Driver
18. Kaljo Reidla	-	Professor emeritus

Clinics

1. Aivar Vuks	–	0.5 surgeon-teaching staff (Teaching Assistant)
2. Rainer Hõim	–	surgeon-teaching staff (Teaching Assistant)
3. Ants Kavak	–	_____ " _____
4. Kalmer Kalmus	–	_____ " _____
5. Uve Sachris	–	_____ " _____
6. Kadri Kääramees	–	_____ " _____
7. Kadri Janson	–	_____ " _____
8. Gerli Liivla	–	_____ " _____
9. Kristel Põder	–	_____ " _____
10. Andžela Lehtla	–	_____ " _____
11. Diana Lepsoo	–	_____ " _____
12. Katrin Alekand	–	_____ " _____
13. Ave Kupper	–	_____ " _____
14. Olev Lepiste	–	Driver
15. Laura Liblik	–	Registrar
16. Marge Pärn	–	Lab Assistant
17. Margarita Raig	–	Lab Assisitant
18. Vacant	–	Registrar
19. Vacant	–	Lab Assistant
20. Vacant	–	Lab Assistant
21. Paul F.Mõtsküla	–	non-budgeted employee (cardiology and internal diseases of small animals)
22. Ants Kuks	–	non-budgeted employee (traumatology and neurology of small animals)
23. Merle Orav	–	non-budgeted employee (internal diseases of small animals)

<u>Department of Animal Health</u>

1. Ülle Jaakma	–	0.5 Full Professor
2. Andres Aland	–	Associate Professor
3. Toomas Tiirats	–	Lecturer
4. Birgit Aasmäe	–	Lecturer
5. Merit Villemson	–	1.0 Teaching Assistant
6. Jaan Praks	-	Professor emeritus

7. Katrin Alekand	-	non-budgeted employee
8. Kadri Soidra	–	Researcher (non-budgeted employee)
9. Asta Niinemets	–	Lab Assistant
10. Endla Palm	–	Lab Assistant

Department of Reproductive Biology

1. Ülle Jaakma	–	0.5 Senior Researcher
2. Jevgeni Kurõkin	–	Researcher
3. Andres Valdmann	–	Researcher
4. Lembit Majas	–	Researcher
5. Triin Hallap	--	0.5 Researcher

Pharmacy

1. Urve Väljaots	–	Manager

Maintenance and support staff

1. Maie Vassiljeva	–	secretary of deans office
2. Leonora Sinkareva	–	head of maintenance unit
3. Aadu Kolk	-	non-budgeted – Project manager (PHARE)
4. Evald Reintam	-	non-budgeted – IT assistant (IT)
5. Helle Loorits	–	cleaner
6. Larissa Ves	–	cleaner
7. Reet Hussar	–	cleaner
8. Þanna Grigorjeva	–	cleaner
9. Olga Reemets	–	cleaner
10. Gordy Paalandi	–	cleaner
11. Riina Vahkal	–	cleaner
12. Eldur Maddi	–	technician
13. Juulius Novak	–	technician
14. Mare Kauber	–	technician
15. Eino Saar	–	janitor
16. Silvi Saimre	–	guard
17. Elga Kask	–	guard
18. Erna Zaindullina	–	guard

Department of Food Science

1. Meili Rei	–	Full Professor
2. Priit Elias	–	Associate Professor
3. Väino Poikalainen	–	Associate Professor
4. Regina Pällin	–	0.5 Associate Professor
5. Riina Soidla	–	Lecturer
6. Katrin Laikoja	–	Lecturer
7. Kaja Tikk	–	0.5 Teaching Assistant
8. Meelis Tikk	–	0.5 Teaching Assistant
9. Leno Mätas	–	Teaching Assistant
10. Tauno Mahla	–	Teaching Assistant
11. Kersti Paavel	–	Lab Assistant
12. Heli Saare	–	Lab Assistant

13. Siiri Haan – Lab Assistant
14. Kersti Haidak – Lab Assistant
15. Kersti Veske – Lab Assistant
16. Maderiin Tammik – Lab Assistant

Outside teaching
University institutes related to the teaching of veterinary students
Calculated according to FTE normatives (0.1 FTE = 60hrs)

Institute of Animal Science

1. Einar Orgmets – 0.3 Associate Professor
2. Helgi Tennisson – 0.3 Lab Assistant
3. Tanel Kaart – 0.2 Researcher
4. Alo Tänavots – 0.2 Researcher
5. Heli Pärtma – 0.4 Lab Assistant
6. Ilme Nõmmisto – 0.25 Associate Professor
7. Priit Pihlik – 0.25 Lab Assistant
8. Einar Orgmets – 0.2 Associate Professor
9. Heldur Peterson – 0.2 Associate Professor
10. Larissa Saltõkova – 0.4 Lab Assistant
11. Olav Kärt – 0.3 Full Professor
12. Silvi Tölp – 0.3 Associate Professor
13. Irina Vikman – 0.6 Lab Assistant
14. Avo Karus – 0.3 Full Professor
15. Katrin Kolk – 0.3 Associate Professor
16. Liivia Oraste – 0.6 Lab Assistant

Faculty of Rural Engineering

1. Valev Reidolf – 0.15 Associate Professor
2. Alar Seiler – 0.1 Lecturer
3. Kersti Teeäär – 0.15 Lab Assistant
4. Kaie-Reet Solba – 0.1 Lab Assistant

Faculty of Economics and Social Sciencies

1. Ülle Kerner – 0.14 Lecturer
2. Mall Erman – 0.4 Lab Assistant
3. Reet Nurmla – 0.2 Teaching Assistant
4. Kai Mitri – 0.2 Lab Assistant
5. Helvi Põder – 0.3 Lecturer
6. Ülle Kulp – 0.3 Lab Assistant

Language Centre

1. Jane Jõgi – 0.1 Lecturer
2. Eda Kool – 0.2 Lecturer
3. Liia Salum – 0.2 Lecturer

4. Ester Anslan – 0.5 Lab Assistant

Faculty of Agronomy

1. Argaadi Parol – 0.4 Associate Professor
2. Merike Kissa – 0.4 Lab Assistant
3. Merrit Noormets – 0.4 Teaching Assistant
4. Kaire Soosaar – 0.4 Lab Assistant

Appendix XIII

Phare project ES0105.02 Competence Centre of Veterinary Public Health

Training of trainers in EU universities and research centres

Grant ES01.05.02.0001

Trainer	Institution	Time	Main results
1	2	3	4
01 Väino Poikalainen, Assoc. Prof.	Helsinki University	17.03-15.04.03 30 days	The teaching program for measurement of environmental and cows physiological parameters elaborated and evaluated with positive results. Co-operation plan on designing an automated recording system of physiological parameters in dairy cows in the framework of Interrobo project financed by EU Interreg program elaborated. Exchange of undergraduate and postgraduate students planned.
02 Heli Talvik, Senior researcher	Leipzig University	06.01-07.03.03 61 days	Methods and material of teaching parasitology (lectures, practical classes, examination) to veterinary medical students acquired. Various research methods in protozoology and entomology acquired. Ca 100 preparations for teaching purposes made by different methods for use in Estonian Agricultural University.
03 Eva Lukjanov, MS student	RVAU, Copenhagen	14.01-21.01.03 7 days	Diagnostic of trichinellosis by the method of Enzyme Linked Immunosorbent Assay acquired.
04 Meili Rei, Professor	Raps&Co, Kulmbach	04.02-09.02.03 6 days	Modern technologies and recipies of various groups of meat products selected for teaching purposes in in Estonian Agricultural University. Publication of an article on meat products without additives prepared.
05 Andres Valdmann Senior researcher	Reading Univ. London Univ.	24.03-17.04.03 24 days	Analysis blood plasma samples for IGF1 in Royal Veterinary College (RVC) of London University agreed. Methods in steroid hormone (progesterone) receptor analysis and reproductive hormone (IGF1 and somatotropin) immunoanalysis studied. Automatic ovulation prediction for dairy cows and sensoring systems for monitoring livestock studied. Results of experimental work performed in Estonian Agricultural University presented in RVC

06 Mati Roasto Lecturer	Helsinki Univ,	21.02-03.03.03 11 days	Methods of detection of biogenic amines and additives in foods studied. Methods of Polymerase Chain Reaction (PCR) and Pulsed Field Gel Electrophoresis (PFGE) for microbiological investigations studied. Co-operation in genotyping of *Campylobacteria* agreed.
1	2	3	4
07 Terje Tamme Assistant	Helsinki Univ,	21.02-03.03.03 11 days	Methods of detection of biogenic amines and additives in foods studied. Methods of Polymerase Chain Reaction (PCR) and Pulsed Field Gel Electrophoresis (PFGE) for microbiological investigations studied.
08 Katrin Laikoja Lecturer	Helsinki Univ,	21.02-03.03.03 11 days	Some technical aspects of practical milk microbiology and general food safety studied. PCR and PFGE methods studied.
09 Birgit Aasmäe Lecturer	Berlin FU, Hannover TH	12-23.05.03 12 days	Teaching program and methodology and curricula of veterinary pharmacology studied. Methods of investigation of antimicrobial resistance of mastitis pathogens studied.
10 Toomas Tiirats Lecturer	Berlin FU, Hannover TH	12-23.05.03 12 days	Teaching methods and program in physiology and pathological physiology studied. Methods of electrolyte metabolism and homeodynamics and membrane transport of intestinal proteins, lipids and carbohydrates studied.
11 Piret Kalmus Lecturer	Berlin FU, Hannover TH	12-23.05.03 12 days	Methods of diagnosis of mastitis and of evaluation milk parameters in respect of clinical investigation studied. Methods of udder health evaluation by means of somatic cell counts NAGASE-test, determination of chloride concentration and identification of pathogens acquired.
12 Aivar Vuks Assistant	Helsinki Univ.	14.04-23.05.03 33 days	Method of determination of Selenium content in blood serum aquired. Fluorometrical and immunodiffusion methods for determination of BSA and NAG-ase aquired.
13 Kalle Kask Associated Professor	Utrecht Univ.	20.04-14.05.03 25 days	Experience in large animal clinic and in mobile clinic acquired. Possible cooperation in research projects and bilateral Socrates exchange of students and lecturers clarified.
14 E-L.Nahkur Lecturer	Hannover TH Wien TH	21.04-18.05.03 28 days	The plastination method for samples of anatomical preparations aquired but the method seems to be too expensive and of poor quality. A number of proposals for improvement of teaching anatomy in Estonian Agricultural University presented. Mutual contacts of institutes of anatomy established.

15 Ants Kavak PhD student, veterinary surgeon	Swedish University of Agricultural Sciences	12.10-22.11.03 42 days	Acquisition of new methods of modern breeding technology: cytometry, cell analysis, semen sexing with cell cytometry, computer assisted sperm analysis (CASA) included the methods for evaluation of different sperm motility. Discussion of perspectives of co-operation on field of equine reproduction.
16 Diivi Põdersoo PhD student	SUAS	18.05-03.06.03 17 days	*Mycoplasma hyopneumoniae* antibody detection by ELISA method acquired. Tween ELISA and monoclonal blocking studied. Isolation of the pathogen by indirect immunofluorescense (IF) method
17 Rainer Hõim Assistant	Helsinki Univ.	10-15.11.03 6 days	Training in methods of anaesthesia monitoring and treatment of traumatic coxofemoral luxation.
1	2	3	4
18 Heli Talvik, Senior researcher	Leipzig University	12.10-04.12.03 54 days	Acquisition of molecularbiological methods of investigation in veterinary parasitology (unicellular parasites). Identification of *Cryptosporidia* and *Eimeria* pathogenic species and strains.
19 Tõnu Järveots Lecturer	Trinity College Dublin Alfort Nat.Vet. School	10-13.09.03 14-26.09.03 17 days	Participation in the 21st Annual Meeting of European Society of Veterinary Pathology in Dublin. Development of the curriculum on veterinary pathology and of the compact course on veterinary pathology in National Veterinary School Alfort together with prof. F.Crespeau
20 Merit Villemson Veterinary surgeon, PhD student	London Univ. College of Vet. Medicine	02-30.11.03 28 days	Acquisition of methods in diagnostic ultrasonography, balloon valvuloplasty, thoracothomy with pericardiectomy, computer tomography and magnetic resonance imaging.
21 Arvo Viltrop Assoc. Professor	Freie Univ. Berlin	7-18.09.03 12 days	Elaboration of curriculum on veterinary epidemiology for undergraduate veterinary medical students, development of relevant study aids. Compilation of lists of compulsory literature and relevant software.
22 Mati Roasto Lecturer	Freie Univ. Berlin	24.08-21.09.03 29 days	Elaboration of the curriculum of food hygiene and meat inspection in co-operation with professors Goetz Hildebradt and Reinhard Fries
23 Terje Tamme Assistant	Freie Univ. Berlin	07-21.09.03 15 days	Elaboration of the curriculum of meat inspection in co-operation with professor Reinhard Fries
24 Katrin Laikoja Lecturer	Freie Univ. Berlin	24.08-07.09.03 15 days	Training in modern food microbiology and food safety with emphasis to milk hygiene under supervision of professor Goetz Hildebradt

25 Ülle Jaakma Professor	Royal Veterinary and Agricultural University, Copenhagen	03-11.11.03 7 days	Acquisition of modern methods in cell research (immunochemistry), *in vitro* maturation and fertilization of bovine oocytes, *in vitro* culture of bovine zygotes, fixation and staining of oocytes and embryos with fluorescent dyes, multiphoton confocal microscopy of oocytes and embryos etc. Review of co-operation timetable of experiments in 2004.
26 Kalle Kask Associated Professor	Swedish University of Agricultural Sciences	01-24.10.03 25 days	Participating and presentation in the frames of International Symposium "Pregnancy, parturition, postpartum" about research projects going on in Estonia. Hormonal analyses ($PGF_{2\alpha}$) at the laboratories of Veterinary Faculty. Co-ordination of co-operation in the research project with prof. Hans Kindahl and assoc.prof. Ulf Magnusson.
27 Enn Ernits Associated Professor	Helsinki Univ.	16-29.10.03 14 days	Individual training in gross veterinary anatomy in the Faculty of Veterinary Medicine. The lectures are in English. Getting acquainted with the VIELO-project (virtual 3-dimensional imagination).
1	2	3	4
28 Ranno Viitmaa PhD Student, veterinary surgeon	Birmingham Un London Univ.	30.03-04.04.04 5 days 04-08.04.04 5 days	Participating in the 47th Annual Conference on diagnostic imaging and neurology. Participating in the interactive neurosurgery course.
29 Uve Sachris veterinary surgeon	Helsinki Univ.	01.03-01.04.04 32 days	To get trained in modern methods in equine surgery and orthopaedics.
30 Kadri Kääramees veterinary surgeon	Swedish University of Agricultural Sciences	04-25.04.04 21 days	Acqisition of modern methods in diagnostic and treatment of respiratory diseases. Training in use of novel diagnostic equipment.
31 Paul Fridtjof Mõtsküla Lecturer	London Univ. Royal Veterinary College	12-23.01.04 12 days	Practice in internal veterinary medicine, in particular in cardiology, diagnostic imaging and emergency and critical care services.
32 Mati Roasto Lecturer	Helsinki Univ.	23.01-23.02.04 31 days	Modern methods in food microbiology: PCR and PFGE. Drafting of a common research paper.

33 Gerli Liivla veterinary surgeon	Helsinki Univ.	01.03-30.04.04 61 days	Acqisition of modern methods in diagnostic cytology.
34 Ants Kavak PhD student, veterinary surgeon	Swedish University of Agricultural Sciences	11-31.01.04 22 days	Modern methods in horse reproduction: flow cytometry, semen sexing atc. Final preparation of the PhD thesis, drafting two abstracts for international conferences.
35 Kalle Kask Associated Professor	Swedish University of Agricultural Sciences	05-15.01.04 11 days	Radioimmunoassay methods in prostaglandin quantitative analysis. Analysis of samples collected in Estonia.
36 Terje Tamme Lecturer	Helsinki Univ.	07-22.02.04 16 days	Performing conventional, PCR and PFGE methods related to thermophilic Campylobacteria.
37 Andres Valdmann Senior researcher	London Univ.	21.03-08.04.04 20 days	Research methods in reproduction hormone (IGF1, Somatotropin) immunoanalysis. Testing of anti-progesterone antibody 9C11 in Radio Immuno Assay. Positive results obtained.
1	2	3	4
38 Svetlana Belova PhD student, veterinary surgeon	Edinburgh University	07-20.03.04 14 days	Training in diagnostic and treatment of animal parasitic skin diseases.
39 Garri Tralman PhD student, veterinary surgeon	Ludwig-Maximillian Univ. Munich	05-20.04.04 15 days	Acquisition of new diagnostic and treatment methods of animal joint and bone disorders and methods of teaching of veterinary under graduate students. Tibial plateau levelling osteotomy, Computer tomography and radiograpic analysis and interpretation Magnetic resonance investigation in bone and joint disorders diagnostic.

40 E-L Nahkur Lecturer	Giessen Univ.	15-24.03.04 12 days	Training in methods of teaching of animal anatomy, embryology and histology. Proposals to correct the curriculum e.g. leaving out the training of languages, complex treatment of body regions, increasing the proportion of applied anatomy, interpretation of radiographs, introducrion of optional subjects like anatomy of zoo animals and fishes. Proposals to upgrade working safety and environment protection conditions (first aid training of employees, collection and disposal of waste inspection of sewage etc.).
41 Andres Aland Associate Professor	SUAS School of Veterinary Medicine Hannover	01-05.04.04 6 days 12-29.04.04 18 days	SUAS. Participation in the seminar "The Concept of Health" in Skara, SUAS. Studying research methods in herd health management, monitoring programmes and teaching methods in animal health (hygiene) and welfare. Pre-harvest food safety and quality management in the primary production stages of the production chain for producing food of animal origin. TiHo. Training methods in "rubber boot" epidemiology and preventive veterinary medicine in pig heards. Heard and flock health improvement, quality assurance systems from "conception to cosumption" and animal welfare on the farm,during transport and at slaughter, including risk oriented meat inspection). Epidemiology study on voluntary basis. Co-operation in research methods in health monitoring programmes.
1	2	3	4

42 Nina Sidorova Veterinarian, analyst	Helsinki Univ.	19-23.04.04 5 days	Training in haematological and biochemical laboratory methods and acquisition experience in relevant methods of different laboratory tests in clinical enzymology. New laboratory method for evaluation of fibrinogen. Quality and reliability of haematological analytical methods. The Vet ABC analyser is considered to be the most advantageous machine in complex blood analysis.
43 Mati Roasto Lecturer, PhD student	Helsinki Univ.	28.03-18.04.04 22 days	Serotyping of thermophilic Campylobacter strains and acquisition the MIC-tests to resistant bacterial strains. Training in analytical methods with appartus and equipment procured by Phare project for Food Hygiene Department.Writing joint abstract and poster presentation to Conference hold in Creece in 12 to 14-th of May, 2004. Starting with writing of joint research article about prevalence of thermophilic *Campylobacter spp.* in Estonian meat products. Acquisition of PCR and PFGE methodology for beaing ready to use it in Estonia.
44 Kalle Kask Associate Professor	Swedish University of Agricultural Sciences	18-29.04.04 12 days	Radioimmunoassay methods in prostaglandin quantitative analysis. Analysis of Samples collected in Estonia.
45 Ülle Jaakma Professor	Royal Veterinary and Agricultural University, Copenhagen	24-28.05.04	Training in modern methods in cell research, particularly immuno-cytochemistry. Discussion the possibilities for further scientific co-operation in this field. Arrangement and principles of teaching of preclinical subjects were discussed. During the visit, different aspects of the following methods were studied: • Fixation and staining of oocytes and embryos with fluorescent dyes • Multiphoton confocal microscopy of oocytes and embryos.
46 Toomas Tiirats	Veterinary Faculty Lugo Faculty of Veterinary Science Budapest	25-31.05.04 31.05-06.06.04	Acquaintance with new aspects of organistion and administrative management of the clinical training in the faculty. Attending the EAEVE Education Seminar "Tracking in Veterinary Medical Education" and EAEVE General Assembly. Acquisition new methods of ^{3}H- and ^{125}RIA and ELISA methods in analysis of various hormons in blood and urine. Attendance at Middle European Buiatrics Congress. Planning co-operation project with Free University Berlin.

47 Toivo Suuroja	Veterinary Faculty Lugo	25-31.05.04	Acquaintance with new aspects of organistion and administrative management of the clinical training in the faculty. Attending the EAEVE Education Seminar "Tracking in Veterinary Medical Education" and EAEVE General Assembly.
1	2	3	4
48 Heli Talvik Senior researcher	Leipzig University	01-22.06.04	Participating in summer school of parasitological diagnostic. Acquisition of molecular-biological methods (detection of parasite DNA) and copro-antigene ELISA methods. Drafting co-operation project and joint research article.
49 Kalle Kask Assoc. Prof.	Swedish University of Agricultural Sciences	19-30.06.04	Hormonal analyses of smples collected in Estonia. Drafting of the co-operation research project. Invitation of speakers from SLU to NOVA BA course in bovine reproduction.
50 Arvo Viltrop Assoc. Prof.	Les Leches, Dordogne	05-18.09.04	*Expected results:* Attendance in the Animal agriculture and food safety risk analysis course.
51 Meelis Tikk Lecturer	Helsinki University	Sept.-Oct.04	*Expected results*: novel design and hygiene requirements on equipment for meat processing
52 Tõnu Järveots Lecturer	University of Warmia and Mazury, Olsztyn,	15-19.09.04	*Expected results*: Attendance in 22nd Annual Meeting of European Society of Veterinary Pathology (15 to 19 September 2004)
Priit Elias Associate Professor	Helsinki University	Aug.-Sept.04	*Expected results:* microbiology of dairy products, enzymatic processes in dairy industry. Training in methods with fermenter for continuing cultures and milk analyser, procured by Phare project.
Andzela Lehtla Veterinary surgeon, PhD student	Swedish University of Agricultural Sciences	Sept.-Oct.04	*Expected results:* new methods in use of equipment and apparatus procured by Phare project.
Tiiu Saar Associate Professor	Swedish University of Agricultural Sciences	Aug.-Sept.04	*Expected results:* Acquisition of PCR and PFGE methodology applied in virology on new procured apparatus.

Vladimir Andrianov Associate Professor	Helsinki University	Aug.-Sept.04	*Expected results:* novel methods in orthopaedy.
Merle Valdmann Assistant	Edinburgh University	Aug.-Sept.04	*Expected results:* novel methods in diagnostic cytology and histopathology.
1	2	3	4
Talvi Neeme Veterinary surgeon, PhD student	Swedish University of Agricultural Sciences	Sept.-Oct.04	*Expected results:* novel methods in diagnostic and treatment in dermatology.
Jevgeni Kurykin Senior researhcer	Utrecht University	Sept.-Oct.04	*Expected results:* novel methods in reproduction biotechnology and pathology of food animals

June 30, 2004
Aadu Kolk
Phare project adviser