

LATVIA UNIVERSITY OF AGRICULTURE



FACULTY OF VETERINARY MEDICINE

Self-evaluation Report

Jelgava, 2003

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INTRODUCTION

The self-evaluation report is prepared for the forthcoming visit by EAEVE in 17 – 23 March 2003.

On October 8 –11, 1999 a previsit took place in the Faculty of Veterinary Medicine (FVM) organized by EAEVE and supported by TAIEX. The previsiting experts were Prof. B Algers (Uppsala) and Mr. S.T. Allman (EAEVE programme coordinator).

On 2-3 March 2001 within the framework of the study programme accreditation laid down by legislation of the Republic of Latvia (LR), an international visit and the FVM study programme evaluation was made by Prof. H. Saloniemi and Prof. I. Alitalo (Helsinki University), Prof. K. T. Friedhoff, Prof. S Steinlehner (Hanover Higher School of Veterinary Medicine) and Prof. I. Muižnieks (University of Latvia)

On 29 April – 2 March 2002 the FVM was visited by TAIEX experts: F. Anthony (UK), N.A. Fag (Sweden), T. Fernandes (Portugal).

On 18 November 1918, when Latvia became an independent state, one of the first steps was foundation of its own higher school – University of Latvia (UL). Thus, on 16 September 1919 the FVM was also founded at the UL in Riga. During the period of 1920 –1940 the FVM study programmes were based on the programmes of the veterinary higher school in Tartu / Dorpat, Vienna, Leipzig and others. During the years of Latvia's independence the leading academic staff regularly continued education in other European higher schools.

On 17 June 1940 Latvia was occupied by the Red Army and Latvia lost its independence. In 1944 the FVM was included into the Latvian Academy of Agriculture (at present Latvia University of Agriculture). Since 1964 the FVM is housed in Jelgava, the present site. There are 9 faculties at the Latvian University of Agriculture totally (see Annex 2-1).

During the period of 1945 – 1991 Latvia was isolated from the European history and culture by the iron curtain. Throughout that time, veterinary medical study programmes in all the Soviet Union were centralized and their content was strictly told by Moscow, it determined the number and volume of the subjects to be taught as well.

In 1991, after Latvian Independence Restoration, all documents regulating the activity of higher education and scientific institutions started to change essentially. At present, the following rules regulate requirements of higher education and scientific research activities:

- The Law on Higher Education;
- The Law on Regulated Professions and Recognition of Professional Qualifications;
- The Law on Scientific Activities;

Unfortunately, the existing basis of legislation has been developed gradually during the years of independence (1991 – 2000), therefore, there are some contradictions between some requirements.

The main problems at the FVM which comments were made on by EAEVE previsiting experts were the following:

- study programme did not comply with the modern requirements;
- structure of the FVM with many departments that interfered with the proper use of the existing administrative opportunities;
- change of generation of the academic staff;
- lack of modern teaching facilities.

Taking into consideration the EAEVE recommendations and suggestions proposed by the previsiting experts (1999) as well as having acquainted with the structure and study programmes of the Faculty of Veterinary Medicine of Helsinki University and Hannover Veterinary Higher School, in the year 2000 the FVM structure was changed. Small departments (the average number of the academic staff was 5 –6) were merged, so new opportunities were gained to change curriculum more flexibly, to use rooms and equipment more intensively, and to administer the study process more effectively.

The Information Centre was developed at the FVM where students and staff have access to professional literature and computer network and Internet. On 13 March 2002 the Research Centre “Sigra” was included into the FVM with status of an institute on the basis of the LUA Senate Decision No 4-86. It has 49 employees. Therefore, now the FVM is organized into 4 institutes (see Annex 2-2)

In the academic year 2002/2003 the faculty academic personnel consists of 39 academic staff members, including 2 professors, 4 associate professors, 3 professors seniors, 9 docents, 8 lecturers, 9 assistants and 4 subassistants, who deliver lectures, hold seminars and practical

training. To fulfill the veterinary medicine study programme, the FVM draws on the expertise of other relevant LUA faculties. There are 77 academic staff members responsible for the professional programme of veterinary medicine, in all 63.1 positions (incl.29.95 VMF)

Guest lecturers from foreign veterinary schools regularly come to the FVM and deliver lectures and hold seminars and workshops (see Annex I-1) . Most academic staff has had professional courses both in European and American veterinary schools and colleges.

The FVM professional study programme, master study programme and doctoral study programme was approved by the LUA Senate Decision No 3 –35 of 7 June 2000 and decision No 3 – 58 of 6 December 2000. At present these are 3 levels of veterinary medicine studies: undergraduate studies (full – time studies 6 years); master studies (full – time studies 2 years; part – time studies 4 years); doctoral studies (full – time studies 3 years; part – time studies 4 years).

Scientific trends of doctoral studies are the following: morphology, physiology, internal diseases, surgery, obstetrics and gynaecology, infectious diseases and microbiology, parasitology.

At the beginning of 2002/2003 academic year there were 298 students, including 249 undergraduate students, 40 master students, 9 doctoral students.

Until the academic year 2001/2002 the course of studies was 5 years long. According to the expert recommendations of TEMPUS / PHARE project “Restructuring of higher veterinary education in Latvia” changes were made in the study programme. It was also harmonized with EU standards of teaching in regulated veterinary profession paying a special attention to increasing the volume of Food hygiene subject block. A new professional study programme was developed for 6 years of studies. In October 2000, within the TEMPUS project framework a seminar of strategic planning took place. The FVM has been working according to the new programme since the academic year 2000/2001. In 11 April 2001 the FVM undergraduate, master and doctoral study programmes were accredited by the Latvian State Accreditation Commission (decision No283 – 285)

Unfortunately, at the FVM as it is common with the most part of Latvian higher schools, process of generation change is very painful. It has a logic ground – low salaries for assistants and lectures, complicated requirements to obtain doctor’s degree (large number of

publications within a short time in internationally recognized issues referred by Latvian Council of Science, low scholarship etc.), opportunity to get a well paid position in the state veterinary service, veterinary border control, food processing enterprises etc.

However, the faculty itself should pay a special attention to this problem and seek for opportunities to draw in young people with foreign experience and interest in research and teaching. LUA administration takes care of this problem – salaries of young and perspective academic staffs are risen up to those of docents (not over 3 years).

LUA contribution and Latvian State investments in recent 3 years have facilitated to carry out reconstruction and capital repair work in part of the premises at the FVM. Subsidies allotted by TEMPUS project and the Ministry of Agriculture have assisted to purchase some equipment and apparatuses necessary for the teaching work and research activities. In total 287 026 LVL (351 796 EUR) have been spent for both reconstruction of premises and purchase of facilities during the last 3 years.

Of course, these investments are insufficient, so the FVM has prepared an investment project for next year 2003 providing for the further teaching room renovation in Block A. Applications for subsidies of the University of Agriculture are also developed for the equipment purchase in 2003. Although, the state allotted funding is unsatisfactory, the FVM spends its own intake from scientific grant contracts and rent from parts of its premises as well as international project funding.

According to requirements of the “Guide for the preparation of the self-evaluation report”, sub commissions were formed and approved by the FVM Council decision of 19 December 2001.

Every sub commission comprises the FVM academic staff, support staff, students, master and doctoral students.

Major strengths and weaknesses have been analyzed, and a plan of perspective development of the faculty is worked out.

Chapter 1 - OBJECTIVES

1. FACTUAL INFORMATION

The speciality acquired (veterinary medicine) is oriented on a high level veterinary medicine specialist training in compliance with ever growing requirements of the society and the aim of it is to train versatile educated personalities able to take the necessary decisions independently and find solutions collaborating with other specialists.

Every study programme of the FVM has its specific aims:

Higher professional education – to acquire deep theoretical knowledge, the necessary skills of professional work and the skill to work creatively, to prepare for further studies in the Master programme;

Master studies – to ensure profound acquisition of fundamental and branch theoretical courses, to train versatile educated specialists for scientific, pedagogical and management activities in the chosen speciality and to prepare for studies in the post – graduate course;

Doctoral studies – to achieve the highest theoretical level of knowledge in the chosen branch of science, to improve the skills of pedagogical work and to defend a promotion work according to the requirements.

The tasks of the higher professional study programme – to supply with theoretical knowledge and skills envisaged by the study programme for the graduates to be able to:

- promote welfare of animals, their health, productivity and suitability for work, sports, satisfaction of ethic, aesthetic and other needs of people;
- evaluate the state of health of animals, diagnose the disease, give professional and economic substantiation for purposefulness and suitability of veterinary measures, treat animals individually and in groups, carry out veterinary sanitary, preventive and other activities;
- organise and manage antiepidemiological, preventive and recovering measures in cases of contagious diseases in order to reduce morbidity of infectious diseases common for people and animals;
- promote production of high quality and safe products of animal origin;
- determine the quality of animal products and raw materials;

- organise veterinary sanitary surveillance in places of product production, processing, storage and selling;
- evaluate the animal hygiene and veterinary sanitary conditions of designing animal husbandry and veterinary units and their usage;
- do research, gain experience and observations in professional work in order to implement more efficient methods of work and experience in practice;
- develop and carry out measures for improvement of conditions in animal husbandry and environment protection;
- control production of veterinary preparations, their storage, application and be able to administer them correctly;
- record correctly veterinary work, statistics and documentation, acquire and use veterinary and medical equipment and devices.

The LR legislation envisages state accreditation of the study programmes (with international expertise of the study programmes) that the FVM obtained in 2001 – undergraduate and doctoral studies are accredited for six years, master studies for two years. Accreditation envisages yearly preparation of self – evaluation report discussed at the FVM Council and confirmed by the LUA Senate. The yearly reports are based on the target programme developed by the faculty and its structural units for the next five years. This target programme is confirmed by the FVM council. The FVM development target programme envisages the basic trends for studies and scientific work of the Faculty of Veterinary Medicine from 2002 to 2006.

In studies:

1. Introduction of the new 6 – year study programme in the process of studies and its regular co – ordination.
2. Preparation of the FVM for the planned European Association of Establishments for Veterinary Education (E. A. E. V. E.) accreditation in 2003.
3. To reduce the proportion of the social disciplines in the FVM study programme in favour of special subjects. To develop the system and contents of the elective subjects, to prepare several subjects in the English language. To elaborate and implement problem teaching methods and ways to improve independent work of students in acquisition of theoretical

and practical knowledge. To prepare teaching materials for a part of subjects in electronic form (floppy discs, CD).

4. **In the Preclinical Institute** – to prepare and develop the subjects of physiological chemistry and topographical anatomy. **In the Clinical Institute** – to direct activities to promote the work of the following four specialised subject blocks: large and small animal surgery and anaesthesia; internal medicine and oncology of large and small animals; obstetrics, gynaecology and veterinary genetics; imaging and laboratory diagnostics. **In the Institute of Food and Environmental Hygiene** – to develop and improve the food hygiene study block: food technology, foodborne diseases, food toxicology, food inspection, food marketing. It is necessary to prepare a new study subject – molecular biology.
5. By the study year 2005/2006 65% of the FVM academic staff should have a scientific degree and specialisation in compliance with the EU requirements.
6. Investment of the state budget and other finances for up – dating of premises and equipment.
7. Introduction of student rotation principle in practical teaching (2003 – 2004).
8. Publishing of teaching aids written by the academic staff.

In scientific work:

1. Active participation in bids for Grant themes and contracts ordered by the Ministry of Agriculture.

Basic trends of the scientific work of the Preclinical Institute: research in relations of digestion physiological and morphofunctional processes and regulation mechanisms of animals in postnatal ontogenesis in relation to animal feeding, welfare and quality of the obtained products; research in heart physiological processes of dogs in relation to animal breed peculiarities; osteomorphological research of animals in historical aspect (material of archeological excavations).

Basic trends of the scientific work of the Clinical Institute: unpolluted and high quality food: quality criteria and competitiveness; research in relations of plant conversion and animal biotechnological processes to produce high quality food; etiopathogenetic evaluation of the most spread non–infectious and infectious diseases of farm animals, elaboration of preventives and medicine; etiopathogenesis of cow mastitis caused by prevailing opportunistic microorganism association and elaboration of scientifically

grounded amoebocytes for their prevention; importance of some humoral immunity antibacterial factors in etiopathogenesis of mastitis; distribution of hip dysplasia and factors influencing it and diagnostic problems of some fast-growing breed dogs; periodontitis in dogs – its etiopathogenesis and relation to the general state of health; approbation of new kind composed materials in the organism of animals.

Basic trends of scientific work of the Institute of Food and Environmental Hygiene: etiology, epizootology, pathology, diagnostics, control of infectious diseases; hygiene of foodstuffs.

2. Ensurance for doctoral students to elaborate and defend promotion work.
3. Raising the level of scientific work through co-operation with Latvian as well as foreign higher educational establishments and scientific institutions.
4. To ensure defending of promotion work of doctoral students:
 - In 2002 – 5
 - In 2003 – 7
 - In 2004 – 7
 - In 2005 – 6
 - In 2006 – 6
5. To promote elaboration and defending of scientific papers of master students:
 - In 2002 – 4
 - In 2003 – 4
 - In 2004 – 5
 - In 2005 – 4
 - In 2006 – 3

Teaching staff and provision with their resources

In the nearest future (2002 – 2003) the following changes in the academic staff are planned preparing:

- a teacher of radiology (imaging diagnostics) corresponding to the EU specialisation;
- a teacher of large animal surgery corresponding to the EU specialisation;
- a qualified teacher for the subject of food hygiene – foodborne diseases (2002);
- a qualified teacher for the subject of food hygiene – food toxicology (2002);
- qualified teachers of special pathology, necropsies, epizootology and immunology (2003).

2. COMMENTS

It has been stated in self – evaluation discussions that the tasks of the higher professional programme are dynamically changing. The most potential changes are possible in relation to Latvia entering the EU and reconstruction of agricultural and processing enterprises related to it as well as to growing requirements in the sphere of food control.

At present the tasks envisaged by the FVM target programme have been partly carried out, that is also reflected in the evaluation of the strengths and weaknesses of the faculty.

Strengths of the faculty:

- co–operation with the Latvian Association of Veterinarians in reconstruction of the FVM clinics and implementation of postgraduate education programmes;
- state investments in reconstruction of the FVM rooms for student teaching;
- co–operation with the Food and Veterinary Service in implementation of continuing education courses;
- co–operation with the LUA Veterinary medicine Support Fund in education of students;
- training farm “Kalnenieki”;
- possibilities to use the LUA teaching and research farm “Vecauce” for practical training;
- possibilities to use the LUA horse breeding teaching centre “Mušķi”;
- possibilities to use the state Veterinary Medicine Centre, the Research Centre SIGRA and Jelgava region Veterinary laboratory for training students and diagnostic examinations;
- TEMPUS project – for improvement of the FVM curriculum (1999 – 2001) that made it possible to introduce up–dated teaching methods (in the framework of the project a computer class has been arranged, Internet has been connected, supply of the faculty information centre with the latest literature in veterinary medicine has been improved);
- co–operation in exchange of experience of teachers and in postgraduate education with Hannover Veterinary Higher School, Helsinki University – Faculty of Veterinary Medicine, Faculty of Veterinary Medicine of Uppsala University, Danish Royal Veterinary and Agricultural University, Norwegian School of Veterinary Science and Michigan State University (USA);
- co–operation with the Norwegian University of Agriculture FPAS (Food production, agriculture and society) in the framework of the project;

- there is a Promotion Council at the FVM that provides for obtaining of the scientific qualification (Dr. med. vet.);
- recently the number of graduate and post–graduate students at the FVM has increased.

Weaknesses of the faculty:

- material resources of the faculty have become obsolete – there is a lack of up – dated equipment for diagnostics etc.;
- insufficient clinical training of students at the faculty clinics as the FVM clinics cannot ensure adequate number of productive farm animals;
- the premises and clinics of the FVM need further reconstruction;
- insufficient state financing for provision of the study process as well as insufficiently differentiated financing for one student within the frame of the LUA;
- insufficient material resources for research;
- in relation to low salaries the change of generations of teachers has been too long;
- insufficient scientific qualification of young teachers.

3. SUGGESTIONS

Discussing the higher professional study programme in general it should be acknowledged that the programme to be accredited ensures the opportunity to acquire all–round knowledge in veterinary medicine, it gives a possibility for students to specialise in the chosen field and corresponds to reaching the stated aims. Students can develop themselves as personalities acquiring general and humanitarian subjects.

Nevertheless, further development of the programme is necessary organising elective subject blocks. Students and the Latvian Association of Veterinarians should be involved more in assessment of the study programmes. The necessary preparation work should be carried out to transfer to planning studies according to subjects as well as the number of contact hours should be reduced.

Special attention should be paid to renovation of the academic staff with highly qualified specialists, unfortunately, the number of teachers having the Doctor degree is not sufficient. Renovation of the material resources and premises at the faculty also should be continued.

Chapter 2 - ORGANISATION

1. FACTUAL INFORMATION

Details of the establishment

Name: Faculty of Veterinary Medicine of Latvian University of Agriculture

Address: K.Helmana iela 8, Jelgava, LV-3004, Latvia

Telephone: +371-30 24662

Fax: +371- 3027344

Website://www.cs.llu.lv

Title and name of head of the establishment: Dean Dr. med. vet. doc. A.Mugurēvičs

The Faculty of Veterinary Medicine is one of the nine faculties of the Latvian University of Agriculture.

Address of the Latvian University of Agriculture: Lielā iela 2, Jelgava, LV-3001, Latvia

The Latvian University of Agriculture (LUA) is the higher educational, scientific and culture establishment. The LUA is a university of national significance in the field of rural development, food and forest that ensures intellectual potential for rational and sustainable use of Latvian natural resources.

The LUA is the only educational establishment of agriculture in Latvia and its objectives are as follows:

- create intellectual potential for rural development;
- provide opportunities for obtaining many-sided higher education based on academic knowledge ensuring competitive graduates;
- promote research activities;
- provide opportunities of continuing education in the relevant fields of the LUA;
- consultative activities;
- promote culture development.

The diagram of the administrative structures showing the establishment in relation to the university and ministerial structure of which it is part and the diagram of the internal structure of the establishment see in Annexes 2-1; 2-2.

Activities of the Faculty of Veterinary Medicine (FVM) are determined by regulations approved by the LUA Senate (14/01/1998). It states that the FVM is an educational and scientific structural unit of the LUA. The FVM observes rules of the Republic of Latvia, government decisions, LUA Constitution, decisions of board institutions, orders and directions of the LUA administration, decisions of the faculty Council. The FVM finances are as part of the LUA budget. Estate and movable property of the FVM is the LUA property.

Objectives and main tasks of the FVM are:

- to provide academic education and professional competence, develop science and perfect culture in order to maintain the necessary intellectual potential and promote its development in the Republic of Latvia;
- to develop and coordinate study programmes of higher education in veterinary medicine;
- to coordinate research work of the FVM structural units, create the necessary material and technical conditions for it;
- to recruit scientific – pedagogical personnel at the faculty according to the specialisation of institutes and provide opportunities of continuing education of academic staff;
- to promote the teaching work in institutes in accordance with requirements of curriculum and study programmes.

The FVM is organised in the following structural units:

- Preclinical Institute,
- Clinical Institute,
- Institute of Food and Environmental Hygiene,
- Research Centre “Sigrā”.

The FVM and its structural units are formed and reorganised by a decision of the LUA Senate on the faculty Council proposal.

The main administrative bodies of the FVM are: the faculty Council and the Dean elected by the Council; vice-deans may be elected responsible for the teaching-methodology, research and economic work.

The FVM Council is the supreme administrative body. It is completed by all academic staff, the Dean, 3-5 student representatives.

The FVM Council may include representatives of relevant scientific establishments and well-qualified specialists. At present there is included the chairman of the Latvia Association of Veterinarians, Director of the Food and Veterinary Service of LR, Head of the Food and Veterinary Service Jelgava Department. The Dean heads the FVM Council.

The FVM Council

- -elects (secret ballot) the Dean, Council secretary, institute directors, docents, lecturers and assistants;
- -takes decisions about the teaching and research work organising issues;
- proposes academic and professional study programmes for confirmation at the LUA Senate;
- confirms research projects;
- determines the basic principles of financing and usage of material resources, their distribution among structural units of different faculties;
- confirms the basic trends of the faculty studies and scientific work, the development strategy and perspectives;
- proposes to the LAU Senate organisation, reorganisation and abolishing of the faculty teaching and scientific structural units;
- proposes candidates for election in the posts of professors and associate professors;
- decides on other items necessary for the faculty discussion which are not included in the competence of other LUA instances.

The operative activities of the FVM are headed by the Dean. All the items outside the competence of the faculty council are in the competence of the Dean, including:

- representation of the faculty at the LUA administration institutions as well as in relations with physical and legal persons;

- issuing orders in the framework of his/her competence;
- implementation of the faculty administration and economic functions;
- management of the usage of material resources and finances available to the faculty;
- co-ordination and control of fulfilment of the faculty council meeting decisions;
- control of the activities of the faculty structural units;
- distribution of responsibilities among subordinated officials.

The secretary of the council organises its work and arranges the council meeting minutes.

The FVM regulation determines also the sources of financing the faculty and their usage. The FVM finances are formed by:

- the LUA budget part allotted by the LUA Senate;
- payment for scientific research, consultations and other services at the LUA and outside it;
- finances allotted for participation at scientific and study programs and projects at the LUA and outside it;
- donations of organisations and private persons;
- the part of special finances according to the LUA determined order that is obtained for the following services: training of students paying tuition fee; income from renting premises; other self-earned finances;

Other sources of financing envisaged by the LR legislation and the LUA Constitution.

The budget part confirmed by the LUA Senate is used according to the distribution among structural units affirmed by the faculty Council.

Salaries for the staff of the FVM are decided by the Dean of the faculty within the framework of the limits determined by the assigned financing and the LR legislation.

The Council of the FVM may propose reorganisation or liquidation of the faculty. The decision on reorganisation or liquidation of the faculty is taken by the LUA Senate in the order determined by the LUA Constitution.

Every institute of the faculty also has its activity regulation confirmed by the FVM Council. The regulation states the aim of the activities of the structural unit and the main tasks: to provide students with academic and higher professional education, to develop the branch of

veterinary medicine science in corresponding sub-branches, to develop subject programmes in compliance with the general FVM study programme for specialisation of the institute, to organise and implement these programmes. To organise, co-ordinate and carry out research work at the institute, to create the necessary material and technical resources for it. To develop and implement master and doctoral study programmes in sub-branches of veterinary medicine corresponding to the specialisation of the institute. To staff the pedagogical personnel corresponding to the specialisation of the institute, to ensure possibilities for improving of the qualification of teachers and to promote international co-operation of the institute. The institute organises a council including all academic teaching staff. The work of the institute is headed by the Director. The academic and support staff is engaged after co-ordination with the Director and the Dean.

There is also a Curriculum committee (Teaching – methodological commission) operating at the Faculty of Veterinary Medicine, the committee has meetings once a month, the task of it is to review the FVM curriculum regularly and in case if it is necessary to ask the FVM council to perform corresponding changes. The committee consists of teachers delegated from every institute and of student representatives. The Head of the committee is confirmed by the FVM council.

The FVM has well developed co-operation with the Association of Latvian Veterinarians and the State Food and Veterinary Service, the Heads of these institutions are council members of the FVM.

The Dean is elected selecting from the faculty professors, associate professors or docents for five years but not more than two times by turn.

Organisation and procedure of elections of the Dean and Heads of Departments are determined by a regulation confirmed by the LUA Senate (Decision ISTK. 202): on elections of the Dean of the LUA faculty, Director of an institute or research centre.

The regulation determines that the elections of the Dean of the faculty, the Director of an institute or research centre are carried out having competition. Competition for vacant Dean or Director posts in structural units of the LUA is announced by the LUA Rector stating the order and terms of submitting applications. Elections of the Dean and Director of the institute

and research centre represented by the faculty are organised and managed by an election commission formed by the faculty council.

The candidates for the post of the Dean are nominated by the structural units of the faculty at their academic staff meetings or general meetings of the personnel, student self – government organisations as well as Promotion Councils of the corresponding profile, the LUA Board of Research and Board of Studies meetings with open voting.

Candidates for the post of the Director of an institute or research centre are nominated at the meetings of the academic staff of the structural units included in the institute or research centre (Departments, sections, laboratories) with open voting. Persons who are not working at the LUA but having adequate qualification corresponding to the profile of the institute or research centre and having experience of research and organisation work can also apply for the competition.

The candidate for the post of the Dean should be a professor or docent, the candidate for the post of the Director of an institute should have a scientific degree.

The candidates nominated by the structural units not later than 15 days before elections are registered by the corresponding election commission and the lists of the candidates are announced at the LUA, faculty or institute, or in the press at least 10 days before elections.

The election commission organises introduction of the candidates for the post of the Dean or Director to the staff of the faculty, institute or scientific centre and the commission should ensure equal possibilities for the candidates to present their activity programmes to the staff.

The regulation on elections envisages the following election procedure:

Elections of the Dean take place at the faculty council meeting, elections of the Director of an independent institute – at the institute board meetings, elections of the Director of an institute or research centre included in the structure of the faculty – at the corresponding faculty council meeting.

The meeting of the faculty council or institute board has the rights to perform the procedure of elections if at least 2/3 of the number of the council members participate.

Before voting the Head of the election commission reports to the council on the materials submitted by the candidates for the Dean or Director posts, minutes, proposals, objections etc. and the procedure of voting.

The faculty council, institute board voting openly organise a vote counting commission consisting of 3 – 5 council members, the nominated candidates cannot be in this commission.

The candidate for the post of the Dean , Director of an institute or research centre may participate at the council meeting and give the necessary explanations until the beginning of voting is announced. The candidate for the post may withdraw his/her candidature until the beginning of voting. All candidates for the post are recorded in one ballot – paper. The ballot – paper in which not more than 1 candidate for the post is left is valid. Elections of the Dean of the faculty, Directors of institutes and research centres are ballot elections, every council member receives, personally fills in and hands in the ballot – paper to the commission counting votes. Candidates for the posts do not take part in voting.

After obtaining the voting results the vote counting commission records them in the vote counting minutes and reports on the voting results to the faculty council or institute board.

The candidate who has got more than a half of the votes by the council members participating in voting is elected in the post of the faculty Dean, Director of the institute or research centre. Faculty council or institute board openly voting confirm the vote counting minutes. If none of the candidates in the first round of elections gets more than a half of the votes by the council members participating in voting, on the same day the second round of elections is organised. These two candidates that have got most of the votes in the first round take part in the second round of elections,. If any other candidate has got the same number of votes, he/she also participates in the second round of voting accordingly increasing the number of candidates. If none of the candidates gets more than a half of the votes also in the second round of voting, on the same day the third round of voting takes place voting for the candidate who has got the largest number of votes in the second round or for everybody the largest number of votes for whom the number of votes in equal parts. If also in the third round of voting none of the candidates gets more than a half of the votes, the Rector announces repeated competition in any of the national newspapers.

Vice – deans are not elected, they are appointed by the Dean of the faculty. Heads of various committees (e.g. Curriculum committee) are confirmed at the FVM council.

There is also **student self–government** operating at the FVM the representatives of which are elected in the FVM council and Curriculum committee. The task of student self–government is to develop and promote the education system of the FVM students. To defend and represent the academic, material, cultural and sports interests of the students of the FVM at the LUA and other institutions, enterprises, organisations both in Latvia and abroad. To trace social problems and needs of the FVM students, try to solve them.

2. COMMENTS and SUGGESTIONS

The Faculty of Veterinary Medicine and its structural units operate in compliance with the LUA Constitution and the LR legislation. In 2000 the structure of the faculty was changed that at present complies with the faculty own needs and also with general development trends of higher educational institutions. As the FVM is one of the faculties of the LUA it is necessary to consider the general interests of the LUA regulated by the LUA.

Firstly, it influences the financial independence of the faculty (possibility to spend all budget finances freely) as well as the ability to influence the personnel policy at the faculty. In the future higher independence for the faculty to take different decisions would be desirable.

Chapter 3 - FINANCES

1. FACTUAL INFORMATION

The Latvian University of Agriculture (LUA) receives the state funding through the Ministry of Agriculture in accordance with the regulations of the Latvian Cabinet of Ministers No 334 of 24 July 2001. When calculating the sum to be allocated, the following is taken into account: the number of undergraduate students, master students and doctoral students as well as coefficients of the study programme costs of the technical fields of education (in compliance with the classification of the Republic of Latvia, the coefficient of veterinary medicine is 3.11)

In 2001 expenditure of one student training was Ls 440.7 (EUR 740.67). For master and doctoral students, in their turn, additional coefficient of the study programme costs are stated 1.5 and 3.0 according to the calculated costs for an undergraduate student of the specialty.

Allocation of funds for the LUA faculties, including the FVM, for the current year is performed centralized by the LUA administration using for this purpose:

- state budget,
- faculty incomes.

The structure of incomes of the FVM in 2001 is shown in Table 3.2.1. According to the data, the major part of incomes is formed by the yearly state budgeted funding Ls 277723 (EUR 46593.28) or 59%, but income from the study fees is 23%.

The relatively insignificant part of income of animal care shown in the table is associated with the Veterinary Education Centre (VEC), Ltd, activities established at the FVM. It was founded in 1998 in cooperation with the Latvian Association of Veterinarians, the LUA Vet Fund, Ltd, and LUA, which holds 11 of 20 VEC capital shares (parts).

The aim of the foundation of the VEC was to draw additional funds to develop up to date base of animal veterinary care at the faculty, mainly for the undergraduate and postgraduate training. During the period of time from 1998 till 2002 more than Ls 80 000 (EUR 134453.78) have been spent for reconstruction of small and large animal clinic, but the value of the purchased apparatuses and instruments is about Ls 20 000 (EUR 33 613.45)

The Veterinary Education Centre has its own budget that is formed by:

- revenue from animal veterinary care;
- revenue from continuing education for veterinarians practitioners;
- donations of medical material and instruments;
- subsidies of the Ministry of Agriculture associated with the Danish- Latvian bilateral agreement on Veterinary Professional Education Centre in Jelgava.

It should be pointed out that the LUA deducts from the FVM income for the centralized needs:

- 30% from study fees;
- 15% from research financing;
- 50% from rent of premises.

Expenditures of the FVM in 2001 are presented in the table 3.1.1. According to the data, it can be concluded that more than 59% of the year expenditure form salaries, 27% maintenance and household expenditures, 12% training and research expenditures and only about 2% of the funds are used for the purchase of equipment.

Expenditure relating to research at the FVM in 2001 was Ls 27 723 (EUR 46 593.27) (see Table below)

	Ls	EUR
Salaries for researchers	1 8 441	30993.27
Purchase of inventory	2 248	3778.15
Other expenditure (for materials)	2 801	4707.56
Centralized deductions (15%)	4 233	7114.28
Total	27 723	46 593.27

Financial allocations by the LUA for the faculty needs are based on the number of students at the faculty, and the real financial means and necessity as well. In compliance with the resolution of the Finances Department of the LUA, to ensure the FVM operation, allocation for one student training is about 1.5 times larger than the average at the LUA.

When planning the training expenditure for the current year, the FVM administration determines autonomously only the possible rational distribution of allotted means for utilities

(b.1), for training (b.2) and purchase of equipment. Thus, in 2001 the faculty administration had in total Ls 20 387 (EUR 34263.86) or 8% of year limit. The structure of funding, including research, is determined by the LUA administration.

In the period of 1999 – 2001 Tempus project investments were also used to cover the academic staff and students training expenditure Ls 30 317 (EUR 50 953), and purchase of equipment and teaching aids Ls 52 311 (EUR 87 918).

During the recent 3 years, to improve the faculty's material (economic) base, the finances of Jelgava City Council (~ Ls 16 000, EUR 26 890.76) and those of the state of Norway (~ Ls 6000, EUR 10084.03) were used.

Changes of the state financing within a 5-year-period are shown in Table 3.2.2. Although allocation funds are considered as insufficient due to restricted state resources a positive tendency of their increase is observed.

As to the maintenance of buildings, it should be pointed out that at present the following sources of financing are used for repair of buildings, rooms, and power grid:

- annual LUA allocations for repair work;
- state investments.

At the end of each year the FVM submits a list of repairable objects to the LUA administration. The latter considers the technical condition of object and financial possibilities and allocates a certain sum for particular repairs. The recent 5 year allocations for repair are presented in Table bellow.

Allocated funds of the LUA budget for the LUA repair work

Year	Budget funds	
	Ls	EUR
1998	998	1 677.31
1999	1500	2521.00
2000	15 883	26 694.11
2001	8500	14 285.71
2002	7000	11 764.70
Total	33 881	56 942.85

Data show evidence that the LUA allocated budget fund is rather small and cannot ensure quality renovation in due time.

A solution was found to get out of the critical situation by applying for and receiving investments from the Latvian government for certain repair work. So in the year 1999, Ls 44000 (EUR 73 949.57) were allotted for the faculty power supply system repair, and in 2002 the allocated funds constituted Ls 125 000 (EUR 210084.03) for more bulky work.

The major and more perspective way how to improve the faculty economic base is to attract investments.

Every year the purchase of permanent assets and facilities is subsidized centrally, however, these subsidies in total are insignificant (up to Ls 2000. EUR 3 361.34 per year) and cannot meet the great demands for modernization of facilities. Owing to the Tempus project financing, Kleinberg's fund and subsidies of the Ministry of Agriculture; equipment was purchased for Ls 84 145 (EUR 141 420.16) during the last three years:

Tempus project (1999 –2001)	Ls 52 311	EUR 87 917.64
Kleinbergs fund (2002)	Ls 11 434	EUR 19 216.80
Ministry of Agriculture subsidies (2002)	Ls 16 400	EUR 27 563.02
Master Food Latvia (2002)	Ls 4000	EUR 6722.68

Most part of undergraduate, master and doctoral students do not pay tuition fees and they are covered by the state budget funds. Only a small number of learners is determined by the LUA centrally (in 2001 undergraduate students – 44, master students – 26), who are enrolled above the planned budgeted number of learners, and their tuition fees are partly covered:

- for undergraduate students Ls 320.00 (EUR 537.81) per year,
- for master students Ls 180.00 (EUR 302.52) per year.

The amount of tuition fees is determined centrally by the LUA administration and every year it is risen. This income is spent as follows:

- 40% - salaries of teaching personnel and support staff;
- 30% - central LUA needs;
- 30% - retained by the faculty for its development and teaching process.

2. COMMENTS

Salaries

Although 59% of the year expenditure is made for salaries, the existing low level of salaries of the academic and support staff does not facilitate recruitment of skilled personnel. Salaries of the academic staff considerably lag behind those of the clerks, and especially of veterinarians employed in the private sector. Many academic staff members apart from work at the Veterinary Education Centre (7) have a position of a veterinarian practitioner (5) outside. Improvements are expected in connection with the government decision of November 2002 on a regular salary rise in the period till 2008 to the teaching personnel on average 20% per year.

For the present, a salary rise for scientific activities is less possible due to a small budget fund allocated.

Maintenance of buildings and utilities

It is possible that expenditure of maintenance of buildings and utilities that constitutes that second largest part (27%) can become a constant amount in the future. As a positive success achieved should be mentioned an autonomous gas boiler house built in 1998 (Ls 42 000, EUR 70 588.23) as well as building work to economize power resources.

Expenditure relating to teaching and research

The existing level of teaching and research financing (12%) lags far behind the needed. It is mainly associated with the restricted opportunities of the state financing and the previous practice of allocating funds to all study programmes equally. Only in the recent years a positive change has arisen, i.e. coefficient application in planning fund distribution to different specialties (veterinary medicine 3.11)

Administration of our university and faculty is searching for ways to fill up the state financing deficit by involving in different above mentioned projects (Tempus), attracting different funds (Kleinberg's), firms, sponsors and state investments. This is considered as a perspective opportunity to raise the financial base of the faculty.

In the nearest years it is impossible to transfer completely to a paid tuition due to people's insolvency.

Expenditure related to equipment

During the period from 1990 till about 1998, only old, earlier bought and physically worn out and morally obsolete equipment was used. There were no financial resources enough to purchase new and modern equipment. We are much obliged to the generous support of the foreign faculties during that period when our faculty received a noteworthy amount of medicine, instruments and inventory as a human aid which had been used for the student training process for a long time.

We should remember the Tempus project financing and attraction of other funds for the purchase of modern equipment. The FVM has submitted a project of the state investment allocation for 2002 – 2004 where Ls 411 997 (EUR 692 431.93) are included for the purchase of different equipment. Equipment of the Veterinary Education Center, which satisfies the basic needs, is intensively used for students' clinical training.

Expenditure related to building and room repair (renovation)

Quite large financial resources are invested in this direction during the last 4 years both from state investments and the faculty's own incomes. The most remarkable should be mentioned:

- autonomous gas boiler house Ls 40 000 (EUR 67 226.89);
- large and small animal clinic Ls 80 000 (EUR 134 453.78);

- rebuilt power grid Ls 44 000 (EUR 73 949.57);
- capital repair of teaching premises Ls 125 000 (EUR 210 084.03);
- repair work done by ourselves Ls 25 000 (EUR 42 016.80).

A request is submitted for repair work in 2002 – 2004 for Ls 411 997 (EUR 692 431.93)

3. SUGGESTIONS

1. State financing should be increased next year as well as further state long-term programme allocation to modernization of the FVM building and infrastructure
2. Attraction of funds and sponsors of different foreign countries and Latvia should be continued.
3. Incomes should be increased on account of scientific activities by participating in different international projects, in particular in those associated with food quality and safety.
4. Financing to modernize teaching and research equipment should be increased; we should participate in the subsidy competitions of the Ministry of Agriculture.

Table 3.1.1 Annual expenditure
Calendar year 2001

	Ls	EUR
a. Personnel		
a.1. teaching staff	88 486	148 715.96
a.2. support staff	45102	75 801.68
a.3. research staff	18 441	30 993.27
Total for a	152 029	255 510.91
b. Operating costs		
b.1. utilities	10 938	18 383.19
b.2. expenditure relating specifically to teaching	8049	13 527.73
b.3. expenditure relating specifically to research	2801	4707.56
b.4. general operations (excluding the above)	8980	15092.43
Total for b	30 768	51 710.92
c. Equipment		
c.1. teaching	1400	2352.94
c.2. research	2248	3778.15
c.3. general (or common) equipment	-----	-----
Total for c	3648	6131.09
d. Maintenance of buildings	69 793	117 299.15
e. Total expenditure	256 238	430 652.10

Table 3.1.2 Costs of veterinary training

	Ls	EUR
1. Annual direct cost of training a students	687.67	1155.76
2. Direct cost of training for a diploma	3438.35	5778.73

Table 3.2.1 Annual revenues of the FVM**Calendar year 2001**

	Ls	EUR
a. Revenue from the State on public authorities	208 997	351 255.46
b. revenue from private bodies	-----	-----
c. revenue from research	27 723	46 593.27
d. revenue earned and retained by the establishment		
d.1. registration fees from students	10 725	18 025.21
d.2. revenue from continuing education	-----	-----
d.3. revenue from clinical activities		
d.4. revenue from diagnostic activities	6435	10 845.38
d.5. revenue from rent	2340	3932.77
e. revenue from other sources	-----	-----
f. Total revenue from all sources	256 238	430 652.10

Table 3.2.2 Changes in public funding

Year	Ls	EUR
1998	166 746	280 245.37
1999	179 214	301 200
2000	214 739	2 147 395
2001	208 997	351 255.46
2002	210 747	354 196.63

Scientific center “SIGRA” (research unit) is *de jure* independent scientific institution with own seal, symbolism and bank accounts. The finances for scientific work/ research projects center “SIGRA” gets independently. Total financial turnover per year is about 150 000 LVL. Scientific center “SIGRA” participates in a different competitions of research projects, which are announced by Latvia Research Council, Ministry of Agriculture, Ministry of Education and Science.

Chapter 4 - CURRICULUM

1. FACTUAL INFORMATION

In the Republic of Latvia there is a defined national curriculum in compliance with the order of the Ministry of Education and Science No 352 of 6 June 2001 (such an order is issued every calendar year). The curriculum is also approved by the LUA Senate. The FVM has rights to change the curriculum only to a certain extent. If there is a necessity to change more than 25%, then these changes are approved by the LUA Council of Studies and the Senate; if the changes in the curriculum do not exceed 25%, the FVM makes changes discussing them at the meeting of the faculty Teaching Methodology Committee and approving by the faculty Council. The faculty has rights to change and improve the curriculum in such a way in order to provide a proper higher academic and professional qualification. As a regulated profession “Veterinary medicine”, changing the curriculum should be subjected to the EU decisions and regulations.

At the FVM there are the following levels of training: undergraduate professional studies in veterinary medicine (full-time – 6 years, 12 semesters). Special professional studies – Master’s Degree (full-time and part-time); doctoral studies – full-time and part-time. The Ministry of Education and Science defines the volume of the study programme and all the regulating rules in the study programme as well as the order of changes.

Studies are organised in compliance with the curriculum and timetable, and taking into account the Law on Higher Education of LR, the LUA Constitution, Regulations of the Cabinet of Ministers LR, orders of the Ministry of Education and Science LR, the LUA Senate decision valid in the territory of the Republic of Latvia as well as the international co-operation forms of universities and the Regulation on studies. The official language of instructions is Latvian. Decisions of instructions may be also in a foreign language (e.g. English).

The FVM Council is in charge of the fulfilment of the study programme. The Dean and the person in charge of the programme are also responsible for it.

All institutes of the FVM participates in the fulfilment of the programme. The FVM study programme complies with the study conception of the University. The study programme is regulated by the LUA Statute of Studies.

The study programme is registered in the Register of Study Programmes considering the Regulations of the Cabinet of Ministers LR.

Within the framework of each study programme the necessary number of credit points and hours, i.e., not less than 40 CP per one academic year and the corresponding number of hours, is defined.

The curriculum (programme) followed by all undergraduate full-time students of the FVM is approved by the LUA Senate on 15 December 2000. Full-time undergraduate study programme was accredited in April 2001 for 6 years.

Control of the study programme

It should be made certain that the structure and content of the study programme guarantees education and general professional ground in veterinary medicine allowing the specialist to work in international or other veterinary institutions of any level.

The content of the study programme must be closely associated with the processes taking place in Latvia, EU and must reflect those tendencies which are urgent in Europe and the world.

It is important to achieve that the programme consolidates analytical skills in practice of veterinary medicine.

Practical knowledge and skills (qualification)

Practical skills will be formed in practical lessons during the whole term of studies, through practice in the particular study years (1 – 6 year). The study plan (curriculum) should follow the content, sequence of the study subjects, periodicity and duration of studies.

Practical work forms professional skills useful for work in the state service and private practice, small and large animal clinics, food industry, scientific research institutions, private farms as well as state and private institutions abroad (by official invitation).

The aim of practical work is to strengthen and improve students theoretical knowledge in practice obtaining various treatment procedures, methods and organisation of preventive measures.

Scientific activities of the FVM is the basis of fulfilment of the veterinary medicine programme. The Research Centre “Sigra” and the leading specialists of the Veterinary Diagnostic Centre of LR participate in a successful fulfilment of the study programme. Within the framework of the Socrates/Erasmus programme an agreement has been signed on the student exchange with the Hannover Veterinary Higher School. In the summer of 2000 a master student of the FVM did her practice in this school, but in 2001 five undergraduate students did their practice in the partner school. In the autumn 2002 an agreement was signed with the Faculty of Veterinary Medicine of the Helsinki University on studies at this university of one student of the FVM LUA.

So far the exchange of students have been unilateral.

The quality of the study programme is being periodically evaluated.

The curriculum is obligatory to all full-time undergraduate students of the FVM (see Table 4.1.1.) where the total number of hours per 6 years of studies is given – 8252 h and 275 CP.

The student study load per week is 40 hours (1h=60 min, auditorium hours 26 to 30 h a week). The total number of hours per 6 years is 8252 h (excluding elective subjects and practice). Practice and elective subjects make 1690 h + 160 h respectively.

Innovation of the study programme is possible by developing and introducing a 6-year programme. One CP of humanities and part of the basic subjects makes 16 hours, but those of the special subjects 1 CP = 24h, for instance, biophysics 1 CP = 16 h; physiology, clinical subjects – 1 CP = 24h. Decreasing the number of hours of 1 CP, students are given

opportunity to devote more time to independent studies in the LUA library and the Information Centre of the FVM using the up-to-date technologies (CD, internet etc.).

In the basic subject block of the veterinary curriculum there are 21 subjects making 86 CP; animal production block – 6 subjects 24.5 CP; clinical subject block – 15 subjects 77.5 CP; food hygiene block – 5 subjects 15.5 CP; professional subject block – 5 subjects 7.5 CP; humanities block – 7 subjects 18 CP.

The largest number of subject hours in auditorium (lectures + practical work) is in the first three study years – 2668 h. In the first study year there are 904 h + 24 h electives; in the second study year – 912 h + 3 course papers + 16 h electives; in the third year – 872 h + 3 course papers + 48 electives. The number of hours are ensured by basic subjects. Humanities acquired in the first years make 18% of 2668 h.

In the 4th, 5th and 6th study year more attention is paid to the acquisition of clinical subjects theoretical and practical skills. Students work in the clinic in small groups (subgroups) as well as individually in the Veterinary Education Centre (VEC), in the FVM hospital under supervision of a veterinarian to work out a course paper and to improve theoretical knowledge of in practice of the appropriate subject. Students practise in making diagnoses and treatment of large and small animals both in-patients and out-patients. The skills of clinical work students acquire in private clinics and farms. From the 3rd to the 6th year of studies students do the clinical work individually following the programme prepared in advance. This work is consulted and controlled by teachers of the subjects and veterinarians (supervisors).

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3 + 8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
1st year									
1.	Philosophy	32	2	16	16	-	48	80	E*
2.	Applied psychology	24	1,5	16	8	-	36	60	T**
3.	Aesthetics	24	1,5	16	8	-	36	60	T
4.	Biophysics	48	3	32	16	-	72	120	E
5.	Inorganic chemistry	80	5	32	48	-	120	200	E
6.	Bioorganic chemistry	64	4	32	32	-	96	160	T
7.	Basics of biometry	48	3	16	32	-	72	120	T
8.	Cytology, histology and embryology	64	2,5	32	-	32	36	100	T
9.	Botany and pharmacognosy	48	3	16	32	-	72	120	E
10.	Zoology	80	5	32	-	48	120	200	T, E
11.	Genetics	48	3	16	32	-	72	120	E
12.	Latin, medical terminology	32	2		32	-	48	80	E
13.	Anatomy	160	6,5	32	-	128	100	260	T, E
14.	Professional English/German	64	4	-	64	-	66	130	T
15.	History of veterinary medicine	24	1	16	8	-	16	40	T
16.	Physical education. Sports	64	1,5	-	64	-	-	64	T
	TOTAL	904	48,5	304	392	208	1010	1914	
	<i>Optional subjects</i>								
	Animal production (incl. -Forage production)	24	1,5	16	8				T

E* - examination;

T** - tests;

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3+8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
2nd year									
1.	Human protection	48	2	32	16	-	72	120	T
2.	Professional English/German	64	3,5		64	-	66	130	T, E
3.	Biochemistry	64	4	16		48	96	160	E
4.	Ecology, environmental protection	32	2	16	16	-	48	80	E
5.	Animal husbandry	96	4	32	-	64	144	240	T
6.	Animal nutrition	80	4	32	-	48	80	160	T
7.	Theory of economics	32	2	16	16	-	48	80	T
8.	Anatomy	64	3	16	-	48	56	120	E,SE***
9.	Histology	48	2	16	-	32	32	80	E
10.	Physiology	168	7	72		96	112	280	T, E,SE
11.	Microbiology	112	4,5	48		64	68	180	T, E,SE
12.	General pathology	40	1,5	24	16	-	20	60	T
13.	Physical education. Sports	64	1,5		64	-	-	64	T
	Total	912	41	320	192	400	842	1754	
	<i>Optional subjects</i>								
	Humanities	16	1,0	16	-	-	-	-	T
	<i>Course papers</i>								
1.	Animal nutrition	-	-	-	-	-	-	-	-
2.	Animal husbandry	-	-	-	-	-	-	-	-
3.	Microbiology	-	-	-	-	-	-	-	-

SE*** - state examination.

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3+8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
3rd year									
1.	Animal, environmental hygiene	64	2,5	32	32	-	36	100	T, E
2.	Ethology	32	1,5	16	16	-	28	60	T
3.	Virology	80	3,5	48	32	-	60	140	E, SE
4.	Immunology	48	2	32	16	-	32	80	E, SE
5.	General pathology	32	1,5	16	16	-	28	60	E
6.	Pharmacology	96	4,0	64	32	-	64	160	T, E, SE
7.	Pathological anatomy (macroscopic & microscopic)	96	3,5	32	-	64	64	160	T
8.	Obstetrics and gynaecology	56	2,5	24	-	32	24	80	T
9.	Clinical and laboratory diagnostics (propaedeutics)	112	4,5	48	-	64	68	180	T, E
10.	Radiology incl. radiography	96	4	32	-	64	64	160	E, T
11.	Parasitology and parasitic diseases	48	2	16	-	32	32	80	T
12.	Surgical techniques	96	4	32	-	64	64	160	T, E, SE
13.	Topographical anatomy	16	1	-	-	16	24	40	T, SE
	Total	872	36,5	392	144	336	588	1460	
	<i>Optional subjects</i>								
	Humanities	32	2	-	32	-	48	80	T
	<i>Course papers</i>								
1.	Clinical and laboratory diagnostics (propaedeutics)	-	-	-	-	-	-	-	-
2.	Surgical techniques	-	-	-	-	-	-	-	-

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3+8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
4th year									
1.	Animal, environmental hygiene	64	2,5	16	-	48	36	100	E, SE
2.	Epidemiology	48	2	16	-	32	32	80	T, SE
3.	Pathological anatomy (macroscopic & microscopic)	80	3,5	16	-	64	48	128	T, E
4.	Obstetrics and gynaecology	64	3,5	32	-	32	56	120	E, SE
5.	Andrology, artificial insemination	80	3,0	32	-	48	40	120	E, SE
6.	Internal diseases, herd health	128	5	64	-	64	72	200	T, E
7.	Small animal internal diseases	32	1,5	16	-	16	24	56	T
8.	Infectious diseases	64	3	32	-	32	56	120	T
9.	Parasitology and parasitic diseases	112	4,5	48	-	64	68	180	T, E, SE
10.	Small animal surgery	96	4	32	-	64	64	160	T, E, SE
11.	Food technology	64	2,5	32	-	32	36	100	T, SE
12.	Foodborne infections	48	2	16	-	32	32	80	E
13.	Basics of jurisprudence	24	1,5	16	8	-	36	60	T
	Total	904	39,0	368	8	528	584	1488	
	<i>Optional subjects</i>								
	Basic subjects	16	1	16			24	40	T
	<i>Course papers</i>								
1.	Animal, environmental hygiene	-	-	-	-	-	-	-	-
2.	Obstetrics and gynaecology	-	-	-	-	-	-	-	-

1	2	3	4	5	6	7	8	9	10
3.	Parasitology	-	-	-	-	-	-	-	-
4.	Small animal surgery	-	-	-	-	-	-	-	-

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3+8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
5th year									
1.	Pathological anatomy (macroscopic & microscopic)	36	1,5	12	-	24	36	72	SE
2.	Clinical and laboratory diagnostics (Propaedeutics)	24	1	12	12	-	16	40	T
3.	Internal diseases, herd health	84	3,5	36	-	48	56	140	E
4.	Small animal internal diseases	48	2	24	-	24	36	84	E, SE
5.	Infectious diseases	72	3	36	-	36	48	120	T
6.	Diseases of small animals incl.:	48	6,5	24	-	24	32	80	T
6.1.	<i>Diseases of fur-bearing animals</i>								
6.2.	<i>Diseases of laboratory and exotic animals</i>								
6.3.	<i>Diseases of bees</i>								
6.4.	<i>Fish and crustacean diseases</i>								
6.5.	<i>Poultry diseases</i>								
7.	Large animal surgery	72	3	24	-	48	48	120	T, E, SE
8.	Professional knowledge incl.:	84	4	48	36	-	56	140	T, SE

1	2	3	4	5	6	7	8	9	10
8.1.	<i>Veterinary legislation</i>								
8.2.	<i>Professional ethics</i>								
8.3.	<i>Practical business management</i>								
8.4.	Scientific and technical information and documentation methods (Veterinary certification and report writing)								
8.5.	<i>Public health and actualities</i>								
9.	Food hygiene and inspection	120	4,5	48	72	-	60	180	T, E, SE
10.	Food toxicology	48	2	24	-	24	32	80	
	Total	636	31,0	288	120	228	420	1056	
	<i>Optional subjects</i>								
	Animal production & Clinical subjects	24	1,0	24	-	-	16	40	T
	<i>Course papers</i>								
1.	Pathological anatomy (macroscopic & microscopic)	-	-	-	-	-	-	-	-
2.	Internal diseases, herd health	-	-	-	-	-	-	-	-
3.	Small animal diseases	-	-	-	-	-	-	-	-
4.	Infectious diseases	-	-	-	-	-	-	-	-
5.	Large animal surgery	-	-	-	-	-	-	-	-
6.	Food Hygiene and inspection	-	-	-	-	-	-	-	-

Table 4.1. Curriculum followed by all students of the Faculty of Veterinary Medicine in 2001/2002; 2002/2003

No	Subject	Hours per year	Credits	Lectures	Practical works		Individual work	Σ (3+8)	Evaluation form
					Group	Subgr.			
1	2	3	4	5	6	7	8	9	10
6th year									
1.	Toxicology	24	1	12	12	-	16	40	T, SE
2.	Internal diseases, herd health	12	0,5	12	-	-	8	20	T, SE
3.	Infectious diseases	24	1	12	-	12	16	40	E, SE
4.	Diseases of small animals	84	4,5	36	-	48	96	180	E, SE
5.	Clinical pharmacotherapy	24	1	12	12	-	16	40	T
6.	Forensic veterinary medicine	24	1	12	-	12	16	40	T
7.	Food product marketing	60	3	36	24	-	60	120	T, SE
8.	Professional knowledge	60	2,5	36	24	-	40	100	E, SE
	Total	312	14,5	168	72	72	268	580	
	<i>Optional subjects</i>								
	Clinical subjects	24	1	12	-	12	16	40	T
	<i>Course papers</i>								
1.	Diseases of small animal	-	-	-	-	-	-	-	-
2.	Professional knowledge (practical business management)	-	-	-	-	-	-	-	-

4.1.1. General table of curriculum hours taken by all students

Study year	Hours of training					
	Lectures	Practical work (gr.+subgr.)	Supervised work	Clinical work	Individual work	Total
First year	304	600	76	-	934	1914
Second year	320	592	168	-	674	1754
Third year	392	480	72	150	366	1460
Fourth year	368	536	144	212	228	1488
Fifth year	288	348	216	52	152	1056
Sixth year	168	144	72	56	140	580
TOTAL	1840	2700	748	470	2494	8252

Elective subjects are not included.

Table 4.1.2: Yearly curriculum studies

Year of the course 1

Subject	Hours of training					Total
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	
Philosophy	16	16	-	-	48	80
Applied psychology	16	8	-	-	36	60
Aesthetics	16	8	-	-	36	60
Biophysics	32	16	-	-	72	120
Inorganic chemistry	32	48	-	-	120	200
Bioorganic chemistry	32	32	-	-	96	160
Basics of biometry	16	32	-	-	72	120
Cytology, histology and embryology	32	32	26	-	10	100
Botany and pharmacognosy	16	32	-	-	72	120
Zoology	32	48	-	-	120	200
Genetics	16	32	-	-	72	120
Latin, medical terminology	-	32	-	-	48	80
Anatomy	32	128	50	-	50	260
Professional English/German	-	64	-	-	66	130
History of veterinary medicine	16	8	-	-	16	40
Physical education. Sports	-	64	-	-	-	64
TOTAL	304	600	76	-	934	1914

Tables 4.1.2: Yearly curriculum studies

Year of the course 2

Subject	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	Total
Human protection	32	16	-	-	72	120
Professional English/German	-	64	-	-	66	130
Biochemistry	16	48	-	-	96	160
Ecology, environmental protection	16	16	-	-	48	80
Animal husbandry	32	64	16	-	128	240
Animal nutrition	32	48	16	-	64	160
Theory of economics	16	16	-	-	48	80
Anatomy	16	48	30	-	26	120
Histology	16	32	20	-	12	80
Physiology	72	96	50	-	62	280
Microbiology	48	64	36	-	32	180
General pathology	24	16	-	-	20	60
Physical education. Sports	-	64	-	-	-	64
TOTAL	320	592	168	-	674	1754

Tables 4.1.2: Yearly curriculum studies

Year of the course 3

Subject	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	Total
Animal, environmental hygiene	32	32	-	-	36	100
Ethology	16	16	-	-	28	60
Virology	48	32	-	-	60	140
Immunology	32	16	-	-	32	80
General pathology	16	16	-	-	28	60
Pharmacology	64	32	-	-	64	160
Pathological anatomy (macroscopic & microscopic)	32	64	-	-	64	160
Obstetrics and gynaecology	24	32	-	24	-	80
Clinical and laboratory diagnostics (propaedeutics)	48	64	36	20	12	180
Radiology (incl.radiography)	32	64	-	64	-	160
Parasitology and parasitic diseases	16	32	-	14	18	80
Surgical techniques	32	64	36	28	-	160
Topographical anatomy	-	16	-	-	24	40
TOTAL	392	480	72	150	366	1460

Table 4.1.2. Yearly curriculum studies

Year of the course 4

Subject	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	Total
Animal, environmental hygiene	16	48	36	-	-	100
Epidemiology	16	32	-	-	32	80
Pathological anatomy (macroscopic & microscopic)	16	64	-	-	48	128
Obstetrics and gynaecology	32	32	36	20	-	120
Andrology, artificial insemination	32	48	-	40	-	120
Internal diseases, herd health	64	64	-	40	32	200
Small animal internal diseases	16	16	-	8	-	40
Infectious diseases	32	32	-	56	-	120
Parasitology and parasitic diseases	48	64	36	20	12	180
Small animal surgery	32	64	36	28	-	160
Food technology	32	32	-	-	36	100
Foodborne infections	16	32	-	-	32	80
Basics of jurisprudence	16	8	-	-	36	60
TOTAL	368	536	144	212	228	1488

Table 4.1.2. **Yearly curriculum studies**
Year of the course 5

Subject	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	Total
Pathological anatomy (macroscopic & microscopic)	12	24	36	-	-	72
Clinical and laboratory diagnosis (Propaedeutics)	12	12	-	-	16	40
Internal diseases, herd health	36	48	36	20	-	140
Small animal internal diseases	24	24	36	-	-	84
Infectious diseases	36	36	36	-	12	120
Diseases of small animals incl.:	24	24	-	20	12	80
<i>Diseases of fur-bearing animals</i>						
<i>Diseases of laboratory and exotic animals</i>						
<i>Diseases of bees</i>						
<i>Fish and crustacean diseases</i>						
<i>Poultry diseases</i>						
Large animal surgery	24	48	36	12	-	120
Professional knowledge incl.:	48	36	-	-	56	140
<i>Veterinary legislation</i>						
<i>Practical business management</i>						
<i>Professional ethics</i>						
Scientific and technical information and documentation methods						
<i>Public health and actualities</i>						
Food hygiene and inspection	48	72	36	-	24	180
Food toxicology	24	24	-	-	32	80
TOTAL	288	348	216	52	152	1056

Table 4.1.2. **Yearly curriculum studies**

Year of the course 6

Subject	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other (individual)	Total
Toxicology	12	12	-	-	16	40
Internal diseases, herd health	12	-	-	-	8	20
Infectious diseases	12	12	-	16	-	40
Diseases of small animals	36	48	36	40	20	180
Clinical pharmacotherapy	12	12	-	-	16	40
Forensic veterinary medicine	12	12	-	-	16	40
Food product marketing	36	24	-	-	60	120
Professional knowledge	36	24	36	-	4	100
TOTAL	168	144	72	56	140	580

Information on curriculum (programme)

The study programme includes the following subject blocks (groups): basic subjects, animal production, clinical, food hygiene and professional knowledge as well as the humanities. The study programme is designed in such a way that a larger volume (CP) and training time would be allotted to professional subjects (clinical subjects, food hygiene and professional knowledge, i.e., 3rd, 4th, 5th and 6th year that makes 7 semesters, each of them 16 weeks long). An exception is the 5th and 6th year (the 11th semester) with 12 weeks of studies. In the 12th semester of the 6th year there is internship practice for 16 weeks.

The basic subject block includes 21 subjects that makes 1732 h (83 CP + 3 CP course papers); the clinical subject block includes 15 subjects, 1516 h (62.5 CP + 15 CP course papers); food hygiene block – 5 subjects, 340 h (14 CP + 1.5 CP course papers); professional knowledge subjects – 5 subjects, 144 h (6 CP + 1.5 CP course paper); humanities – 7 subjects, 408 h (18 CP). The volume of elective subjects is 160 h (9.5 CP).

There are obligatory subjects in Table 4.1.3. which are not mentioned as separate subjects, but in a block, e.g., the subject Small animal diseases which comprises 5 related groups of animal species but in fact they are separate study subjects. They are: poultry diseases, bee diseases, laboratory and exotic animal diseases, fish and crustacean diseases as well as fur-bearing animal diseases with the subject block volume 6.5 CP, i.e., 132 h. Each of the above mentioned 5 subjects is not mentioned in the study programme as a separate subject because recommendations of the LUA Teaching and Methodological Committee and Statutes of Studies define that it is not allowed to design the study programme disintegrated, detailed. These related subjects must be grouped in blocks. The succession of the study subjects comprised in the block Small animal diseases is the following:

- Poultry diseases,
- Bee diseases,
- Laboratory and exotic animal diseases,
- Fish and crustacean diseases,
- Fur-bearing animal diseases.

Biological cycle, seasonality and peculiarities of the particular animal species and productivity are taken into consideration of the succession of teaching these subjects. So poultry diseases students acquire in the autumn semester but bee diseases in the spring semester which is associated with the apiary cycle activities and biorhythm of bees. Fish and crustacean diseases students obtain in the autumn semester when the biological cycle of fish come to an end – catch and sheltering. Fur-bearing animal diseases are taught in the autumn semester which is connected with a special productivity season of this animal species – output of fur.

Table 4.1.3. Curriculum hours in EU-listed subjects taken by every student

Subject	Hours in course				
	Credit Points (CP)	Lectures	Practical work	Other (individ.)	Total
1	2	3	4	5	6
A Basic subjects					
1. Anatomy	9,50	48	176	156	380
2. Basics of biometry	3,00	16	32	72	120
3. Biochemistry	4,00	16	48	96	160
4. Bioorganic chemistry	4,00	32	32	96	160
5. Biophysics	3,00	32	16	72	120
6. Botany and pharmacognosy	3,00	16	32	72	120
7. Cytology, histology and embryology	4,50	48	64	68	180
8. Epidemiology	2,00	16	32	32	80
9. General pathology	3,00	40	32	48	120
10. Genetics	3,00	16	32	72	120
11. History of veterinary medicine	1,00	16	8	16	40
12. Immunology	2,00	32	16	32	80
13. Inorganic chemistry	5,00	32	48	120	200
14. Latin, medical terminology	2,00	-	32	48	80
15. Microbiology	4,50+1,50	48	64	68	180
16. Pathological anatomy (macroscopic & microscopic)	9,00+1,50	60	152	148	360
17. Pharmacology	4,00	64	32	64	160
18. Physiology	7,00	72	96	112	280
19. Toxicology	1,00	12	12	16	40
20. Virology	3,50	48	32	60	140
21. Zoology	5,00	32	48	120	200
1	2	3	4	5	6
Total part A	86,00	696	1036	1588	3320
B Animal production					
1. Animal, environmental hygiene	5,00+1,50	48	80	72	200
2. Ethology	1,50	16	16	28	60
3. Animal husbandry	6,00+1,0	32	64	144	240
4. Animal nutrition	4,50+1,0	32	48	100	180
5. Ecology, environmental protection	2,00	16	16	48	80
6. Theory of economics	2,00	16	16	48	80
Total B	24,50	160	240	440	840
C Clinical subjects					
1. Andrology, artificial insemination	3,00	32	48	40	120
2. Clinical and laboratory diagnostics (propaedeutics)	5,50+1,5	60	76	84	220
3. Clinical pharmacotherapy	1,00	12	12	16	40
4. Diseases of small animals	6,50+1,5	60	72	128	260

5. Forensic veterinary medicine	1,00	12	12	16	40
6. Infectious diseases	6,50+1,5	80	80	100	260
7. Internal diseases, herd health	9,00+1,5	112	112	136	360
8. Large animal surgery	3,00+1,5	24	48	48	120
9. Obstetrics and gynaecology	5,00+1,5	56	64	80	200
10. Parasitology and parasitic diseases	6,50+1,5	64	96	100	260
11. Radiology (incl. radiography)	4,00	32	64	64	160
12. Small animal internal diseases	3,00+1,5	40	40	40	120
13. Small animal surgery	4,00+1,5	32	64	64	160
14. Surgical techniques	3,50+1,5	32	64	64	160
15. Topographical anatomy	1,00	-	16	24	40
Total part C	77,50	648	868	1004	2520
D Food Hygiene					
1. Foodborne infections	2,00	16	32	32	80
2. Food control and inspection	4,50+1,5	48	72	60	180
3. Food product marketing	3,00	36	24	60	120
4. Food technology	2,50	32	32	36	100
5. Food toxicology	2,00	24	24	32	80
Total part D	15,50	156	184	220	560
E Professional knowledge					
1. Practical business management	1,50+1,50	24	12	52	88
2. Professional ethics	1,50	24	12	20	56
3. Public health and actualities	0,75	12	-	-	12
4. Scientific and technical information and documentation methods (Veterinary certification and report writing)	0,75	-	24	-	24
5. Veterinary legislation	1,50	24	12	24	60
Total part E	7,50	84	60	96	240
F Humanities					
1. Aesthetics	1,50	16	8	36	60
2. Applied psychology	1,50	16	8	36	60
3. Basics of jurisprudence	1,50	16	8	36	60
4. Human protection	2,00	32	16	32	80
5. Philosophy	2,00	16	16	48	80
6. Physical education. Sports	3,00	-	128	-	128
7. Professional English/German	6,50	-	128	132	260
Total part F	18,00	96	312	320	728
TOTAL A+B+C+D+E+F	229,00	1840	2700	3712	8252
G Optional subjects					
1. Animal productions	2,50				
2. Basic subjects	2,00				
3. Clinical subjects	1,00				
4. Humanities	4,00				
Total part G	9,50				
TOTAL theoretical course	238,5				
Practical training	36,5				
	275,00				

Table 4.1.3. Curriculum hours in EU-listed subjects taken by every student

Subject	Hours in course					
	Lectur es	Practical work	Supervised work	Clinical work	Other (ind.)	Total
1	2	3	4	5	6	7
A Basic subjects						
1. Anatomy	48	176	80	-	76	380
2. Basics of biometry	16	32	-	-	72	120
3. Biochemistry	16	48	-	-	96	160
4. Bioorganic chemistry	32	32	-	-	96	160
5. Biophysics	32	16	-	-	72	120
6. Botany and pharmacognosy	16	32	-	-	72	120
7. Cytology, histology and embryology	48	64	46	-	22	180
8. Epidemiology	16	32	-	-	32	80
9. General pathology	40	32	-	-	48	120
10. Genetics	16	32	-	-	72	120
11. History of veterinary medicine	16	8	-	-	16	40
12. Immunology	32	16	-	-	32	80
13. Inorganic chemistry	32	48	-	-	120	200
14. Latin, medical terminology	-	32	-	-	48	80
15. Microbiology	48	64	36	-	32	180
16. Pathological anatomy (macroscopic & microscopic)	60	152	36	-	112	360
17. Pharmacology	64	32	-	-	64	160
18. Physiology	72	96	50	-	62	280
19. Toxicology	12	12	-	-	16	40
20. Virology	48	32	-	-	60	140
21. Zoology	32	48	-	-	120	200
TOTAL part A	696	1036	248	-	1340	3320
B Animal production						
1. Animal, environmental hygiene	48	80	36	-	36	200
2. Ethology	16	16	-	-	28	60
3. Animal	32	64	16	-	128	240

husbandry						
4. Animal nutrition	32	48	16	-	64	160
5. Ecology, environmental protection	16	16	-	-	48	80
6. Theory of economics	16	16	-	-	48	80
TOTAL part B	160	240	68	-	372	840
C Clinical subjects						
1. Andrology, artificial insemination	32	48	-	40	-	120
2. Clinical and laboratory diagnostics (propaedeutics)	60	76	36	20	28	220
3. Clinical pharmacotherapy	12	12	-	-	16	40
4. Diseases of small animals	60	72	36	60	32	260
5. Forensic veterinary medicine	12	12	-	-	16	40
6. Infectious diseases	80	80	36	72	12	280
7. Internal diseases, herd health	112	112	36	60	40	360
8. Large animal surgery	24	48	36	12	-	120
9. Obstetrics and gynaecology	56	64	36	44	-	200
10. Parasitology and parasitic diseases	64	96	36	34	30	260
11. Radiology (incl. radiography)	32	64	-	64	-	160
12. Small animal internal diseases	40	40	36	4	-	124
13. Small animal surgery	32	64	36	28	-	160
14. Surgical techniques	32	64	36	28	-	160
15. Topographical anatomy	-	16	-	-	24	40
TOTAL part C	648	886	360	410	226	2520
D Food Hygiene						
1. Foodborne	16	32	-	-	32	80

infections						
2. Food control and inspection	48	72	36	-	24	180
3. Food product marketing	36	24	-	-	60	120
4. Food technology	32	32	-	-	36	100
5. Food toxicology	24	24	-	-	32	80
TOTAL part D	156	184	36	-	174	560
E Professional knowledge						
1. Practical business management	24	12	36	-	16	88
2. Professional ethics	24	12	-	-	20	56
3. Public health and actualities	12	-	-	-	-	12
4. Scientific and technical information and documentation methods (Veterinary certification and report writing)	-	24	-	-	-	24
5. Veterinary legislation	24	12	-	-	24	60
TOTAL part E	84	60	36	-	60	240
F Humanities subjects						
1. Aesthetics	16	8	-	-	36	60
2. Applied psychology	16	8	-	-	36	60
3. Basics of jurisprudence	16	8	-	-	36	60
4. Human protection	32	16	-	-	72	120
5. Philosophy	16	16	-	-	48	80
6. Physical education. Sports	-	128	-	-	-	128
7. Professional English/German	-	128	-	-	132	260
TOTAL part F	96	312	-	-	320	728
TOTAL A+B+C+D+E+F	1840	2700	748	470	2494	8252

Figure 4.1. FVM curriculum distribution 2001/2002; 2002/2003

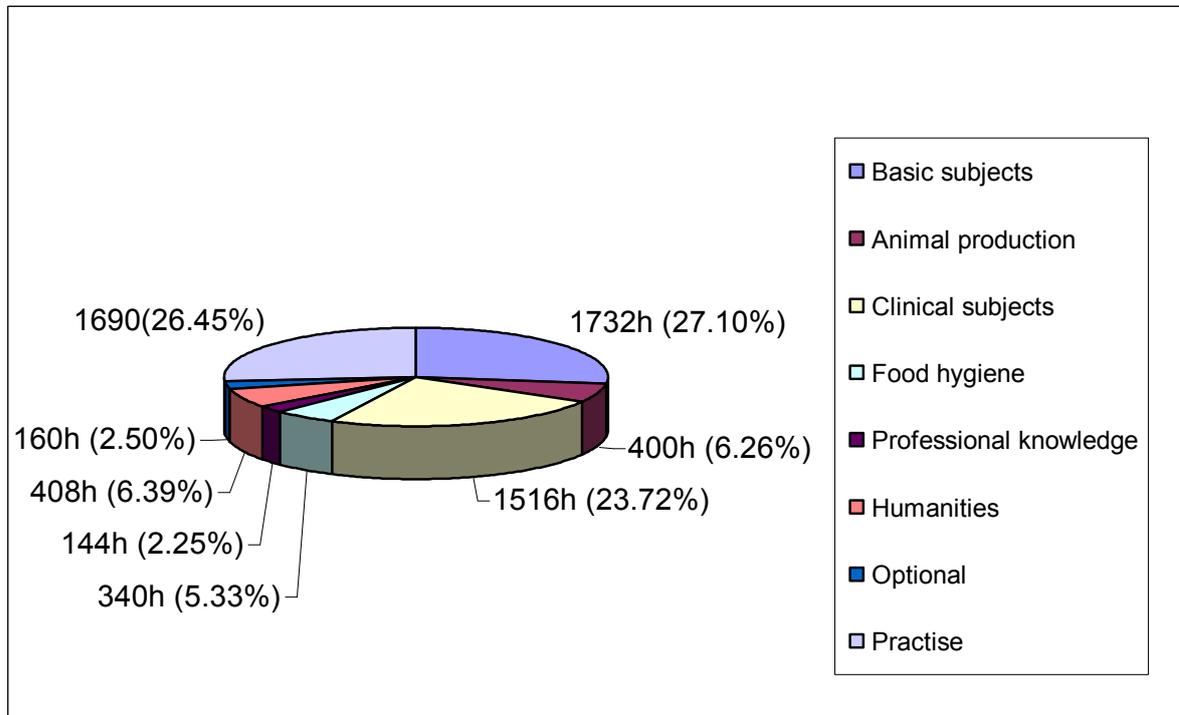


Table 4.1.4: Curriculum hours in other subjects taken by every student

Subject	Hours in course					Total
	Lectures	Practical work	Supervised work	Clinical work	Other	
Foreign language	-	128	-	-	132	260
Latin, medical terminology	-	32	-	-	48	80
Physical education. Sports	-	128	-	-	-	128
Philosophy	16	16	-	-	48	80
Applied psychology	16	8	-	-	36	60
TOTAL	32	312	-	-	264	608

Table 4.2. Curriculum hours in elective subjects

	Elective course	Hours in course					Total
		Lectures	Practical work	Supervised work	Clinical work	Other	
Elective block 4 th year 8 th semester	Anatomy of laboratory animals	-----	24	-----	-----	-----	24
	Veterinary dentistry	16	8	-----	-----	-----	24
Elective block 5 th year 9 th semester	Goat diseases	12	12	-----	-----	-----	24
Elective block 5 th year 10 th semester	Game animal diseases	12	12	-----	-----	-----	24

Study subjects in Table 4.2. are offered as electives, but, if the student has selected any of these subjects in the related year, the attendance is compulsory. Every of the above given subjects in Table 4.2. is comprised in the clinical subject block and their volume is 24 h (1 CP). Elective subjects are offered taking into account the total study programme (curriculum), succession of obligatory and optional (elective) subjects is observed. Thus, after completion of anatomy course students acquire the elective course Anatomy of laboratory animals.

The elective course Veterinary dentistry is planned after Operative surgery which is an obligatory course when students have acquired basic methods of surgery technique.

Goat and game animal diseases as electives are in the 5th year when students have obtained the following clinical subjects:

- clinical diagnostics,
- parasitology and parasitic diseases,
- epidemiology,

that have formed the ground of etiopathogenesis, diagnostics, differential diagnostics, treatment and prevention.

In Table 4.2. there are not included the following subjects as electives – internal diseases of small animals, biotechnology, equine diseases because these subjects are comprised in the study programme as part of obligatory subjects. For example, Biotechnology is included into

the subject Obstetrics and gynaecology; Equine diseases into the study subject Large animal internal diseases and herd health.

In perspective it is possible to improve the study programme by adding elective subjects considering the demand in real life but not increasing the total number of hours in the 6-year study programme because the volume of the study programme is defined by the LUA Statute of Studies.

Table 4.3. **Optional subjects in veterinary medicine**

Subjects	Study years	Hours of training					
		Lectures	Practical work	Supervised work	Clinical work	Individual work	Total
Forage production	1.	8	8	-	-	-	16
Applied communication	2.	8	40	-	-	-	48
Applied ecology	2.,3.	8	8	-	-	-	16
Risks on the farm	4.	8	8	-	-	-	16
Marketing	5.	16	8	-	-	-	24
People in emergencies	3.	8	8	-	-	-	16
Milking & primary milk processing	2.	24	8	-	-	-	32
Modernisation of animal farms	2., 3.	8	16	-	-	-	24

Division of academic (study) year

Studies begin on Monday of that week in which there is the 1st of September (except Saturday and Sunday) or next week if 1st September falls into Saturday or Sunday.

The academic year is divided into two semesters – winter and spring, each of them is 16 weeks long. In the 5th study year of the full-time study programme Veterinary medicine each semester is 12 weeks long.

At the end of each semester there is a 3-week individual study and examination period (examination session).

Duration of studies

Duration of studies in veterinary medicine is 6 years (12 semesters).

Practice

Practice is an integral part of the study programme.

Procedure and requirements of the practice, fixed date of report preparing and defence are defined and worked out at the Teaching Methodology Committee and approved by the FVM Council.

Full time students have rights to choose the place of practice in order to fulfil the programme requirements of the practice. The chosen place of practice must be coordinated with the related practice supervisor.

Students are appointed to the place of practice by the Rector's order.

Table 4.4. Obligatory extramural work that students must undertake as part of their course

Nature of work	Minimum period (weeks)	Study years
Practice on teaching and research farm "Vecauce"	1	1 st year, 2 nd semester
Animal physiology	3	2 nd year, 2 nd semester
Herd health and reproduction	3	3 rd year, 2 nd semester
Practice in clinic training	3	4 th year, 2 nd semester
Small animal diseases	4	5 th year, 1 st semester
Large animal diseases	5	5 ^{gads} , 2. semester
Laboratory diagnostics	2	5 th year, 2 nd semester
Food hygiene and inspection	4	5 th year, 2 nd semester
Internship	16	6 th year, 2 nd semester
TOTAL	41.0	

Table 4.4.1. **Obligatory extramural work that students must undertake as part of their course**

Nature of work	Minimum period (weeks)	Study years	Credit points
Anatomy, zoology, botany	3 (1+1+1)	1 st year, 2 nd semester	3 (1+1+1)
Practice on teaching and research farm “Vecauce”	1	1 st year, 2 nd semester	1
Animal physiology	3	2 nd year, 2 nd semester	3
Herd health and reproduction	3	3 rd year, 2 nd semester	3
Practice on teaching and research farm “Vecauce, Individual clinical work	3	4 th year, 2 nd semester	3
Small animal diseases	4	5 th year, 1 st semester	4
Laboratory diagnostics	2	5 th year, 2 nd semester	2
Large animal diseases	5	5 th year, 2 nd semester	5
Food hygiene and inspection	4	5 th year, 2 nd semester.	4
Clinical work	2.5	1.-6. years	2.5
Internship	16	6 th year, 2 nd semester	6
TOTAL	46.5		36.5

Practice given in Table 4.4. and Table 4.4.1. is obligatory to all students of the FVM. Practice in the 1st year 2nd semester (Table 4.4.1.) in anatomy, botany and zoology 3 weeks takes place on the grounds of the faculty (in-doors and out-doors).

Practice is an integral part of the study programme. The place of the practice and the particular supervisor are coordinated documentary. See annex “Agreements on practice” duplicates. Students are appointed to the practice by the Rector’s order (see annex “Rectors orders”). Agreement defines bilaterally coordinated liabilities, obligations and tasks to be fulfilled by the practice supervisor and student. Organising issues of the practice are arranged in such a way to ensure a proper acquisition of practical skills. This practice is organised outside the faculty – on the LUA Teaching and Research Farm “Vecauce” and other farms specialising in animal breeding (animal husbandry), in veterinary private clinics and large and small animal clinics, in Rīga Zoo (practice in animal physiology), laboratories of the State

Veterinary Diagnostic Centre, state market veterinary inspection laboratories. Improvement of theoretical knowledge and acquisition of practical skills are ensured in slaughterhouses and meat processing enterprises.

During the practice (e.g. Herd health and reproduction, Small animal diseases, Large animal diseases) students participate in animal examination, making diagnosis, treatment as well as pathoanatomical necropsies in case of lethal outcome.

In accordance with modern requirements, an important practice (4 weeks) is in Food hygiene and inspection during which students learn up-to-date methods in food quality control and assessment under supervision of a specialist. At the end of the practice students must submit his/her report according to the objective and task of the practice and take a test or examination (see Tab.4.1.).

Internship

This practice is done in all branches of veterinary medicine – in large and small animal clinics, food enterprises as well as the branch chosen by the student he/she is going to work as a veterinarian. During the time of practice students take part in animal examination, making diagnosis, treatment, pathoanatomical necropsies. Practising in food processing enterprises, students participate in food inspection, assessment, control of the production process, disinfection of equipment. The goal of the practice is to improve theoretical knowledge and gain practical experience.

4.5. Ratios

$$\frac{\text{Theoretical training}}{\text{Practical and clinical training}} = \frac{1840}{2700+748+470+1690} = \frac{1}{3}$$

$$\frac{\text{Clinical training}}{\text{Theoretical and practical training}} = \frac{748+470+1690}{1840+2700} = \frac{1}{1,60}$$

Both of the ratios:

- study subjects theoretical training/practical and clinical training volume is good
- clinical training/theoretical and practical training volume is satisfactory.

4.6. Further information on the curriculum

See Annex 4-1 annotation of subjects.

A Basic subjects

Inorganic chemistry, bioorganic chemistry, biochemistry is a complex of chemistry subjects where students gain information on biogenic elements, microelements, biologically significant chemical elements, chemical structure of animal body and molecular processes both in normal case and pathology. The task of the subjects of chemistry is to prepare students properly enabling to understand more profoundly the mechanism of disease genesis, principles of treatment, pharmacokinetics and pharmacodynamics of veterinary drugs.

Anatomy, cytology, histology and embryology

These subjects are the basis of biological sciences. Anatomy is closely connected with cytology, embryology and histology and microscopic anatomy as well. Knowledge of anatomy and histology are applied in mastering the clinical subjects. In these basic subjects students acquire the structural levels of the animal body: cells, tissue, systems of organs and apparatuses. Normal macro- and microstructure of animal organism, peculiarities and variations of species and breeds.

Students gain skills in preparing anatomical and histological preparations (slides) (in anatomy – dissection, in histology – sampling of tissues – autopsy, biopsy for histological examination) regulations on the choice of fixatives, preparing blocks of paraffin, staining of slides (classical methods).

Students learn the content of anatomy subject in a logical succession starting with osteology and ending with anatomical structure of organs. The course of anatomy is finished in the

theme – peculiarities of anatomical structure of the bird, where students must be able to compare the anatomical structure peculiarities of the mammal with that of the bird.

In the 2nd semester for 1 week students practise with a live animal learning topographical anatomy. The programme of the practice is worked out in accordance with the mastered theory. This allows the student to improve his/her knowledge in anatomical structure of live animal organism which is applied later studying the clinical subjects. Only these students are allowed to do practice in anatomy providing that they have completed the anatomy course.

In cytology, embryology and histology students acquire microstructure of tissues and organs. Themes of colloquiums in anatomy and histology are coordinated as far as possible and their succession is observed, i.e., first macrostructure of the digestive apparatus is studied and after that this material is covered in histology training. At the end of the subject students must take examination that comprises both theoretical and practical part: a histological slide must be identified.

Physiology is the theoretical fundamental of all veterinary disciplines. It is closely connected with anatomy, histology, cytology, biochemistry and biophysics. Students need the physiology knowledge to be able to understand the regulatory mechanisms and functional processes of the organism. Having no knowledge in physiology students cannot understand and study pathology, clinical diagnostics, animal and environmental hygiene, internal diseases and other subjects.

The students learn physiology in the second year of studies 3rd semester taking a test, but in the 4th semester they take an examination. The subject is divided into themes the students master parallel to those in lectures and practical training using small animals and horses from the FVM clinic, clinical laboratories, Veterinary Education Centre clinic as well as laboratory animals from the morphofunctional diagnostic laboratory of the Preclinical Institute. Acquiring digestive physiology students have opportunities to use experimental animals with chronic stomach fistules, fibrogastroscopy and intragastric pH-metry both for practical training and research. The students do their practical work, process the obtained data, write reports (minutes) write control papers and take colloquiums. Some subjects parts (regulation of temperature, physiology of analysers peculiarities of breathing and digestion in birds) students learn on their own according to the given list of literature and handouts. Practice in

physiology takes place at the end of the 4th semester when the theoretical course is obtained enabling the students to improve their knowledge and apply it in contact with animals of different species.

Pharmacology

At lectures students obtain the division (groups) of veterinary drugs, their pharmacodynamics and pharmacokinetics, indications, contraindications, regulations on the choice of doses, ways of drug administration, interaction, its manifestation forms, undesirable effects, combination pharmacology, legislation on the veterinary drug circulation. According to the survey of veterinary drug groups, veterinary phytotherapy therapy is taught. Data base ATC_{vet} Anatomical – Therapeutical – Clinical classification (<http://www.pvd.gov.lv>) is used.

During the practical teaching students obtain drug forms (presentation), their technology, drug prescription depending on the animal species, indications, way of administration and other parameters; ATC_{vet} classification and according to it a survey of veterinary drugs registered in Latvia; restrictions in the drug administration in animals and drug residues in foodstuff of animal origin in compliance with the EU regulations No 2377/90; the latest drugs in circulation according to their pharmacological classification system. A teaching aid of drugs registered in The Republic of Latvia is developed.

Toxicology

General and special toxicology. Principles of toxicometry, toxicokinetics and toxicodynamics. The main syndromes of poisoning, treatment and prevention. Antidots and first aid. Forms of poisoning: with chemical reagents, poisonous plants, micotoxins. Sampling of feed, water, content of the digestive tract, parenchymatous organs etc., conservation and delivering requirement for toxicological examinations. Environmental pollution in Latvia.

Students get acquainted with the yearly cases of poisoning according to the statistics of the State Veterinary Diagnostic Centre information as well as with methods of toxicological examinations etc.

Pathological anatomy (macroscopic and microscopic)

At lectures (60 h) students get information on morphology of pathology at macroscopic, microscopic and ultramicroscopic level. Acquisition of the material practically is carried out in small groups of 8-12 students. 80 pathological processes (lesions) are examined under microscope. Every student necropsies, analyses and documents 1 horse/cow, 10-12 pigs, dogs etc., 4-5 hen cadavers. Analysis of pathological preparations (more than 2000 museum preparations), slides, video films (30), slaughter material and others. Students must obligatory obtain 9 complexes of practical skills and the minimum of pathological lesions by hands-on training with natural objects. Notes of 8 themes must be prepared from literature sources in Latvian, and 2 themes from literature in English/German and Russian. Students have 20 control works, 3 tests and take examination with 240 questions (60 x 40), write 1 course paper with a related documentation of 3 necropsies, analysis and summary either in English/German or Russian. At students disposal there are 2 textbooks and 10 brochures in Latvian written by the FVM academic staff and other professional literature (more than 500 volumes) in English, German and Russian, 30 video films, slides, atlases, albums.

Microbiology, virology, toxicology, epidemiology

The most important task of the Food and Veterinary Service is prevention and control of infectious diseases. This task results from the necessity to protect human health and ensure the quality of food.

The specialists working in the Service must be able to recognise infectious diseases in due time, to make a legally valid diagnosis, to organise control and prevention of these diseases.

In the etiopatogenesis of infectious diseases and epidemiology, in contrast of non-contagious diseases, specific agents (bacilli, bacteria, viruses, chlamidia, rickettsia, pathogen fungi etc.). To investigate the morphological, physiological, biological properties of these agents, besides the use of well-known basic methods new up-to-date ones are used for the student training: modernised miniature biochemical tests – direct analytic identification of microorganisms (API – System for the research of enzymic activity) and miniature identification system of microorganisms (BBL – Crystal Identification System) as well as the molecular level methods (polymerase chain reaction – PCR with modifications – Eastern and Western blot method,

immunohistochemical methods, immunofluorescence analyses – ELISA, direct and indirect immunofluorescence method – FAT).

Mechanisms of symbiosis of two biological systems – microorganisms and macroorganisms – immunology give understanding about the causes of congenital and obtained immunodeficiencies, allergies, autoimmune diseases and malignant tumours, about latent infections. The results of these processes the students obtain applying the above mentioned tests.

In the studies of immunology the students find out and explain the ability of the animal organism to resist infection, obtain understanding of opportunities to develop specific preventive means (vaccines, serum) and conditions of proper application to reach the maximum of the preventive effect.

The above mentioned study subjects (microbiology, virology, immunology) give an important basic information on investigation of epidemiological process.

In epidemiology studies students use the information of statistics on the spread of diseases (State Food and Veterinary Service, OIE), various environmental factors and their effect on the animal organism as well as evaluate the risk factors of the spread of the disease.

To analyse the risk factors students apply the qualitative and quantitative methods of risk assessment.

Epidemiology provides knowledge in calculation of losses, prognosis of outbreaks of diseases, choice of effective means in order to prevent these outbreaks within the borders of the state, region or herd as well as to organise control measures in due time.

Microbiology, virology, immunology and epidemiology subjects provide knowledge in the control of infectious diseases and development of effective preventive system.

Zoology

Zoology is one of the introductory subjects which students obtain in the 1st and 2nd semester of the studies. In contrast the traditional zoology course where the main attention is paid to the systematic survey of the animal kingdom, about half (50%) of the lectures is devoted to general zoology matters. In the general zoology course students obtain a conception about animal evolution and common principles according to which the organism is functioning. Within the framework of the systematical zoology students become familiar with the main types and classes of animal world. In practical training anatomical structure, reproduction and development of selected animal representatives are covered.

B Animal production

In this group of subjects there are 6 related, separate subjects with the total volume 400 h, 21 CP. The largest part of hours – 128 h makes the subject Animal and environmental hygiene. In 3 subjects students write course papers.

In these subjects students acquire the significance of national economy, perspectives of development, breeding methods (pedigree), trends and distribution.

Animal nutrition

The students obtain knowledge in zootechnical and economic assessment of animal feedstuffs, standards of animal nutrition, ratios the domestic animals need for carrying on the different live processes – for different species, age, in the period of active productivity, gestation period. The students gain practical skills in calculating standards and ratios of the feed in such a way to get the maximum productivity result with a minimum consumption of feed maintaining the animal health.

Animal husbandry

The aim of the subject is to provide knowledge in animals of different species and breeds, to enable students to evaluate the animal productivity, importance of pedigree work in development of animal breeds in the Republic of Latvia. This knowledge allows to understand peculiarities of animal reproduction and care taking of different species and breeds as well as the significance of pedigree work in the national economy.

Animal, environmental hygiene comprises information on animal well-being, hygiene of soil, water, air and environment in general and animal adaptation in it, acclimatisation and acquisition of natural resistance. Students learn about the effect of seasonality of the climatic conditions on the animal organism, the feedstuff and environmental microclimate association with the animal health, welfare and productivity.

The subject programme comprises 80 h practical training when students obtain skills to assess the pollution degree of water, feedstuff and air, the causative factors and preventive measures. Consider the peculiarities of the domestic animal species supplying the adequate lighting in the room, its significance in some animal species to facilitate their development and improve their productivity (e.g. poultry). At the end of the subject students work out and defend a course paper.

Ecology, environmental protection

Importance of ecology in environmental protection, environment problems. Structure of ecosystems, stability. Interaction of social and technological solutions. Environmental pollution: causes and consequences. The study course ends in an examination. Students are offered to improve their knowledge taking the Practical ecology course in the following semesters.

Ethology

Students obtain knowledge in animal behaviour – their needs, joy, sadness, pain and the ways of expressing their behaviour. This knowledge is necessary to be able to explain the regularity

of animal behaviour of a specific species as it gives the specialist ability to successfully deal with matters of animal production, keeping, care and treatment.

Theory of economics

Market, its forms, prices and competition. Economic development and international economic relations.

C Clinical subjects

Clinical and laboratory diagnostics

At lectures students receive theoretical information on the following issues: symptoms and syndromes; diagnosis and prognosis; methods of clinical and laboratory examination, general and special (systemic examination), symptomatology and analysis of symptoms. In practical and laboratory works students (8-10 per group) acquire examination methods of habits, hair coat, skin, lymphnodes, mucousa, cardiovascular system, respiratory, digestive organs, urinary system, central and peripheral nervous system using patients of the clinic as well as in field-trips on private farms, Teaching and Research farm “Vecauce”.

Besides, the students get familiar with methods of morphological (erythrocyte, lymphocyte count, PCV %, determination of haemoglobin concentration and assessment of the leukocyte formula), biochemical (bulk protein, glucose, ALT, AST, alkaline phosphatase, creatinine, urea, bilirubin) examination acquiring part of them. Do urine analysis with a multistick (pH, density, nitrates, haemoglobin, erythrocytes, leukocytes, urobilinogen, bilirubin, glucose, ketone bodies) and microscopic urine examination as well as examination of skin scrapings, biopate and others. In practical trainings students analyse not only the obtained data but also clinical cases prepared by the teacher, draw up a differential diagnostics plan, make the diagnosis and choose suitable ways of its verification.

During the course of studies knowledge control of students is organised in the form of colloquiums and (controlwork). The students elaborate and defend a course paper, take examination.

For the improvement of the study subject the 3rd year student everyday work is established in the diagnostic laboratory of the Clinical Institute and the Veterinary Education Centre clinic as well as an individual task is included in the programme of the 3rd year practice.

Radiology incl. radiography.

The course of lectures comprises the following theoretical issues: sources of ionizing radiation, quality, types; natural and artificial radioactivity; migration of radionuclides in biosphere, their metabolism and accumulation in plants and animals; effect of radiation on cells, tissues, organisms; radiation sickness, use of ionising radiation and radioactive isotopes in biology, agriculture, human medicine and veterinary medicine. A special attention is paid to the physics and technology of x-rays, methods of x-ray diagnostics. Improvement of their opportunities and implementation in the PVM radiology laboratory. In practical training students practise in dosimeter and radiometry, acquire special apparatuses in application; radiohygienic assessment of x-rayed and polluted products of plant and animal origin. Perform radiological and radiographical examination of animals, processing of radiogrammes and assessment of clinical diagnostics. Most essential objects of investigation are bone and joint pathology, gastrointestinal diseases, urinary organ problems. Students attention is drawn to the radiation hygiene, strict observance of regulations on safety measures are constantly being controlled by the academic staff.

Parasitology and parasitic diseases. The study subject gives understanding about parasitism as general biological phenomenon in nature, and the parasites as agents of diseases.

During the study process students become familiar with economically most important and most often spread animal parasites, their morphology, biology, classification, geographical distribution, way of life, relationship with the host organism and surroundings as well as parasitic diseases in ruminants, horses, pigs, carnivores, poultry, rabbits and other species. Epidemiology, origin and prevalence regularity of protozooses, helminthoses and arachnoentomoses in these animals, the role of parasites in causing associative diseases, pathogenesis, immunity, clinical manifestation, pathoanatomical changes, diagnostics, differential diagnostics, treatment and prevention in association with economic aspects and safety of human health.

During the practical training students obtain the practical minimum. The students learn to take samples (blood, tissue, faeces etc.) for parasitological examinations, acquire main clinical, laboratory and post-mortem diagnostic methods, treatment and preventive measures, assess different ways of animal keeping, carry out parasitological examination of pasture-ground and other objects of outer surroundings. The practical teaching of students is carried out by animal species, mainly on natural objects, in the laboratory of parasitology, necropsy room and clinic as well as the State Veterinary Diagnostic Centre, private clinics, on the LUA teaching farms and other farms. Tasks in parasitology are included in the 3rd, 4th and 5th year practical programmes. Control of knowledge is performed in colloquiums and controlworks. The studies are finished with elaboration of a course paper and examination.

Internal diseases and herd health.

At the lecture course students acquire knowledge about organs and their systems of farm animals and horses as well as etiology, pathogenesis, clinical signs, diagnosis and differential diagnosis, progress and prognosis, treatment and prevention of metabolic diseases and alimentary toxicoses. Every disease is analysed in aspect of its incidence, mortality, economic losses and other problems, in particular in conditions of Latvia.

Issues of etiotropic, pathogenetic and symptomatic therapy (pharmacotherapy) are covered.

In the practical training (8-10 students per group) practical skills in animal clinical and biosubstrate laboratory examination are improved. Patients of the clinic are used. Control of knowledge is performed in the way of colloquiums and controlworks (tests) about diseases of every organ system. The subject studies ends in elaboration of a course paper, defence and examination.

Small animal internal diseases are equally taught. The studies of this discipline are improved by obligatory everyday clinical work of the 4th year students in the veterinary Education Centre clinic. Once a week there is a “clinical hour” when students report on the clinical cases in which they have participated the previous week; the cases are discussed. On the basis of these findings students elaborate a course paper. A 4-week practice is a part of the subject.

Surgical techniques, Topographical anatomy, Large animal surgery, Small animal surgery (incl. anaesthetics) is a block of subjects where the main principles and methods of operative surgery are obtained. Applying knowledge in topographical anatomy a rational operation strategy is formed, etiology, clinical and special diagnostic methods of surgical diseases are found out. Indications and contraindications of operative treatment. During the practical training most „popular” operations on patients of the veterinary Education centre clinic, equine clinic as well as in trips on farms and the Teaching and Research Farm „Vecauce” are performed. Students record the procedure of the operation, elaborate course papers, take examinations. The tasks are comprised in the programmes of the 3rd, 4th, and 5th year practice.

Obstetrics and gynaecology . Andrology, artificial insemination.

In the studies of these subjects the following material is obtained: anatomy of male and female reproductive organs, physiology and pathology, determination of pregnancy , pathology of parturition, post-partum and neonatal diseases, udder diseases, methods of artificial insemination and embryo transfer, features of the reproductive cycle and its disturbances. In the practical training on farms, on the Teaching and Research farm “Vecauce”, the LUA Horse Breeding Centre “Mušķi,”

In a slaughter house (as far as possible) students make pregnancy diagnosis, udder disease diagnosis and treatment. Perform laboratory evaluation of the semen and determine its suitability for insemination (impregnation) of female animals, acquire analysis of the herd reproduction data. Perform tasks during the practice in the 3rd, 4th and 5th year.

Infectious diseases.

Infectious diseases are covered by separate animal species according to the complex scheme: description of the disease both in historical aspect in the world and local aspect (in Latvia), characteristics of the disease agent, epizootological data, animal susceptibility, pathogenesis, clinical findings, diagnosis and differential diagnosis , treatment, prevention, immunity. The students analyse infectious diseases in comparison with other internal diseases, obtain the principles of administration of biopreparations, diagnostic tests of diseases. On the Teaching and Research Farm “Vecauce” students do tuberculinisation and assessment of its results, take blood samples for serological examinations. Students get familiar with instructions of infectious disease control and other legislation documents as well as OIE published materials.

The academic staff informs the students regularly on the changes of epizootic situation in Europe and Latvia. The students get individual tasks in the practice and collect material for the course paper.

Clinical pharmacotherapy

Clinical pharmacotherapy comprises principles of the choice of drugs for the treatment of diseases and prevention; pharmacological and toxicological aspects of drug compatibility; undesirable effects emphasizing in particular antimicrobial means in case of their combination; the recent registered veterinary drugs in Latvia and their comparative, evaluation (<http://www.pvd.gov.lv>); the system of pharmacovigilance and registration of undesirable effects caused by drugs; clinical aspects of drug groups. The main principles and means of pharmacotherapy of some organ systems.

Forensic veterinary medicine

Analysis of a legal and antilegal deed. Basis of legal procedures of forensic investigations. Classification methods of causal relationship. Methods of resolution making in cases of violation of the Labour law, Administrative Code, Civil law, Penal law. Participation in cases of investigation carried out by decision of the State police, prosecutor's office. Acquaintance of laboratory work of the Bureau of Forensic Medicine LR (pathological anatomy, chemistry-toxicology, biology, forensic science). Participation at the sitting of the court. The students have access to 200 cases of forensic investigations and special literature.

Diseases of small animals

This block comprises separate study subjects – poultry, bee, fish, laboratory and exotic animal diseases. Amount of the subject is 160 h (6.5 CP). Students acquire biological peculiarities, anatomy and physiology, causes of diseases diagnostics and control of these animals in accordance with the EU and local conditions and legislation in Latvia.

In the subject Poultry diseases students get acquainted with regulations on productive poultry keeping (breeding), care taking and nutrition on different kinds of farms as well as receives information about production of eggs of high quality for food (SIA “Balticovo”), broiler and meat (A/S “Ķekava”, A/S “Lielzeltiņi”). Students practise in performing pathoanatomical

necropsies on hen cadavers and analyses the obtained results. The students have access to books (>50) and visual aids about poultry diseases.

D Food Hygiene

The role of veterinarian in food control system increased considerably after the establishing of the State Food and Veterinary Service in Latvia. There was a serious reason to revise and to improve the study programme in food hygiene to fulfil most important requirements from the labour market nowadays. Since the study year 2001/ 2002 new Curriculum at the Faculty of Veterinary Medicine came into force where significant changes were done to some subjects like Food Hygiene. The students have to understand and to learn necessary skills to start work in different areas in public health. Veterinary students have to understand the whole food chain, especially the chain of food of animal origin and most of all processes going on “from stable to table”. Therefore the study programme in food hygiene includes several topics taught by different teachers: food technology, food control and inspection, meat hygiene/ meat inspection, foodborne infections, food toxicology and national, international (EU) legislation on food control/ food trade. New and very important issues are involved and emphasized in the subjects mentioned above: animal welfare (transport to slaughterhouses, *ante- mortem* handling, ways of stunning and its evaluation etc.), EU regulations on *post- mortem* meat inspection/ meat hygiene, self- control system (HACCP) in slaughterhouses, meat processing, dairies, fish processing and other food plants. Foodborne infections is also a new subject taught at the FVM which includes epidemiology, sources, transmission routes, detection methods and characteristics of most important foodborne pathogens like *Salmonella* spp., *Campylobacter* spp., *Listeria monocytogenes*, *ETEC/ EHEC*, *Clostridium botulinum*, *Vibrio* spp. and others. It is very important that students during the Food Hygiene subjects go out on field trips to very different slaughterhouses, meat processing plants, dairies, fish processing plants etc. to be acquainted with food plants of different development stages and different problems. Subjects are taught with very close co-operation with people from the Faculty of Food Technology, the State Food and Veterinary Service, Veterinary laboratories.

E Professional knowledge

The aim of the subjects is to develop organisational skills of veterinary work within the framework of legislation, formation of opinions of professional ethics, evolution – the absolute and the relative in the ethical categories.

The students get acquainted with legislation and resolutions of the Republic of Latvia and the EU, veterinary legislation, regulations on organising surveillance and control measures of contagious diseases, production and distribution of veterinary drugs as well as basic rights and obligations of animal owners.

In the section “Veterinary information and documentation” principles of entrepreneurship in veterinary medicine.

Professional ethics. History of basic requirements of public morality. Requirements of the Code of ethics of the Latvian, World, USA, Ireland, Polish and other associations of Veterinarians. The veterinarian attitude to animals (productive, non-productive, wild, non-desirable/harmful, clients, colleagues, society and nature. Basic requirements of professional behaviour (deontology) in various work situations. Moral and legal responsibility for violation of professional work. Discussions, seminars with veterinarians (5-6) at their place of work employed in different fields of veterinary medicine. A written essay about issues of professional ethics.

In the section Current issues of veterinary medicine the latest problems in the veterinary service of the LR and world, elaboration of legislation and implementation into practice.

At the end of the theoretical course a course paper is elaborated where the student has an opportunity to apply the obtained theoretical knowledge.

F. Humanities

There are 7 subject of humanities: philosophy, applied psychology, esthetics, basics of jurisprudence, professional foreign language, human protection and physical education, sport.

Acquisition of humanities promotes cognition of philosophical and aesthetical values, in society, develops and improves the individual's understanding of cultural processes, sense of life, non-traditional approach to the application of types of cognition.

Human protection – the students obtain prognostication of situations, risk evaluation as well as organisation of safe work.

Basics of jurisprudence – students get familiar with the power division hierarchy of the state and the branch of rights, Constitution, civil rights – heritage and labour; land property and rights to vocation. It is important for students to understand the principles and notions of jurisprudence because it is necessary for the private practice entrepreneurship, and the specialist being competent in legislation is more protected.

The part of obligatory subjects of the programme is mandatory and must be taken by all the full-time undergraduate students: lectures, practical teaching and practice must be attended in the determined volume and in compliance with the programme.

If the student has not attended (has not participated) any of the items during the period of mastering the study subject, then in the programme of the particular study subject requirements are stated on the order the missed sessions must be covered:

- Covering of sessions takes place outside the time planned for sessions;
- The student coordinates with the subject leader mutually on the time to cover the missed session;
- The student independently have to get acquainted with the theoretical content of the theme and material to be obtained in laboratory.

Control of attendance of lectures (practical sessions) take place in the beginning of the lecture when students are given a list to sign in, but in clinical work and field-trips on farms students are registered by the teacher in the Register of attendance which operates as a document.

At the end of the lecture (session) adequacy of the signature may be controlled. Taking into account the session attendance, students have to pass either a test of examination.

4.7. Specific information on the practical clinical training.

All students (from 1st to 6th year) are involved in the practical clinical training that must be done as an integral part of the programme.

The aim of the clinical practice is to provide students an opportunity to gain skills necessary for independent work and at least a little experience of the clinical work. Improvement of theoretical knowledge and skill to apply it in the practical work of the veterinarian.

The most suitable base for the clinical practice would be the FVM clinic where groups of students under the guidance of the academic staff and veterinarians of the divisions of the clinic would fulfil the programme of the clinical training according to the rotation principle, i.e., would cover a certain number of days in each of the divisions.

The FVM of the LUA has not succeeded to implement such an optimal organization and optimal version of the practical neither until 1990 nor during the latest 10 years since Latvia has regained its national independence. At present and as it used to be earlier the number of animals for fulfilment of the programme of practice has always been insufficient. Only the reasons differ.

Now after economic and social changes which have taken place in Latvia there are many small farms. Small cattle and pig herds are typical of animal husbandry in Latvia (95% of farms has one or two cows) therefore, production costs are high but profit is very small. In such circumstances the owner of a sick animal is forced to use the cheaper local veterinarian service refraining from much larger expenses for transport and treatment in the FVM clinic.

The economic situation in animal husbandry of Latvia dictates to use the only alternative of the practical training, i.e., to appoint students to the practice on the bases of mutual agreement with private practitioners in the rural districts to the large animal disease practice (cows, pigs, sheep, goats), but to the small animal practice - dog, cat, exotic animal diseases practising in the city private veterinary ambulances and clinics.

One or too rarely students are appointed to a veterinarian who agrees to teach them for no reward in accordance with the practical training programme worked out at the faculty. The Latvian Association of Veterinarians has pronounced its opinion that veterinarians would be competent to receive some reward for the practical teaching, however, they still supervise the practical training receiving nothing for it because they are aware that the faculty has no financing envisaged for this purpose.

Individual practical training supervised by a veterinarian in comparison with that in the clinic has its drawbacks and advantages. As a weakness should be considered the fact that there are not possibilities to employ the necessary laboratory examinations in making diagnosis. Devices and therapeutic procedures are also not available which can be offered in the clinic conditions; whereas on the field-trips to the sick animals the trainee has an opportunity to see and assess conditions of animal keeping and feed quality. The students can collect more objective information important for making diagnosis. Especially important is the possibility of analysing the epizootic situation in cases of contagious diseases when decisions should be taken quickly not allowing the spread of the disease and to prevent people infections. The trainee can observe the veterinarian calling in assistants to participate in the animal restraint performing surgical operations or other manipulations. It is important for the trainee to observe and assess the cultural level of doing the job and ways of expression of professional ethics of the veterinarian at work.

The practical training programmes are elaborated by the teaching staff of the FVM institutes. They are confirmed by the councils of the related institute.

The practical training in anatomy, physiology and zoology are done by the programme worked out at the Preclinical institute.

The practical clinical training in herd health and reproduction, individual clinical practice as well as the practice in small animal diseases takes place by programmes worked out in the Clinical Institute. The clinical Institute works out internship programme as well.

By the programmes worked out in the Food and Environmental Hygiene the practical clinical training in the large animal diseases, in laboratories of the State Veterinary Diagnostic Centre and in food hygiene and inspection.

Table 4. 7. Practical training in study years

Nature of work	Minimum period (weeks)	Study years	Credit points
Anatomy, zoology, botany	3 (1+1+1)	1 st year, 2 nd semester	3 (1+1+1)
Practice on teaching and research farm “Vecauce”	1	1 st year, 2 nd semester	1
Animal physiology	3	2 nd year, 2 nd semester	3
Herd health and reproduction	3	3 rd year, 2 nd semester	3
Practice on teaching and research farm “Vecauce, Individual clinical work	3	4 th year, 2 nd semester	3
Small animal diseases	4	5 th year, 1 st semester	4
Laboratory diagnostics	2	5 th year, 2 nd semester	2
Large animal diseases	5	5 th year, 2 nd semester	5
Food hygiene and inspection	4	5 th year, 2 nd semester.	4
Clinical work	2.5	1.-6. years	2.5
Internship	16	6 th year, 2 nd semester	6
TOTAL	46.5		36.5

In the first study year for all students it is compulsory:

- clinical work in the hospital – 40 h
- practical agriculture on the training and research farm “Vecauce” – 40 h
- teaching practice in anatomy, zoology, botany – 40 h in every subject

Clinical work in the hospital students do individually under supervision of teachers, veterinarians and the supervisor of the hospital acquainting themselves with breeding, rearing and feeding of ill and healthy animals as well as with diagnostics and treating of diseases, with preventive work and work with customers.

First year students acquire *skills in practical agriculture* in academic groups getting to know the specifics of agricultural production on the LUA training and research farm “Vecauce” – in

animal husbandry, prevention and treating of animal diseases, agronomy, economics, principles of processing technology of agricultural products.

The practice is supervised by teachers and specialists of the corresponding branch of the training and research farm “Vecauce”. Theory (lectures) as well as practical skills in every definite branch are acquired. In the conclusion – individually written and defended report.

Teaching practice in anatomy, zoology, botany. Duration of the practice is 1 week in every subject. The first year students who have successfully acquired the theoretical course in the corresponding subject are having practice under supervision of teachers of the corresponding subject, subgroups in anatomy; in zoology and botany – practical work groups.

The tasks for the **teaching practice in anatomy** – be able to apply the knowledge acquired in lectures and practical work in contact with live animals. *Test.*

Teaching practice in zoology is a continuation of the theoretical course where students get acquainted with diversity of animal species, land and fresh water biotops in Latvia. Students acquire the skills to determine the species of the most wide – spread animals in nature. *Test.*

Teaching practice in botany, pharmacognosy is an addition to the theoretical course. Students get acquainted with useful and toxic plants, their structure and how to recognise them, prepare herbarium of a definite number of plants. *Test.*

In the second year of studies all students have compulsory clinical work in the hospital (40 h) that is carried out individually under supervision of veterinarians, supervisors of the hospital and teachers improving and developing the skills obtained during being on duty in the first year in animal breeding, grooming, feeding, taking part in ordinations for in – patients.

- teaching practice in physiology

Duration of the practice is 3 weeks. Students have practice individually and also in small groups (2 – 3 students). Practice takes place on farms specialising in animal breeding, Riga zoological garden and private veterinary clinics. Students apply the knowledge acquired at lectures on physiology and laboratory work using the knowledge in contact with live animals. *Test.*

The programmes of teaching clinical practice are structured so that before every next practice students have acquired the theoretical course of the tasks included in the programme of practice or have passed an examination or acquired at least a part of the theoretical course and got a test for laboratory work.

As the clinical teaching practice is individual and it takes place in one working place it is not possible to use the rotation principle according to preliminary planning except two cases:

The first – one week in the middle of the second semester of the third year 3 weeks clinical practice limit in herd health and reproduction is used for the teaching practice on the LUA training and research farm “Vecauce” on a dairy farm. It is carried out according to the so - called rotation principle. Three to four teachers simultaneously work with a group of about 10 students. The change of groups takes place after every 2 hours of work. In this way the third year students get practical skills in clinical diagnostics, gynaecology and obstetrics, surgery, sampling material necessary for laboratory examinations, acquire different methods to use medicine and some other manipulations, for instance, in surgery.

The second – principle of rotation is used during the teaching practice in the laboratories of Diagnostics of animal diseases and food control accredited by the State Veterinary Diagnostic Centre.

In every sector or part of the laboratories mentioned about 2 – 3 five year students get acquainted with the work of the sector for 1 –2 days.

The trainees have to register the work done in the practice every day in a teaching practice diary of a definite form. The trainee must write a report of analytical character about the fulfilled tasks of the programme. The diary, review and reference of the veterinarian on assessment of the trainee during the practice should be handed in at the institute of the FVM organising the practice.

The final assessment of the trainee is done based on the review on fulfilment of the programme with a test.

For clinical practice in diseases of large animals an examination should be taken.

In The third study year the teaching practice

- **herd health and reproduction**

is compulsory.

Duration of the practice is three weeks. For one week the students are working on the training and research farm “Vecauce” under supervision of the teachers of the following subjects:

- obstetrics and gynaecology ,
- large animal surgery,
- clinical and laboratory diagnostics,
- epizootology,
- internal diseases, herd health.

Students spend the other two weeks practicing in rural regions under supervision of veterinarians specialised in veterinary medicine of agricultural animals.

The place for the practice is offered by the practice supervisor or students themselves can choose it.

The practice programme includes tasks that are carried out under supervision of a veterinarian having private practice. The students get acquainted with and develop skills in the following fields:

- 1) organisation of veterinary work in rural conditions,
- 2) skills in clinical examination of animals,
- 3) skills in diagnostics of non – contagious, contagious and surgical diseases,
- 4) carrying out preventive measures,
- 5) selection of materials for elaboration of the course paper in obstetrics and gynaecology.

For this teaching practice there is an individual task that should reflect the situation of reproduction of the herd of a definite farm. *Test.*

Besides that in the third year of studies every student (4 days during the study year) works in the Veterinary Medicine Education Centre clinics and the laboratory of clinical diagnostics of the Clinical institute according to individual schedule.

In the fourth year of studies

- **the clinical teaching practice** (3 weeks) is obligatory.

The students have this practice **individually under supervision of a practising veterinarian**. The students improve their skills in clinical examination of animals, clinical and pathological – anatomical diagnostics, surgery, internal and contagious diseases. During the practice a review must be written and handed in to the supervisor of the practice within one month after returning to studies. *Test*.

During the whole study year it is compulsory for the fourth year students to be on duty at the clinics of the Veterinary Medicine Education Centre under supervision of veterinarians – ordinators. There the main work is with small animals – in-patients and out-patients. In the study year every student works in the Veterinary Medicine Education Centre clinic for 2 weeks.

In the fifth year of studies teaching practice is compulsory in:

- **small animal diseases** – 4 weeks
- **teaching practice in laboratories** – 2 weeks
- **large animal diseases** – 5 weeks.

The practice in small animal diseases takes place at veterinary care enterprises under supervision of licence holding veterinarians. During the practice students get acquainted with specificity of diagnostics, treating and prevention of small animal diseases as well as with the structure, material – technical supply of small animal veterinary clinics, veterinary documentation, medical and preventive work costs. *Examination*.

During the teaching practice in laboratories students get acquainted with laboratories of the State Veterinary Medicine Diagnostic Centre and their diagnostics equipment, possible diagnostic examinations as well as with food and animal feed analysis methods. The aim of this two-week practice is to learn the methods of accredited laboratories in diagnostics of diseases and determination of the quality of foodstuffs. These are the newest methods of diagnostics and students get acquainted with them during the practice, it is not possible to teach them in the laboratories of the faculty. *Examination*.

Teaching practice in large animal diseases. Duration of the practice is five weeks (a whole working day or being on duty according to the needs of the patients) under supervision of a

veterinarian having private practice. The tasks – to get acquainted with organisation of veterinary work in rural conditions, internal non-contagious diseases, clinical and pathological - anatomical diagnostics of gynaecological and surgical diseases, treatment, prevention.

In the second semester of the fifth study year

- **teaching practice in food hygiene and inspection** – 4 weeks is compulsory.

The aim if the practice is to acquire practical skills of veterinary inspection of slaughter products in slaughterhouses, meat processing plants, market veterinary inspection laboratories. During the practice the student carries out separate tasks under supervision of the responsible specialist applying the most up-dated methods. *Examination.*

In the second semester of the sixth year students have pre-diploma practice:

- **internship practice** – 16 weeks.

This practice takes place in all branches of veterinary medicine – in large and small animal clinics, food enterprises as well as in the branch chosen by the student in which he/she will work as a veterinarian (for instance, Small animal clinics). During the practice students participate in examination of animals, diagnosing, treating of animals and in pathological – anatomical necropsies. Having practice at food hygiene enterprises students participate in food product inspection, evaluation, control of the production process hygiene, disinfection of equipment. The aim of the practice is improving and practical application of the obtained theoretical knowledge. In this practice every student works individually. *Examination.*

4.8. Specific information on the practical training of food hygiene

During the 9th semester the 5th year students have practical training in meat hygiene/meat inspection in the slaughterhouse “Kompeksim – Nākotne”. The slaughterhouse is located 18 km to the south of Jelgava. This is a low capacity slaughterhouse specialising in pig and cattle slaughtering. Visits to the slaughterhouse are organised during the study week.

The students of the 5th year are divided into three groups (about 10 students per group). Every group has about three hours training at the slaughterhouse per week (that is three to four weeks (times) per semester).

Two trainers are appointed to every student group: one is a meat inspector from the slaughterhouse and another is a teacher of meat hygiene/ meat inspection from the Faculty of Veterinary Medicine.

Besides, students have several other visits (study excursions) to other slaughterhouses (large and small scale) in Valmiera, Limbazi, Jelgava region and others, to meat processing plants (Valmiera “Trials”, Jelgava), fish processing plants (Salacgriva “Brivais vilnis”), poultry factory- slaughterhouse, poultry processing (Riga region “Kekava”) and others. All together there are two to three such visits during the academic year. The list of food establishments can be changed after every or every second year because that depends on the local office of the Food and Veterinary Service as the main responsible authority for these visits.

2 COMMENTS

The present curriculum of the FVM has been implemented since the study year 2001/2002. Instead of 5 study years previously 6 study years have been introduced including the following:

theoretical and practical training at the FVM, teaching practice (every year) and internship practice in the last year of studies.

The implemented curriculum is more suitable for the requirements of veterinarian training for carrying out veterinary work today. Studies have been enlarged in the “food quality and hygiene control subject block”, yearly practices are longer.

Nevertheless, in relation to the changes in the structure of agricultural production, especially in animal husbandry (essential decrease in the number of animals, formation of small farms), several problems have arisen in acquisition of practical skills in veterinary work as the number of farm animals and horses as well as patients of the FVM clinics has decreased (for farmers medical help in the place of residence is financially more suitable). Although the

herds of the training and research farm “Vecauce” and some other larger private farms are used, theoretical training comprises considerable proportion in the study process. Shortage of large animals – patients is in some degree compensated by the animals of the Clinical institute (cows, calves) as well as experimental animals. At the same time there are many patients – small animals.

For solution of the problem co-operating with Jelgava Food Veterinary Service contracts are signed with the local largest farms and agrocompanies near Jelgava where it could be possible to have field-trips in clinical disciplines, by help of the Latvian Association of Veterinarians “a bank” of permanent places for practice of the FVM students is organised. Internship practice will be organised in a similar way.

Supply of equipment for teaching and scientific work at the FVM is not sufficient. The present most up-dated equipment at the FVM has been purchased mainly by attracted investments. Shortage of equipment in some extent is compensated co-operating with the State Veterinary Medicine Diagnostics Centre where students can learn about the most up-dated equipment and methods of examination in our country as well as master and doctoral students of the FVM can do a part of their research there.

Considerable difficulties have arisen due to the changes at Jelgava meat processing plant (animals are not slaughtered there any more): it is not possible to get organs of animals in due time and sufficient amount, to organise attendance of the pre-slaughter department for carrying out clinical (also gynaecological, surgical) examination, veterinary inspection of slaughter products etc. The problem can be solved signing co-operation contracts with large meat processing plants and carrying out training of students according to weekly session block system, obviously, there will be considerable difficulties in solving this problem – transport, accommodation of students and teachers in the cities that are located more than 100 km from Jelgava (Cēsis, Tukums).

As it was mentioned above, the present curriculum is valid since the study year 2001/2002, i. e., in fact, this plan is in the stage of approbation so it needs further development. In some subjects relatively higher proportion is comprised by theoretical teaching (lectures) in comparison to practical work.

It can be partly explained as follows:

- insufficient level of material technical resources (Virology, Immunology, General pathology);
- in studies of subjects students need to acquire large amount of legislation acts, normative documents, instructions etc. and it is easier to do it at lectures (Infectious diseases, Marketing);
- being daily on duty at the FVM clinics can be considered as practical and clinical work in the field of small animal internal diseases;
- field-trip organisation in such subjects as obstetrics and gynaecology, and internal diseases, herd health partly compensates the shortage of practical work.

In any case in the future developing the curriculum structure, the FVM material technical resources, co-operation with Food Veterinary Services of regions and owners of the largest farms it is envisaged to increase the amount of practical work in the total time budget of studies.

Also in the present curriculum the ratio of theoretical/ practical and clinical training is 1/3 and the ratio of clinical training/theoretical and practical training is 1/1,6, what is satisfactory and generally complies with the requirements of “Evaluation of Veterinary Training in Europe Standard Operating Procedures”.

It should be stressed that implementation of the present curriculum allows for training of sufficiently well-qualified veterinarians able to work in the sphere of clinics, food inspection, in the system of Food Veterinary Service and other fields.

The graduates from the FVM are highly demanded in the labour market.

3 SUGGESTIONS

In order to improve the proportion of kinds of sessions in the study programme:

- to change the structural proportion of the kinds of sessions in the total budget of hours increasing the number of practical training without increasing the total number of lessons;
- in this way individual work of students will be activated;

- it is important to increase (within the limit of possibility) the number of in-patients and out-patients in the clinics – hospital, especially large animals (cows) to completely ensure clinical and practical training of students.

Chapter 5 – TEACHING, QUALITY AND EVALUATION

1. FACTUAL INFORMATION

5.1 The teaching programme

The quality of the teaching programme of the Faculty of Veterinary Medicine (FVM) of the Latvian University of Agriculture (LUA) is being supplemented, analyzed and evaluated periodically. It is carried out in the framework of the self-evolution programme by the University Study Council and the Faculty Study and Methodical commission authorized by the Faculty Council.

International inspection and accreditation of the FVM study programmes (undergraduate, master and doctoral) took place in 2001. A 6-year undergraduate Veterinary Medicine study programme was checked and assessed positively. Evaluation was organized by the “Centre of Higher Education Evaluation” Ltd, a non-profit organization. The organization’s powers of reference covered the completion of the commission of experts (assessment panel) and team leader, and arrangement of inspection visit to the FVM. Before the visit experts got acquainted with the self-evaluation report of the FVM study programme. During the visit experts compared the latter with reality by controlling programmes of some study subjects, participating in lectures and practical training classes, listening to the information provided by students representing the different programmes taught by the Faculty, and Veterinarians graduates from the Faculty. Attention was paid to the content and diversity of methodical materials as well as provision of textbooks, manuals and other relevant literature.

The panel was interested especially in the number of animals and their types used for students training, and students practice in veterinary establishments and enterprises. Having received the report of international experts, the Ministry of Education and Science and the Department of Higher Education and Science assessed and accredited the veterinary medicine study programme for the period of 6 years, presenting an accreditation documents. Study modules of certain specialties, including veterinary medicine, and the foreseen changes are discussed at the Department of Higher Education and Science of the University of Education and Science of the Republic of Latvia.

Changes of subject programmes are discussed at the FVM Study and Methodical Commission and presented to the Faculty Council for discussion and approval. Veterinary Medicine study programme is constantly being upgraded taking into consideration the development trends of veterinary science in the world and changes in the socio-economic life of the country and following the new accepted regulations for consecutive study programmes in Latvia. The programme is also overviewed taking into account the new tendencies in social life and needs and problems that weaken veterinary practice, as well as the new trends of veterinary science and legislation accepted in compliance with EU Directives EEC 78/1026 and 78/1027, taking into account the recommendations of representatives of the State Food and Veterinary Service.

Course notes with a stated content of all disciplines are used as additional material to main manuals. Besides, teachers of departments have prepared a lot of additional methodical appliances (video films, CDs, Overheads, multimedia systems etc.).

Scientific research and teaching activities are the base for the fulfillment of the veterinary programme at the FVM.

Subject programmes of each of the FVM institute are developed on the basis of higher educational experience in veterinary medicine abroad, on principles of Food and Veterinary Service activities and programmes of research establishments.

Some of the FVM institutes have come to an understanding or signed co-operation agreements with food production enterprises, food inspection laboratories, farm establishment and farmers. During the practical training period in these establishments students do practice, collect information for their course papers and do research.

The base of agreement is to assure the practical ground for veterinary doctors.

The Faculty of Veterinary Medicine has established successful co-operation agreement with many foreign firms, international veterinary organizations: EAEVE, NOVA – BOVA, OJE, Association of Veterinarians of the World Organization for Animal Health, World Health Organization and others.

Co-operation agreements enable us to prepare concrete scientific and study projects among different divisions of universities, scientists and students.

Part of the project is associated with exchange of students. Students may perform their practical training abroad if they have an invitation from a certain company or private persons or University (Germany, Poland, and USA).

In general, as the base of the teaching of subjects is such a pedagogical approach to facilitate perception of the most important idea of the particular theme as quick as possible without any difficulty. In this connection prepared video films together with commentaries are very helpful, as well as acquisition of practical skills handling with various materials (including pathological material). Every academic staff member has acquired the proper pedagogical approach or is having acquired them participating in the courses organized at the Faculty of Social Science LUA.

Apart from demonstrations of video films in multimedia prepared materials as CDs are widely used (in anatomy, histology, food hygiene and inspection veterinary pathology, structure of veterinary service), as well as materials prepared in institutes and Information Centre (anatomy, pathological physiology (general pathology), obstetrics and gynaecology, food hygiene and inspection, structure (organization) of veterinary service, epidemiology, virology, immunology, infectious diseases and others). The most interesting cases in internal diseases, surgery, obstetrics and gynecology during the practical work are videotaped and afterwards analyzed and discussed with students.

Textbooks and other relevant literature in foreign languages (English, German, Russian) necessary for six-year-study course is available in reference book resources in all institutes, International Centre of the FVM, University Central Library and reading hall. As a drawback should be mentioned insufficient amount of textbooks in Latvian. However, we cannot but mention such textbooks, manuals and teaching aids as A. Garančs “Physiology in questions and answers”, R. Trubka “Infectious diseases of domestic animals” part I, II, O.Parčinskis, A. Strupulis, L. Javaite “Technique of necropsy, inspection if organs and tissues in mammals” 6th rev.ed., P. Keidāns, A. Krūklīte”Diagnostics of parasitic diseases in domestic animals”, G. Pētersons “Laboratory guide in zoology”, M. Parčinska “Faculty of Veterinary Medicine LUA”.

In recent years textbooks of different subjects in foreign languages are supplemented with methodical descriptions prepared in Latvian by our teachers.

Along with studies at the Faculty students go to the state Veterinary Diagnostic Centre and practice in food control and animal disease control laboratories. The latter and the FVM have a bilateral long – term agreement of co-operation. Length of the practical training there lasts for two weeks for the 5th year students. It is based on the principle of rotation when students do practice in all the laboratories of the Centre. There is also an agreement signed between the Institute of Food and Environmental Hygiene FVM and Laboratory of Jelgava Veterinary Department, this is collaboration on examination of pathological material, bacteriological, serological and coprological tests. Private associations and food processing establishments (meat, dairy, fish) also provide environment for practical training, for example, in the 9th semester the 5th year students are trained in meat hygiene (slaughter products inspection) in the slaughterhouse /meat processing establishment “Kompeksim –Nākotne”. This establishment is situated 18 km from the FVM in Jelgava region. Every year the 5th year students visit different food production/processing establishments within the framework of the study subject Food hygiene in different regions of Latvia, for example:

- Slaughterhouse /processing enterprise “Triāls”, Ltd;
- A/S “Vidzemes piens”,
- “Valrit”, Ltd,
- A/S “Limbažu piens”,
- Fish processing enterprise “Brīvais Vilnis” and others.

Veterinary medicine study programme includes 8 practical trainings outside the FVM:

- Anatomy, zoology, botany;
- Farm work on teaching and research farm “Vecauce”;
- Physiology of domestic animals;
- Herd health and reproduction;
- Small animal diseases;
- Large animal diseases;
- Laboratory diagnostics;
- Food hygiene and inspection

Every year practical training in large animal diseases takes place for the 5th year students. Supervisors, academic staff, students and practitioners veterinarians are involved in selecting the place of practical training. Students have hands-on training in the following places:

- In state sector – Regional Departments of Food and Veterinary Service, as well as with chief food and veterinary inspectors;
- In private sector – different private enterprises and private practices. The most popular places of practical training are the following:
 - “Līvāni Veterinary Service” Ltd;
 - A. Zālītis and E. Juitinovičs’ Veterinary Service” Ltd;
 - “Veterinary Education Centre” Ltd;
 - “Gutta-5” Ltd;
 - “Zemzaris and Obodņikovs’ Veterinary Service” Ltd;
 - Stende Plant Breeding Station;
 - Rīga Zoo ;
 - Jelgava Veterinary Department of Food and Veterinary Service etc.

Some students do practice in foreign countries every year (Germany, Düsseldorf, Veterinarian H. Kuster; Poland, Dabrova Bialostocka, veterinarian M. Waszkiewicz and others).

Besides, students learn the practical aspects of clinical subjects by participating in making diagnosis, treatment and surgeries in the small animal and equine clinics at the Veterinary Education Centre LUA which was established within the framework of the co-operation between the Danish and Latvian Associations of Veterinarians. This practice is organized by the Faculty and Centre administration based on the principle of rotation (3, 4, 5 year students).

In the 12th semester the 6th year students will go to residential practice that will last till the end of semester in any of the regional departments of Food and Veterinary Service Choosing the preferable profile of the future occupation as far as possible.

5.2 The teaching environment

The policy of the staff continuing education at the FVM and LUA is oriented to provide its competence training for doctor’s thesis involving the personnel to long term professional continuing training courses at foreign universities and applying short term qualification improvement forms (seminars, courses, conferences, preparation of scientific articles and

reports etc.). There is a consequent and consistent policy of the academic staff qualification and competence, as well as its recruitment at the LUA.

The teaching environment at the LUA including the Faculty of Veterinary Medicine is formed by the academic staff (assistants, lecturers, docents, associate professors, professors, senior professors) and support staff (laboratory assistants, senior laboratory assistants, hospital attendants, office-cleaners). The order of elections of the academic staff is laid down in the “Regulations on elections to the academic staff positions” approved by the Senate of LUA on 12 March 1997. These Regulations are developed in compliance with the Law of the Higher Education in the Republic of Latvia. Every academic staff member has an opportunity to undergo every stage of the staff’s degree starting from an assistant and ending with a professor. Of course, this process depends on the person’s erudition, intellect, level of professional knowledge, abilities and skills of positive communication. However, the age limit should be taken into account regarding the elected positions, namely, elected professor, associate professor, docent, lecturer, assistant position can be occupied by a person not exceeding 65 years of age. According to the Regulations, rector has the right to conclude an agreement with the person at this age for one year to fulfill the duties of the respective position if the institute or faculty presents a relevant proposal and the person has an adequate scientific or academic degree.

Regulations also provide for the main requirements to be met by applicants for the academic positions.

For an assistant position can apply persons with a Master’s or Doctoral degree capable to do the practical training and research. Assistant’s duties are provided by the structural unit.

Assistant without the scientific degree must have a 5-year-work experience in the field of the subject to be taught.

For a lecturer position can apply persons who have a Master’s or Doctoral degree, scientific publications or published teaching materials/aids which correspond to the profile of the institute, persons capable to deliver lectures, hold seminars, and practical training. Lecturer’s duties are provided by the structural unit.

Lecturers without the scientific degree must have a 5-year-work experience in the field of the subject to be taught.

For a docent position can apply persons who have a Doctoral degree, scientific publications and teaching aids in the field of science sub-branch. Candidate's research and academic work experience in total should be no less than 5 years; at least one year of them is academic work at a higher school (university) or equal to that, the division of what is made by the Faculty Council.

In order to elect a person to a docent position who has no scientific degree, he/she should have at least 10 years of practical work experience and possess teaching skills.

Due to the need to provide the Faculty of Veterinary Medicine with younger teaching staff, there are opportunities to be involved into the teaching work for one year just after graduating from the faculty with the LUA vice-rector for studies permission. Besides, on 3 December 1998 the LUA Senate approved the Regulation on the cancellation of study credits (loans) for those graduates who apply for a teaching position. Such an opportunity could be of interest in most talented students to take a credit without any concern for settlement of it. Students who have expressed their desire to work as teachers at the LUA after graduation receive higher stipends. Accelerated change of generation is of great importance as the older age groups of the academic staff lack the motivation to upgrade their scientific and pedagogical qualification.

Work at the Faculty ensures the young academic staff members certain advantages that contribute to their motivation to do the teaching job:

- work at the university enables to perfect yourself as personality;
- desire to associate your activity with research and teaching;
- academic freedom;
- great opportunities of international collaboration and acknowledgement;
- a paid 56-day-leave yearly for teaching staff members;
- risk to lose job is lower.

Performing the educational work, there is opportunity to improve your financial conditions provided the young academic staff member is perspective and creative enough. There are some of the opportunities:

- salary is higher to those young teachers who have undergone continuing professional training abroad, are fluent in some of the foreign languages, have acquired computer technique and are able to conduct the student training in foreign languages;
- change of generations enables to obtain quick promotion, and salary is raised in that way;
- LUA administration is ready to cancel a credit (study loan) for those graduates who apply for an academic position at the university;
- it is possible to join any scientific grant contract receiving extra salary;
- it is possible to improve your professional qualification abroad on the base of international co-operation agreement;
- apart from teaching you can take a fulltime doctoral course and receive scholarship.

Potential of the academic staff development at the FVM is wide starting from a probation teacher till professor position, undergoing procedures of obtaining academic and scientific degree, constantly improving your skills in the field of the particular subject and gaining a success that is appreciated by students.

To assess the academic staff member's teaching quality and ensure proper circumstances for professional and pedagogical skills development, the university sociologists yearly perform anonymous questionnaires when students assess their teachers.

Every year the academic staff goes for qualification improvement to foreign universities. Professors and associate professors share their experience with the young staff specialists. Doctoral students of the 3th and 4th year are involved into pedagogical work as indicated in Regulations of doctoral studies training. The new pedagogical and scientific staff is being prepared in the FVM institutes, part of them is appointed to study abroad. Foreign scientists and specialists are invited to deliver lectures. Pedagogical staff is employed on the base of competition. The competition is announced in national dailies.

A consequent policy on professional improvement is executed at the faculty. Scientific – pedagogical staff is being assessed according to pedagogical workload, published scientific

articles, manuals, prepared methodical material, participation in conferences, seminars, etc. The Faculty authority visits lectures and practical work, the quality of it is being discussed. There is exchange of latest scientific information in institutes. In order to award the qualification of veterinary surgeon after graduating from the Faculty, state examination commission is formed including the leading teaching staff and the expertise of the particular branch.

Attestation regulations of pedagogical staff are sufficiently strict, and it assures improvement of the teaching quality. The academic staff takes an active part in continuing education process, consult veterinarians working in the production sector, do research, and participate in scientific and practical conferences, visit foreign universities that makes possible to improve and make better the teaching quality. Besides, the FVM teaching staff actively participates in preparation and harmonization of national veterinary legislation in compliance with regulations of EU directives.

FVM teachers take part in colleague's lectures and afterwards they have discussions in institutes. Lecturers from foreign countries come to give lectures, as well as officials of the Food and Veterinary Service of RL, State Veterinary Diagnostic Centre. Veterinary doctors working in production sector (poultry farms, food processing plants etc.) are invited to share their experience.

Professional development of the academic staff at the FVM is closely associated with obtaining the academic and doctor's degree. The young specialists are offered an additional training – postgraduate education leading to the Master's Degree of Veterinary Medicine in the following sub-branches:

- morphology;
- physiology;
- pathology;
- veterinary pharmacology and toxicology,
- internal diseases;
- parasitology;
- infectious diseases and microbiology;
- surgery;

- obstetrics and gynecology;
- food inspection.

Having completed the academic study programme successfully, applicant defends his/her research work and is awarded the Master's Degree (Mag. med. vet.) by the Master Examination Commission. Master's Degree enables the applicant to be promoted to a higher position that, of course, raises the salary and person's moral satisfaction.

Next step of promotion is elaboration of doctor's thesis in the above mentioned sub-branches of veterinary science. Applicant defends his/her promotion work and is awarded the Doctor's Degree (Dr. med. vet). Scientific degrees assures career way up till a professor position which, in its turn, raises your prosperity and poses more responsibility to develop the quality of the teaching environment for a certain study subject.

The academic staff members can be awarded the title of Full member of the Latvian Academy of Sciences or a Corresponding Member of the above mentioned Academy for outstanding achievements. As a reward for many year's standing pedagogical and research work the academic staff members can be awarded the title of Docent Emeritus or Professor Emeritus, or State Emeritus Scientist.

Besides, the Commission of Personnel of the Senate LUA and FVM reviews and decides on the increase of the minimum salary for docents, associate professors, professors and seniors professors taking into consideration their teaching competence and skills, scientific qualification and organizing activities. Assistants and lecturers receive additional payment to the minimum salary for the teaching quality.

Every talented, creative and recognized by students and public academic staff member can be awarded with a Diploma by university, local authorities ministries, professional associations and the Cabinet of Ministers. Latvian Association of Veterinarians presents its members skilled veterinary teachers with the Honorary Member title. As the highest state award the academic staff can be decorated with a "Three – Star Order".

A complex skill formation approach is applied at the FVM to improve the teaching quality that ensures a sequence of theoretical, laboratory and practical training. This, in its turn,

facilitates accumulation and a successful use of the acquired knowledge. Students' perception of the information delivered by guest lecturers is tested to control the acquired theoretical knowledge and practical skills.

The academic staff of the faculty uses the newest teaching and scientific literature on the particular theme (subject) for self-education purposes.

In many study subjects guest lecturers are invited from different Latvian establishments, enterprises and institutions. Most of them are from the Food and Veterinary Service of LR to talk about the latest legislation, tasks, structure, trends of activities of the Service in compliance with EU directives. An important contribution to the acquirement of theory and practical skills is made by guest lecturers from abroad (Germany, USA, Canada, Sweden, Denmark, Norway, Finland, and Poland). This co-operation is constantly being extended.

The Information Centre (library) of the FVM is regularly supplied with the newest information of the Food and Veterinary Service, which is available for students and the staff. In this connection, the programme of the subject structure of veterinary service comprises a section – Public health and current issues in the branch of food production and veterinary medicine.

One of the opportunities of the teaching quality improvement is implementation of the planned specialization theoretical and practical skills in the two last years of studies in co-operation with the Baltic and Nordic veterinary higher schools.

As an actual improvement of the teaching quality can be considered seminars and discussions on food hygiene and veterinary medicine. Apart from the academic staff guest lecturers are also invited to participate in these discussions. As an important part of the teaching quality improvement are seminars and discussions on clinical cases in the subject programmes of the Clinical institute (Internal diseases, Metabolic diseases, Small animal diseases, Operative and special surgery (surgical technique and surgical diseases), Obstetrics and gynecology etc.)

An important place in the teaching process takes visual aids – videos, slides, power point presentations, CD-ROMs which are obtained from both collaboration partners and made by

our academic staff (Zoology – G. Pētersons, Meat inspection/ meat hygiene – A. Bērziņš, Infectious diseases – R. Trubka etc.)

The teaching quality is also improved by the staff providing consultations according to the sequence of the studied subjects so avoiding from duplicating of theoretical and practical issues as well as to facilitate incorporation of the newest scientific achievements into study process.

At the end of a six-year-period of studies in the 12th term a residential practice is planned to take place in the chosen field of veterinary medicine. Defense of the practice and its evaluation show the level of professional qualification in the particular specialization.

5.3 The Examination system

At the LUA including FVM there is a central examination policy, i.e. a 10-point scale for evaluation of knowledge. This system was approved by LUA Senate on 13 March 1998 (decision No 232).

Apart from the 10-point scale there is such an evaluation of knowledge as “pass” and “fail”. Estimation must be written and signed by the lecturer both in the permit form and the student’s record book. Students’ knowledge is evaluated by a lecturer who is responsible for a particular study programme. The head of the department (director) is competent to assign some other academic staff or a commission qualified and competent in the study subject.

The teaching staff is competent to examine students only in case if they present their record books and their names are included in the list of a common or individual permit form. The teaching staff is not competent to add any name to the list of students.

The teaching staff is competent to state the requirements for successful subject studies which students are acquainted with at the beginning of the course. Requirements are dependent on peculiarities and organization of the study subject.

Criteria of evaluation of knowledge in a ten-point scale

Assessment	Verbal assessment	Assessment Abbreviated	Requirements for the subject programme acquisition level			
			Amount of knowledge	Understanding	Skills to apply knowledge	Acquisition of practical skills
1	2	3	4	5	6	7
10	With honours	w/h	Considerably exceeds	Deep, creative	Can apply the acquired creatively in new situations, application of the statements obtained in research	Skills on a very high creative level are acquired
9	Excellent	Exc.	Exceeds	Deep	Can apply the acquired knowledge creatively in new situations	Skills on a high level are acquired
8	Very good	v/g	Completely complies with the requirements	Very good	Can apply the acquired knowledge independently according to the requirements	Excellent level skills are acquired
7	Good	good	Material is acquired on a high level	Good but several drawbacks are stated in understanding of minor matters	Can apply the knowledge acquired almost in all themes	Skills on a good level are acquired
6	Above average	a/aver.	Material is almost acquired but there is a lack of knowledge in some minor matters	Almost good but at the same time insufficiently deep understanding of some problems is stated	Can apply the knowledge acquired only in the most important matters	Skills on a satisfactory level are acquired

1	2	3	4	5	6	7
5	Average	aver.	The most important basic matters are acquired but there is a lack of knowledge in minor matters	Satisfactory, nevertheless, understanding of several problems is not sufficiently deep	Can apply the knowledge acquired only in easy situations	Can do the corresponding work but there is a lack of skills
4*	Fair	fair	Generally the most important basic matters are acquired but there is no knowledge in minor matters	Almost satisfactory, but understanding of the essence of some problems is not sufficient and wrong	Difficult apply the acquired knowledge	There are some difficulties in doing the corresponding work
3	Poor	poor	Only the basic matters are acquired superficially	Insufficient understanding of the main problems	Cannot apply the acquired knowledge	The work can be done overcoming great difficulties
2	Very poor	v./poor	Only separate matters are acquired superficially	The main problems are not understood	Cannot orient oneself	Cannot do the work
1	Very, very poor	v.v./poor	Material is not acquired	Elementary understanding is lacking	No knowledge	Has no idea how to do the work

4* (Fair) is the lowest positive assessment

Making the final evaluation of examination, the teaching staff is competent to take into account students' work (activity) during the semester.

Higher academic professional education studies in veterinary medicine end in state examinations:

1. Contagious diseases, veterinary inspection of foodstuff, structural veterinary service;
2. Internal diseases, special pathology, animal and environmental hygiene;

3. Surgery, obstetrics, gynecology and artificial insemination.

The staff of the state examination commission is appointed by the LUA Rector's order and its activity is regulated by the Senate's regulation. Meetings of the state examination commission are open to public except discussions of evaluation and making a decision. Every person interested in can participate in the meetings of the state examination commission.

At the end of each semester there is an examination session or period of individual studies and examination when lectures and laboratory or practical work do not take place. The academic staff is competent to test and examine students after the study period and examination session if the student presents the Dean's individual permission. The dean of the faculty grants extension of the examination session. An application requesting to extend the examination session attached with the needed documents showing the necessity must be presented prior to the beginning of the period of individual studies and examinations. Exams and tests not passed during this period are considered as academic debts. The period of individual studies and examinations is envisaged for full-time students, their individual studies and taking tests and examinations (without teaching) as well as for consultations of the academic staff, in subjects before examinations. Between two examinations there must be at least 3 days.

At the LUA including the FVM these are established the following ways of taking examinations:

1. Continuous assessment when the students' knowledge and skills are assessed taking into account the marks for all the work he/she has done during the course and comprises all the content of the subject programme;
2. Examination taken in the period of individual studies and examinations comprising either all the subject or part of it if the subject is studied during several semesters.

Examinations can be written papers, oral, quizzes, multiple-choice questions, practical, clinical and laboratory examinations or mixed. Different support materials allowed by the lecturer may be used at the exam. Time limit of the examination for one student may not exceed 4 hours. The lecturer who examines students establishes examination procedure, questions and their nature.

One examination may be taken no more than 3 times. Repeatedly taken examination is permitted after paying a certain fee. For the third retake of an examination a three-staff commission is formed by the institution. If this commission also evaluates the learner's knowledge as unsatisfactory, then the student is allowed to repeat the course (subject) next year after having paid the fixed fee following the order established by the LUA Senate.

Students take an examination for the entire study subject. In exclusive cases, if the subject consists of several entities and the duration of the subject lasts for several semesters, then the student is allowed to take several examinations in this subject.

The examination schedule, with a 3-day interval between examinations, is drawn up in advance by a group of students. After coordination with the academic staff, not later than 2 weeks before the beginning of the examination period it must be confirmed by the dean of the faculty. Faculties (institutions) are competent to arrange examinations by setting down one's name on a list, i.e. announcing several dates when students can take examination in particular subjects, then students choose the date and sign. Students can take an examination in another time by an appointment if it does not disturb studies of other subjects.

The academic staff is competent to expel a student from the examination who does not observe ethics of taking examinations (who behave dishonestly, who are caught cheating) – use not allowed support material or other persons' help, behave offending the lecturer or others in the examination room. Repeated dishonest behavior can serve as a reason of discharge from the faculty.

Student should be informed about the evaluation of the examination on the day it has been taken, but not later than within 2 days in case of a written papers.

Presence of unauthorized persons in the room of examination is inadmissible.

Examination with a commission is allowed only by the dean's order with a list of the commission staff. An authorized representative from the student self-government must be included in the examination commission.

There is a practice at the FVM to make use of external examiners invited representatives from state employed and private veterinarians competent in the particular field.

Most students pass their examinations within the period of time of examination session.

At the FVM a sequence of studies and examinations of relevant study subject is observed. For example, if a student has failed in microbiology exam, he/she cannot take an examination in virology and further in immunology. If anatomy examination is not passed, one cannot take an examination in histology, physiology, general pathology, operative surgery (surgery technique) and topographical anatomy.

5.4 Evaluation of teaching

The quality of teaching at the FVM and preparation of veterinarians is evaluated by the references of the Food and Veterinary Service LR, Latvian Association of Veterinarians, practitioners veterinarians, leaders of enterprises and establishments. Lecturers attend the lectures and practicals of their colleagues and discuss them in the institutes. Information collected by the LUA Teaching Council and Teaching Methodical Commission of the LUA as well as the procedure of the study process enables to evaluate the teaching quality and suitability. The quality of teaching of lectures can be determined by anonymous questioning of students. It is carried out by representatives of the students' self-government and academic staff of the Faculty of Social Sciences according to specially developed tests.

5.5 Student welfare

An anonymous questionnaire about student welfare was carried out as follows:

Dear VMF student,

We kindly ask you to answer the following questions due to evaluation of the teaching system:

1. Place of living (accommodation) during the course of studies

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> student hostel | <input type="checkbox"/> with parents |
| <input type="checkbox"/> hired flat | <input type="checkbox"/> others |

2. Are you satisfied with the above mentioned accommodation?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> yes | <input type="checkbox"/> no |
|------------------------------|-----------------------------|

3. Do you go in for sports? Where, what kind of sport?

- LUA sport complex others
 Jelgava ice hall

3.1. Do you have regular training in the above mentioned sport?

- regular irregular

4. How do you spend your free time?

- travel language courses
 sport others
 amateur groups
(drama, dance etc.)

5. Where do you have meals?

Breakfast cafe canteen hostel flat (home)

Lunch cafe canteen hostel flat (home)

Dinner cafe canteen hostel flat (home)

6. Do you make use of the following?

- Information Centre courses
 reading room others

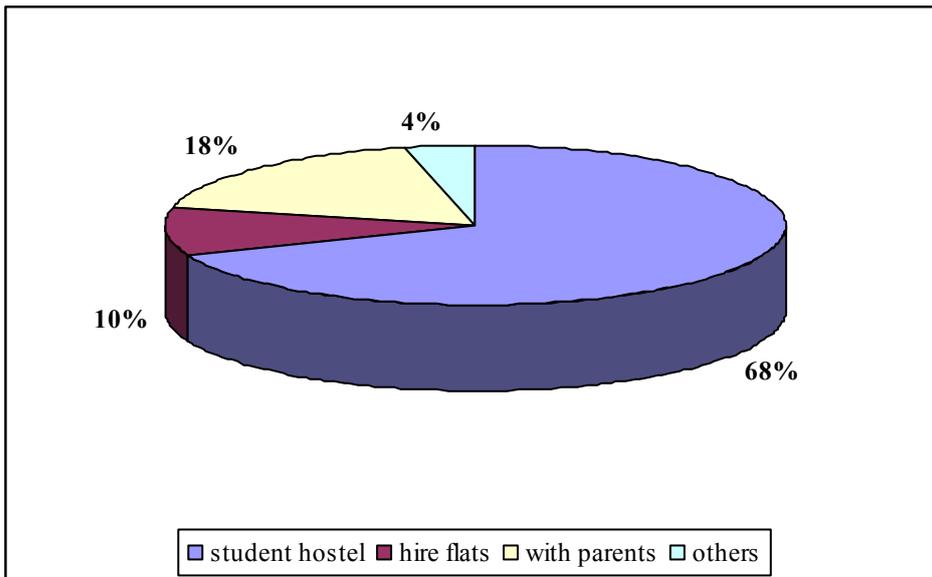
 seminars

The questionnaire is carried out by the LUA FVM academic staff responsible for the chapter Student welfare in association with the international accreditation in March 2003.

At the LUA and FVM students are supplied with accommodation – student hostel. Students of the FVM live in hostel No 9 and No 10. Rooms are a flat type of 2 separate rooms.

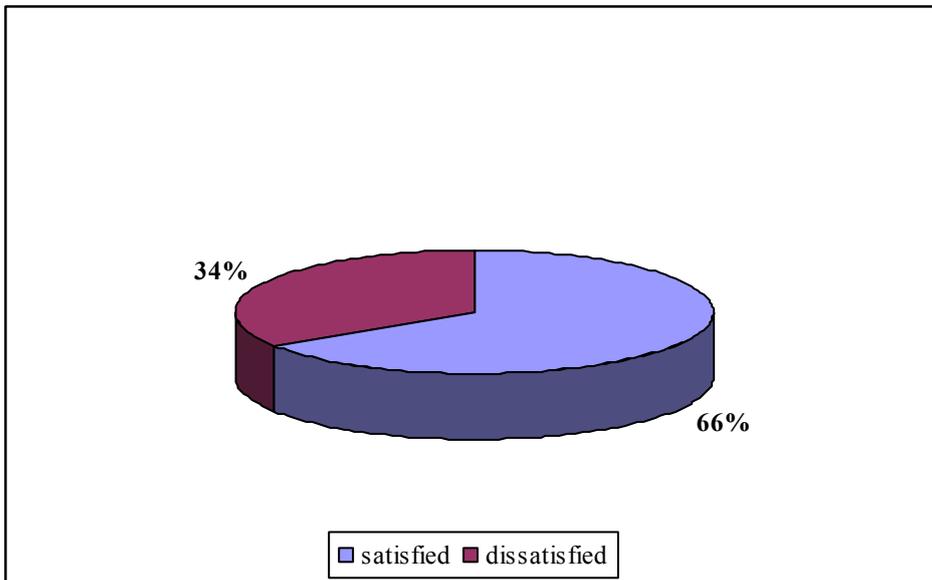
According to the data obtained, 68% of the FVM students have chosen our hostels. In 18% of cases students live with their parents and arrive to the faculty by the public transport. 10% of students hire flats in Jelgava and only 4% of students have chosen other way of accommodation. (See Fig.1)

Fig. 1 Accommodation during studies



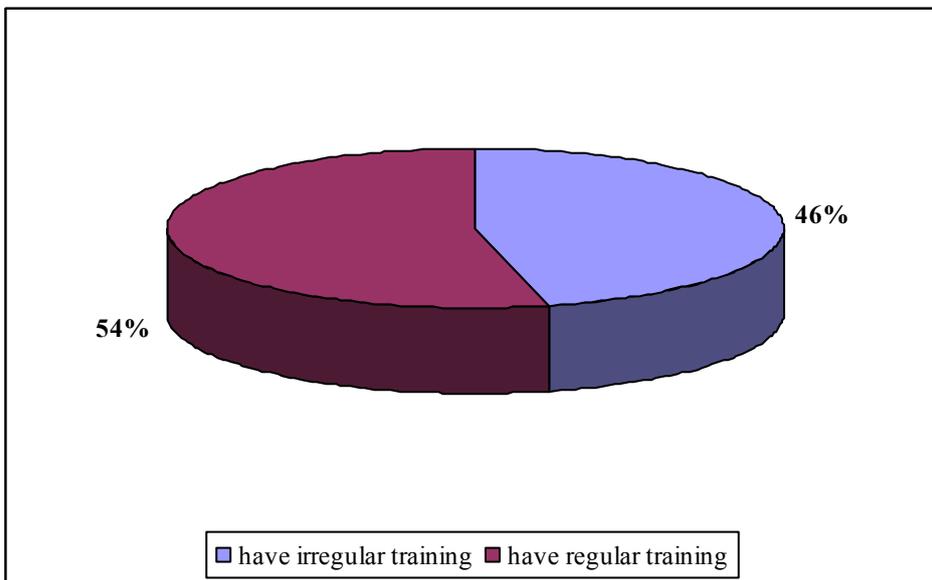
66% of students are satisfied with the chosen accommodation and 34% are dissatisfied. (See Fig. 2)

Fig.2. Satisfied and dissatisfied students with their accommodation.



Most part of leisure students spend going in for sport. Regular training have 54% of students and irregular – 46% (See Fig.3.)

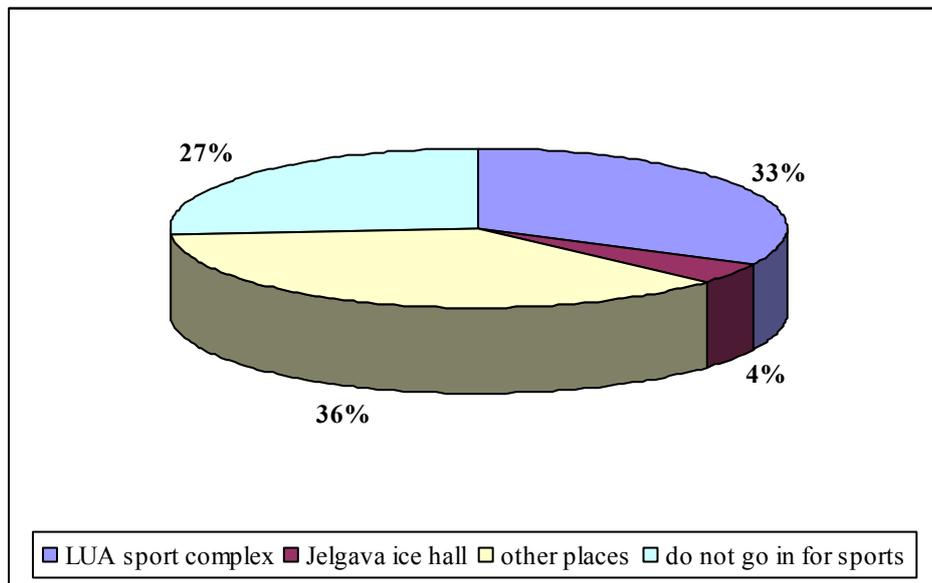
Fig.3. Students have regular or irregular sport trainings.



At students' disposal, there are several indoor and outdoor facilities for sport activities: LUA sport complex, Jelgava ice hall, horse-breeding teaching centre "Mušķi", football field as well as other sports facilities outside the LUA in Jelgava, Rīga and other places. The LUA sport complex is used by 33% of students and the horse-breeding centre "Mušķi" and others – 36%.

The higher year students are, the less they go in for sport. Shocking information is that 27% of questioned students do not do sports at all. (See Fig. 4.)

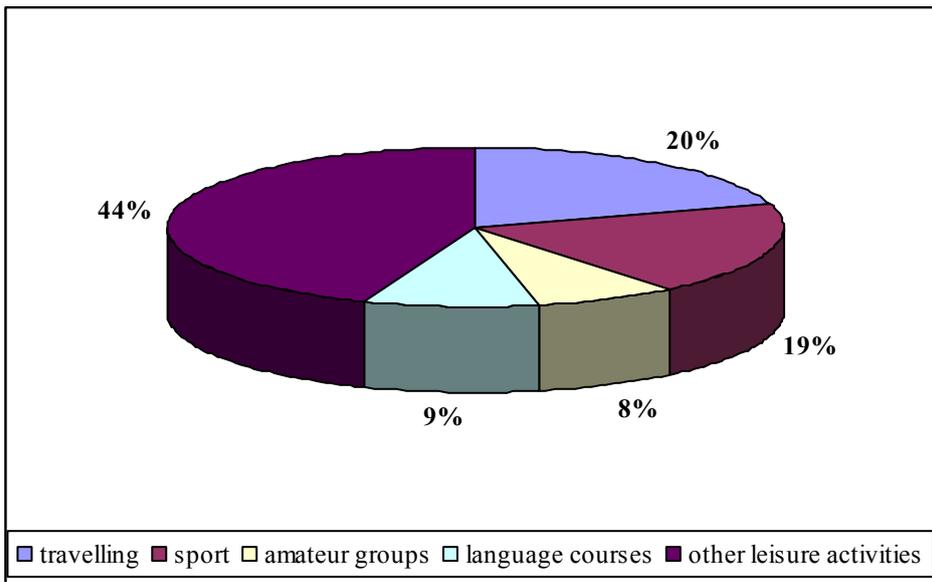
Fig.4. Sports activities of students.



Students also spend their free time participating in other activities. For example, 9% of students take foreign language courses, 8% take part in amateur groups: those who prefer dancing can join the folk dance group “Kalve” or “Skalbe”, if one is keen on drama, he/she can take part in a drama group, you can also play in Raitis Ašmanis “Bigband”. All these activities are organized by the LUA Students’ Club together with students. Students develop their organizing and social skills by holding their New Year carnivals, celebrating the International Students’ Day and AZEMITOLOG celebration (1st year students’ post-immatriculation show), St. Valentine’s Day, folk festival etc.

Part of students spends their leisure time traveling (20%) and most of them (44%) have indicated as “other way of leisure activities” (Fig.5).

Fig.5. Leisure activities.



An important constituent of student's day is meals (breakfast, lunch, dinner). According to the data obtained from the questionnaire, students have breakfast and dinner at their place of living – students hostel or at home, but have lunch in different places, including 37% of students have their lunch in the comfortable canteen which is situated in the faculty building. For some students it is a favorite place to have breakfast and dinner, too. (See Fig. 6,7,8)

Fig.6 Breakfast.

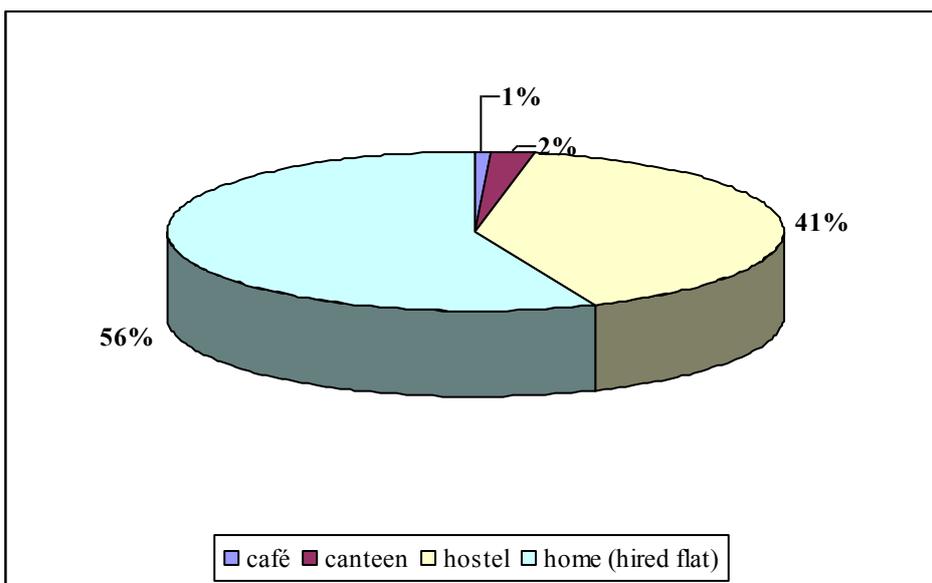


Fig. 7 Lunch.

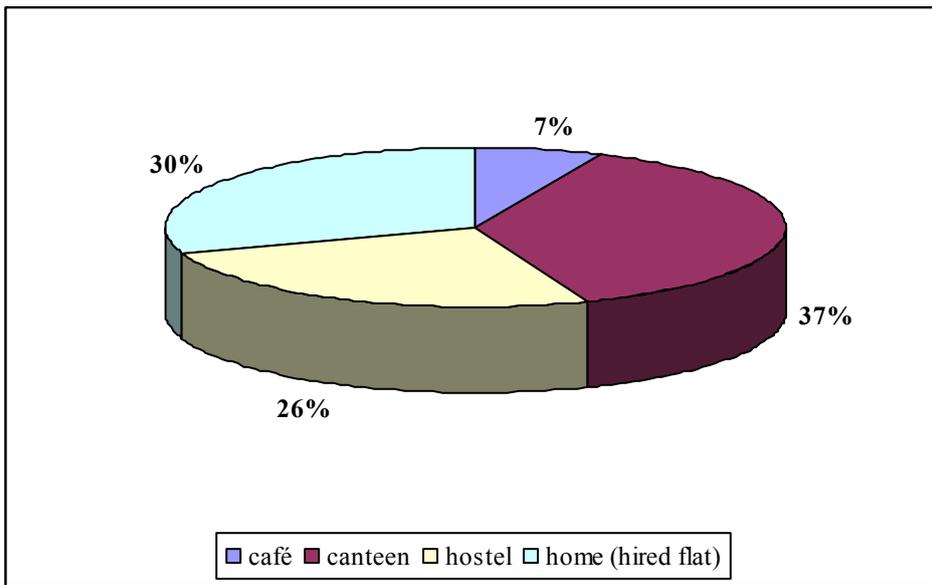
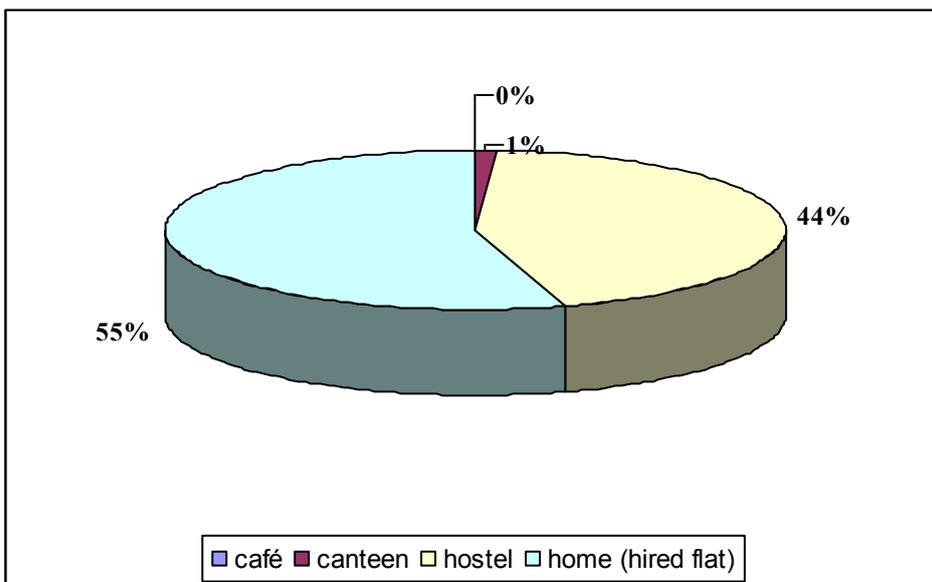


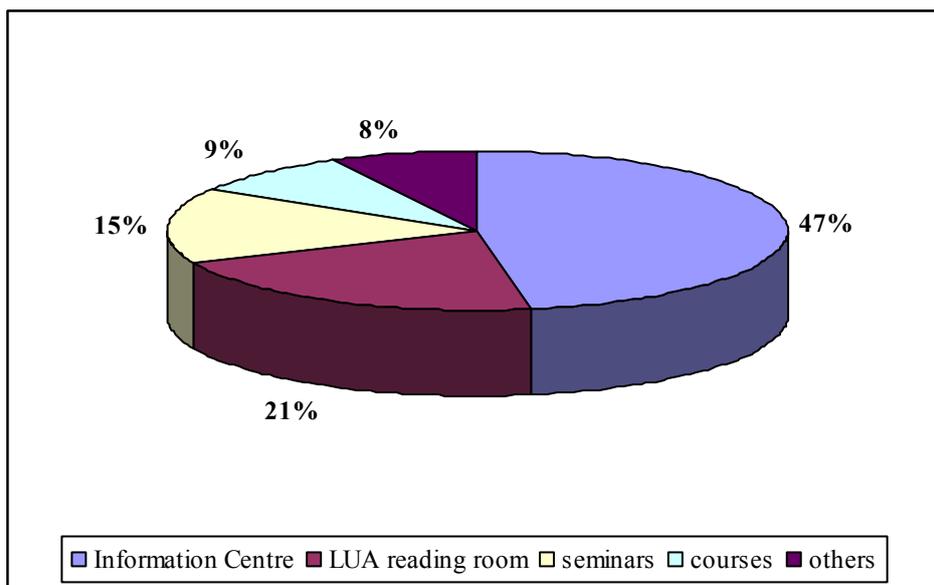
Fig. 8. Dinner.



There is the Information Centre (library) at the faculty. It is available both for the academic staff and undergraduate, master and doctoral students as well as for other academic personnel. The Centre offers to use its fund, photocopying facilities, computers, internet, scanners, video in order to find the needed information. The Information Centre works in compliance with the LUA library regulations. In the Centre there is information on the latest literature and teaching (methodological) materials. Any other sources which are not in the Centre one can find in the LUA central library which is one of the most modern libraries of Latvian higher schools. Besides, professional literature of a particular subject is available in the FVM institutes. There

is a computer room at students' and staff's disposal. The obtained data from the questionnaire give evidence that 47% of respondents make use of the Information Centre service at the FVM, 21% of students visit the LUA main library's reading room. Part of students has indicated that seminars and courses which are organized at the Faculty or abroad are very useful to develop their professional knowledge. (See Fig.9.)

Fig. 9. Teaching facilities used by students.



The teaching and support staff of the faculty offer students better and better solutions of social and study problems to prepare veterinarians capable to work in the competitive market place both of the state and private practice. Student department and education commission of the Latvian Association of Veterinarians also take an active part in the teaching process at the faculty.

2. COMMENTS AND SUGGESTIONS

At present when our country is integrating in the EU, quality requirements for veterinary medicine have increased. These can be ensured only by educated and highly qualified specialists. Study programme of veterinary medicine is being constantly upgraded yearly. It has gained new features after regaining Latvia's independence when co-operation with foreign universities started. Since 2001 a new 6-year study programme is introduced at the faculty which in the sense of contents and with the level of preparation of specialists complies with the EU requirements.

The faculty has a long – standing tradition both of student training and preparing new teaching staff. The faculty academic staff and scientists publish their research results in the FVM international conference proceedings, Latvian University of Agriculture proceedings, publications of the Latvian Association of Veterinarians. Institutes create favourable conditions for assistants and lecturers to take a doctoral study course. The FVM LUA has the right to organize defense of master and doctoral thesis and to grant Mag.med.vet. and Dr.med.vet. degrees.

The FVM academic staff has opportunities to work as probation teachers in universities abroad, and they have been successful in doing this. Employing their knowledge and experience, a teaching programme of veterinary medicine studies has been prepared on the basis of analogous programme implementation of foreign universities and it corresponds to contemporary study development tendencies. The FVM teaching staff participates in international seminars, conferences and together with colleagues of other countries discusses methods of teaching different study programmes of different subjects. In 2001-2002 scientific articles published by the faculty teaching staff increased considerably if compared with the early 1990's, also the number of methodological materials published have increased significantly.

Every 2 years the faculty organizes an international conference. So in 2000 it was “Current issues of veterinary medicine”, but in 2002 “Animals. Health. Food quality”. Besides, local and international seminars, discussions and training courses are held both for students and veterinarians. Hundreds of participants extend their professional qualification in these events. While working out course programmes, the faculty co-operates with the State Food and Veterinary Service, Veterinary and Food Department of the Ministry of Agriculture and Latvian Association of Veterinarians.

The Institutes of the FVM have accumulated the latest issues of video and other demonstrational material. Relatively good relationship between the students and lecturers can be considered as a strong point of the FVM LUA in realizing the study programme. In practical lessons students are taught in small groups. They have possibilities to practice in different animal clinics, on farms, in private and other agricultural enterprises. Students can practice in laboratories of the FVM Research Centre (Institute) “Sigrā”.

Teaching of social – humanitarian block of subjects allows students to better comprehend the structure of theoretical sciences, their interrelations with professional subjects.

The study programme is not only related to animal diseases, cattle (animal) breeding, food production technology or mastering principles of food safety, but also provides knowledge about the relationship between an individual and the society, about economical, social and political changes, which help to adapt the specialist to the extremely changing environment, help use the results of scientific research effectively, to mobilize themselves to a purposeful and effective activities, to analyze and evaluate different important resolutions adopted by the state institutions.

Teaching of Latvian language and improvement of the culture of professional language enable students to assimilate the character and peculiarities of scientific style expression. Successful acquisition of natural sciences and introductory professional subjects make the grounds for stable and high standard further studies, acquaint with the pathogenetic mechanisms of the disease, and with basics of diagnostics of animal diseases and their treatment.

The modules of study programme are closely related to the environmental protection, to the possibilities to reduce pollution.

The former subject Zoohygiene is supplemented with a new one related to environmental protection and animal welfare, that is why now the subject is named Animal and environmental hygiene. It should be stressed that the study programme of veterinary medicine has been considerably changed and now it complies with the content of higher veterinary education of the EU countries. There is an intention to develop a new 1st level professional study programme “Food hygiene” that could be useful for national economy. In accordance with the Law on Higher Education of LR, professional master study programme will be started.

The future of the Latvian University of Agriculture including the Faculty of Veterinary Medicine depends, to a certain extent, on the viewpoint of the Latvian Government to the policy of agriculture and investments for strengthening its economic basis on the whole. The conception of improvement of the study programme and conception economic base is worked

out and a special purpose programme is developed to further improvement of the studies of veterinary medicine.

3. CONCLUSIONS

There are different reasons that hinder rapid and perfect adjustment of the study programme to the EU requirements:

- Insufficient provision of rooms and infrastructure;
- Even though the number of successful students has increased during the last years, the faculty with its clinic, teaching and scientific laboratories could be able to teach much more students. However, independently on the number of students, all the rooms must be heated and maintained, as they are functionally necessary, and all this is expensive when the number of students is comparatively low;
- The main problem is lack of modern equipment for research, software and modern demonstrational equipment;
- Shortage of books for mastering general and professional subjects. Students also use the LUA central library and other public libraries for their studies;
- The teaching quality suffers due to the lack of practical training material in the large animal clinic. To provide for the proper number of animals, the faculty co-operates with different enterprises;
- Improvements in the clinic for practical training are needed. Students assist the workers in the clinic. They have to prepare forage themselves because the finances for central purchase are insufficient;
- Additional income can be made from realizing own production and from service;
- Students should obtain knowledge about the newest and modern technologies in the world;
- Scientists should work under conditions corresponding to the EU standards with modern scientific equipment.

Possible solutions

- State Veterinary Diagnostic Centre with its laboratories is the most suitable and valuable source for practical training;

- To avoid the shortage of time for individual studies the duration of some subjects should be shortened (e.g. physical training, chemistry, physics) or could be included into the list of selected subjects;
- Reinforcement of material-technical basis, infrastructure of the faculty would make better conditions for students to better individual studies.

In conclusion, it is possible to say that the Food and Veterinary Service of LR in general is satisfied with the new specialists professional standard and the strategy of upgrading the teaching quality.

The Faculty of Veterinary Medicine LUA has been preserving and cherishing the traditions of progressive teaching and scientific research for 85 years of its existence. The study programme of veterinary medicine at the faculty has been made in compliance with the world trends of development of veterinary medicine and changes in the social and economical life of our country. It is constantly being improved taking into consideration the requirements demanding from the graduates professional qualification, as well as reforms in food and veterinary system in the country and possibilities to improve the material basis of the faculty.

Chapter 6 FACILITIES AND EQUIPMENT

1. FACTUAL INFORMATION

6.1. Premises in general

The complexes of buildings of the FVM were put into operation in 1964. The faculty buildings, in particular those for student training, were designed according the most modern designs of veterinary higher schools of the former Soviet Union (e.g. Lithuanian Veterinary Academy) and some rational suggestions of the faculty personnel.

The FVM teaching blocks and student hostel No 9 are situated on the ground which is in possession of the Ministry of Agriculture with a tenancy agreement of the LUA. Its area is 10.99 ha with cadastral value Ls 82 744.00 (EUR 139 065.54).

The teaching blocks and those relevant to it with a total area 7979.06 m² and Ls 379046.00 (EUR 637 052.10) of value, are under material (financial) responsibility of the supervision of the premises Pēteris Javaitis, but the student hostel No 9 with a dwelling area 1300 m² and Ls 160 062.00 (EUR 269 011.76) of value is under material (financial) responsibility of the superintendant Angela Puķe.

Location of blocks and buildings is shown in plan, (Annex 6-1). Teaching rooms are located in 5 blocks (A,B,C,D,E), which are connected with a corridor, and a separate building (F).

- A- main 3-storeyed block – 2273.31 m²;
- B- clinic for in-patient hospital – 2670.70 m²;
- C- vivarium, artificial insemination laboratory – 706.35 m²;
- D- laboratory, garage – 431.22 m²;
- E- necropsy room, dissecting room – 450.10 m²;
- F- Food and Environmental Hygiene institute teaching block – 842.11 m²;

Besides, on the site of the FVM these are 2 barns – storehouses (696.8 m²) and a watchman house (10.94 m²), kennels – isolation ward (61.52 m²), canteen (416.21 m²).

All the teaching and auxiliary premises are under supervision of the Dean's board and institutes:

- Under dean's board supervision – dean's office, library, canteen, student hostel No 9;

- Premises of the Preclinical Institute – blocks A,C,E,;
- Premises of the Clinical Institute – blocks A,B,C,D; also storehouses and kennels – isolation ward;
- Premises of the Food and Environmental Hygiene Institute– blocks A,E,F.

Most area of block C (160.75 m²) is let out on hire to the veterinary laboratory of the Food and Veterinary Department of Jelgava region and city, but the canteen (294.47 m²) to the firm “ALIS”.

There are 6 lecture halls (see Tab.6.1.1.) Laboratories and practical training rooms are given in chapter 6.4.

Table 6.1.1. Lecture halls for theoretical teaching at the FVM.

No	Institution	Area m ²	Seats	Equipment
1	Preclinical	106.65	117	LCD projector, power amplifier loudspeakers, Overhead projector
2	Food and Environmental Hygiene	65.73	72	Slide projector, Overhead projector
3	Clinical	123.14	84	Slide projector, Overhead projector
4	Clinical	82.73	-----	Hired by Veterinary laboratory of Food and Veterinary Department Jelgava region, city
5	Food and Environmental Hygiene	66.14	54	Slide projector, Overhead projector
6	Food and Environmental Hygiene	131.1	100	Slide projector, Overhead projector
	Total	575.49	467	

6.2. Premises used for clinics and hospitalisation

The FVM Clinical Institute, small animal clinic of Veterinary Education Centre and equine clinic can give service to about (maximum projected number) 4.5 thousand small animals, 400

horses per year. Service of farm animals is carried out in fields (mobile clinic), and the maximum amount of animals can be to 800 per year.

Table 6.2.1. Places available for clinics and hospitalisation

- ❖ Number of hospitalisation places for cattle – 16 cows,
3 bulls,
total 19 places
- ❖ Number of hospitalisation places for horses – 9
- ❖ Number of hospitalisation places for small ruminants – 7
- ❖ Number of hospitalisation places for pigs – 5
- ❖ Number of hospitalisation places for dogs-
 - In small animal kennels – isolation ward – 7 boxes
 - In Veterinary Education Centre – 3 boxes
 - Dog kennel (in different rooms) – 13 (for 2 places) – 26 places

Total – 36 places
- ❖ Number of hospitalisation places for cats (in different places)
 - 6 cages (3places in each) – 18 places;
 - single cages - 10 places

total 28 places

Besides, on the site of the clinic there are 15 individual voliers (animal kept free in a fenced area) with dog kennels.

Number of animals that can be accommodated in isolation facilities:

- ❖ For small animals – 5 boxes
- 10 places in cages
total 15 places
- ❖ For farm animals – 2
- ❖ For horses – 2 boxes
Total 4 places

6.3.Premises for animals

There are the following premises for maintaining normal animals for the teaching purposes: the FVM clinic of hospitalisation for large animals, small animal kennels – isolation ward,

places of hospitalisation for small ruminants, pigs, and hospitalisation premises in the clinic of Veterinary Education Centre.

In the FVM Clinic for in-patients (block B) there are 8 departments – sections with 9 boxes for individual accommodation of horses, 16 places for cows and 3 separated places for bulls.

In the small animal kennels – isolation ward there are 7 boxes, in the isolation premises there are cages for dog and cat accommodation (number of cages – according to the need). Hospitalisation places for small ruminants (7 pens)and pigs (5 pens) are in the block C.

In the Veterinary Education Centre there are 3 boxes as well as cages for accommodation of sick dogs and cats. Totally in the FVM Clinic (Veterinary Education Centre including) there are cages for accommodation of 36 dogs and 28 cats.

All the above mention premises are supplied with animal feeding, watering, sanitary grooming, motions etc. performed by the staff or students on duty.

Student practical training, when animals are used, takes place also during practice and in fields. For this purpose the following is exploited:

- LUA teaching and research farm “Vecauce”;
- LUA Horse breeding and teaching centre “Mušķi”;
- Jelgava slaughterhouse and others;
- SIA Daile AGRO farms;
- State pedigree and artificial stations.

6.4 Premises used for theoretical, practical and supervised teaching

Table 6.4.2. Premises for group teaching

No	Name of room	Study subject	Number of places	Equipment	Drawbacks
Clinical Institute					
1	Foreign language teaching room	English language, seminars, Internal diseases, herd health, Small animal internal diseases	16	1 tape recorder, books in English	Lack of demonstrational equipment, it cannot be darkened
5	Clinical diagnostics laboratory	Clinical and laboratory diagnostics, Small animal diseases	10	10 microscopes	Renovation, new microscopes are needed
12	Pharmacology laboratory	Pharmacology, toxicology	10	Veterinary drug display, demonstrational equipment	Renovation is needed
13	Oocytes cultivation laboratory	Obstetrics, gynecology	10	Embryo transfer equipment	Embryo flush and solutions, hormones to provoke superovulation
194	Artificial insemination laboratory	Obstetrics, gynecology	20	10 microscopes, scales, photocolourmetre, equipment for mastitis diagnostics, liquid nitrogen container	Freezer, device for pregnancy diagnostics, microscopes, phantom
	Veterinary Education Centre seminar room	All clinical subjects	30	Slide projector, overhead projector	Video projector

Preclinical Institute					
37	Zoology teaching room	Zoology	14	Microscopes, microscopic and macroscopic preparations, posters, books	It cannot be darkened, insufficient lighting, new microscopes and microscopical preparations are needed
45	Physiology teaching room	Physiology	16	12 microscopes, posters	New apparatuses – biochemical analyzer etc. are needed
46	Pathological physiology (general pathology)	Pathological physiology (general physiology)	12	Microscopes, posters, macroscopical preparations	New electrocardiograph, sonograph, formelement counting machine
60, 213	Anatomy teaching rooms	Anatomy	20 20	Preparations of animal bodies, skeletons, atlases	Freezing room is needed
Institute of Food and Environmental Hygiene					
343	Structure (organisation) of veterinary service, Food toxicology teaching room	Structure (organisation) of veterinary service, Food toxicology, Food marketing	12	Work instructions, methods, overhead projector, thermostat, dummies, pathological anatomy preparations, video films	Renovation needed
352	Infectious diseases laboratory	Epizootology, Infectious diseases	12	Work instructions, methods,	Renovation needed . Lack of modern

				thermostat, centrifuge, microscopes, gas burners, reagents, media for growing micro-organisms	light microscope
362	Virology, immunology laboratory	Virology, Immunology	12	Inventory for serological examination, reagents, laboratory animals, overhead projector	
365	Seminar room	Animal and environmental hygiene, Microbiology, Virology, Immunology	24	Video equipment, video films, overhead projector	Renovation needed
Total number of rooms - 15					
Total number of places – 248					

Table 6.4.3. Rooms for practical teaching

No	Name of room	Study subject	Number of places	Equipment	Drawbacks
Clinical Institute					
75	Radiology laboratory	Radiology, Operative surgery, Large animal surgery, Clinical and laboratory diagnostics, Small animal diseases	25	2 x-ray apparatuses, sonoscope, laser device, 2 negatoscopes, 4 iris lamps, protection room, x-ray table, development processor,	Apparatuses of new generation for student individual work, computer with data base

				protective clothes, 3 sets of dosimeters, radiometres, 1 x-ray metre, 5 individual sets of dosimetres, ophthalmoscope	
78	Clinical diagnostic laboratories	Cytology, Histology, Clinical and laboratory diagnostics, Small animal diseases	15	Microscope with monitor, 11 microscopes, blood chemical analyser, 2 centrifuges, 3 refractometres, photocolourimetre	Microscopes, refractometres etc. laboratory equipment for student individual work is needed
81	Small animal internal diseases teaching room	Small animal internal diseases	12	Diagnostic instruments, examination tables	
119	Surgery room	Small animal surgery	15	Inhalation anaesthesia equipment, 3 oxypulsometers, 3 operation tables, sets of surgical instruments, 2 clippers, keratocutter	Monitoring system needed
120	Obstetrics, gynecology teaching room	Obstetrics, gynecology	10	Animal fixation frame, gynecological examination instruments	New sets of instruments needed

193	Andrology, artificial insemination teaching room	Andrology, artificial insemination	12	Animal fixation frame, phantom, semen collection instruments	Phantoms needed
Veterinary Education Centre Small animal clinic	Animal examination rooms – 2	Small animal internal diseases, Small animal surgery	5 5	Examination instruments	
	Clinical manipulation room	Small animal diseases	10	Treatment instruments, devices	
	Operation room	Small animal surgery	10	Inhalation anaesthesia equipment, oxypulsemetres	
Veterinary Education Centre Equine clinic	Horse examination room	Large animal surgery, Internal diseases, Obstetrics, gynecology	10	2- animal fixation frames, endoscope, arthroscopy, x-ray	
	Operation room	Large animal surgery	10	Inhalation anaesthesia equipment, operation table, telfer, restrain equipment, anesthesia box	
FVM in-patient clinic	Internal diseases, heard health teaching room	Internal diseases, heard health	10	Animal fixation frame, examination instruments, intravenous infusion system	New animal examination instruments needed
Preclinical Institute					

42	Ethology teaching room	Ethology	20	Video, slide projector	Video films needed
53	Histology teaching room	Histology, cytology, embryology	12	Microscopes, histological slides, microscope with monitor	
183	Anatomy teaching room	Anatomy	20	Preparations of animal bodies, skeletons, atlases	Cold storage, more spirit for preparation needed
Institute of Food and Environmental Hygiene					
24	Food hygiene laboratory	Food hygiene and inspection, Food-born diseases	12	Microscope, 2 thermostats, scales, 3 class biosefety cabin etc.	Ventilation, finances for media and reagent purchase needed
26	Pathological histology laboratory	Pathological anatomy, Forensic veterinary medicine	12	24 microscopes, 3000 histological and macroscopic preparations, atlases, 30 video films, TV set, overhead projector, epidiascope	Equipment for imbedding histological preparations (slides), microtoms needed
31	Parasitology laboratory	Parasitology	12	12 microscopes, micro- and macro-preparations, antiparasitic drugs, trichinelloscope, posters,	Inventory for specific diagnostics of parasitoses needed

				slides, video films	
215	Necropsy room	Pathological anatomy, Forensic veterinary medicine	12	Animal cadavers, instruments, necropsy tables, scales, measuring instruments	Insufficient amount of cow cadavers
360	Microbiology laboratory	Microbiology, Immunology	12	12 microscopes, cultures of microorganisms, video films, catalogues	Totally new laboratory equipment needed
356	Animal hygiene laboratory	Animal hygiene	12	Specific apparatuses, reagents, calculation tables, refrigerator	Apparatuses for analyses
361	Virology laboratory	Virology	6	Sets of cell culture diagnostics, 9 microscopes, laboratory animals, video films, luminescent microscope, 3 class biosafety cabin	Equipment for IFA with a programme needed

Total number of premises at the FVM – 22, number of places – 279

At the premises of practical work, laboratories, hospital, on farms and meat processing enterprises (slaughter houses) students must strictly observe safety regulations.

In the beginning of every course students are instructed in the measures of safety: precaution when handling different animal species, way of animal restriction, pathological material etc. Laboratory and practical work students do dressed in overalls. Disinfections of hands and site of work is guaranteed.

Depending on the profile of activity, particular demands are observed – use of gloves, nose and mouth mask, individual protective measures in the x-ray room, obligatory forced ventilation during the inhalation anaesthesia.

Treatment of rooms with bactericide bulbs, disinfectants, local ventilation, optimal lighting of the work site and others are ensured in every premises where undergraduate students are trained and animal accommodation premises as well.

6.5. Diagnostic laboratories and clinical support services

There are 3 diagnostic laboratories functioning at the FVM: in the Clinical Institute – Clinical pathology laboratory, in the Institute of Food and Environmental Hygiene – laboratory of diagnostics of contagious diseases, in the Preclinical Institute – laboratory of functional morphology.

Clinical pathology laboratory is situated in the Clinical Institute room 78. There are laboratory tables in the room and the conditions are suitable both for routine laboratory examination of biomaterial of patients and for students (15) practical teaching in subjects of Clinical and laboratory diagnostics, Internal diseases, Small animal internal diseases, Cytology and histology. The following examinations are made: urine analyses (multisticks, sediment microscopy), blood morphology (haematology), blood biochemistry, coprology, skin scrapings and effusion microscopy, tissue smears cytology etc.

In the clinical laboratory of the Clinical Institute FVM the following diagnostic apparatuses and equipment are operating: microscope with monitor (Leica Galen III 2000. Model No 319503 – 03 USA Buffa 10; monitor Ikegami Model ICD – 803P 2000); Blood biochemical analyser (Reflotron[®] - Roche Diagnostics 2001. Testing (Roche) – Bilirubin, Urea, Alkaline Phosphatase, ALIT, Creatinine 2001); refractometre (KRÜSS HRM – 18, No 23009 (Clinical refractometre) 1997, Germany); refractometre (Leica TS 400, ser.No OB 2059); centrifuge (Micro-Hematocrit 1990. USA CT – 3400); centrifuge (Sigma-2 ser.10173 1997, Denmark);

electric scales (10g – 100g) (Kuomat Germany 1963); heating cabin (Heraeus B5050 Germany 1982); microscope (Leitz No 107207 ORTHOLUX II Made in Switzerland); 10 microscopes (ser. Biolam 1975).

In clinical work to examine patients (horses, farm animals, small animals), when applicable, x-ray, ultrasonograph, endoscope is used. For performing operations on animals both horses and small animals inhalation anaesthesia is applied.

The laboratory of diagnostics of contagious diseases is situated in the Institute of Food and Environmental Hygiene.

Bacteriological division of this laboratory is housed in block F, room 358, 360, 361. Room 358 is equipped for preparation of stains, culture media, reagents and utensils. In room 360 there are laboratory tables, a table for microscopy, cupboards for culture media, refrigerator, 2 thermostats, centrifuge and conditions are created for examinations. There are 12 places for simultaneous practical training of students. This laboratory is used also by personnel of the Veterinary laboratory of Jelgava Department (long-term bilateral co-operation agreement). For bacteriological plating room 361 is used, where there is a biosafety cabin and other relevant inventory. An adjacent room serves as bacteriological kitchen. In the bacteriological laboratory of the Institute of Food and Environmental Hygiene the following apparatuses and equipment are functioning : 3 refrigerators ZIL-MOSKVA; flask drier Gerhardt; 12 light microscopes; thermostat Memmert, Germany; thermostat ET-7, Russia; centrifuge Wirovka MPW-2, Poland; bactericide bulb (lamp) ZAVODAPARATURA- SVEROLOVSK; biosafety cabin Hera Safe; water bath UTU-2; luminescent microscope ML-2; drying cabin T-5090E; destillator; autoclave BK-30.

Pathological histology division of the laboratory is situated in the Institute of Food and Environmental Hygiene block A room 25 (18m²). At present the laboratory is being extended and moved to the block E (32 m²) next to the necropsy room. Microscopic examinations are carried out on the pathological material which is obtained from cadavers at the diagnostic necropsies, forensic veterinary medical inspections, scientific research, as well as biopsies from operations sent in by veterinarians. Histological slides are stored with the aim to extend the collection of specimens for the teaching of students.

In the laboratory there are the following equipment: 1 air traction cabin (room 26); 1 refrigerator – Dnepr 2, 1970; 2 thermostats – Jurgens Heraeus, 2B – 151; 3 microtomes – freezing M 3-1, rotary MPC – 2, sliding; 4 microscopes – 2 binocular Biolam P5, 1 luminescent – MLD – 1; a complete set of microscope CX 41RF Olympus with photo tube, digital compact camera C-3030Z and video monitor (in room 31); 3 cameras for taking macro and microphotos – Kijev 6CTTL; MFH-5; MFH-12 and other equipment.

Classification of tumours is performed in compliance with the International histological classification of tumours of domestic animals (1974).

There is a deposit of more than 10 000 examined histological slides and formalin-fixed materials obtained at pathoanatomical necropsies since 1921.

Parasitology division.

Parasitology laboratory is situated in the Institute of Food and Environmental Hygiene block A rooms 31 and 32. In room 31 there are laboratory tables, a thermostat, centrifuge, electric scale; a complete set of microscope CX 41 RF “Olympus” with phototube, digital compact camera C-3030Z and video monitor; 12 light microscopes “Biolam”, 6 stereo microscopes, magnetic stirrers, laboratory utensils and other equipment. In room 32 there is a thermostat, freezer, refrigerators “Stinol 103” and “Zil Moscovia”, cupboards for preparations, air traction cabin and reagents.

In this laboratory parasitological examinations are performed in mammals, birds (poultry), fish, bees and other animals as well as environmental examinations in Jelgava, Dobeles and other regions. The laboratory co-operates with the State Veterinary Diagnostic Centre, the Jelgava District Veterinary Laboratory of the Food and Veterinary Service LR, Agency of Public Health LR.

During the period of 2000 – 2002 diagnostic examinations have been carried out within the framework of FAO project TCP/RER/0065 (A) “Improved Meat Production in the Baltic Region through Epidemiology Based Control of Trichinellosis – a Parasitic Zoonosis”.

Laboratory of functional morphology of the Preclinical Institute

Laboratory of functional morphology is situated in the Preclinical Institute rooms 47, 53, 177, 178 and 180. Room 47 is a basic laboratory, where histological slides are prepared, stained and histological tests (reactions) are made. In room 53 there are microscopy tables, 12 microscopes and monitor. There are 12 places for simultaneous teaching of students.

Rooms 177, 178 and 180 are used for experiments with animals.

In the functional morphology laboratory there are the following apparatuses and equipment: fibrogastroscope Fb-29W “Pentax”, Japan; halogen lamp LH 150 PC “Pentax”; vacuum pump SAM Haspy; hermetic tester; bath for maintenance and disinfection of fibrogastroscope; disinfectants and detergents Sekusept; tissue processor Tissue-Tek; rotation microtom CUT 4055; phase contrast microscope DMWB₃ Clin. lab.; two thermostats Memuert – UM 200, Memuert-UM 100A; Leica microscope Gallen III; video monitor with camera IKEGMI CMK 1770.

6.6. Slaughter house

The FVM used to have access to the A/S “Jelgavas gaļas kombināts” (Jelgava slaughterhouse – meat production plant) in the Jelgava city where students were trained in the study subject Obstetrics and gynaecology. Students of the 3rd and 4th year (totally above 60 students) obtained practical skills according to their theoretical knowledge by assessing reproductive organs of cows and pigs and estimating age of foetuses.

Co-operation with the slaughterhouse was organised in the following way:

- the lecturer responsible for the field-trip training contacted the veterinarian and team leader of the slaughterhouse, got the needed information on the number and species of animals to be slaughtered and coordinated the day and time of the arrival to the slaughterhouse;
- the slaughterhouse veterinarian issued a permission to use the necessary slaughter material (foetus) which were collected by a worker of the slaughterhouse.

Students were transported to and from the slaughterhouse either by the FVM minibus or the city public transport or private cars.

During every time of practical teaching (2 –3 hours per group) students examined and dissected animal organs and fetuses in accordance with the theme of the syllabus. The number of animals per one time was 5 – 15 cows and about 10 pigs. Students worked individually – each student with his/her own preparation. During each training time all students shared the preparations (material) and got familiar with all the cases they had come into contact with.

Since January 2002 the slaughterhouse is closed. At present the student teaching in gynaecology is organised as follows: the nearest private slaughterhouses have been contacted and the FVM has entered into an agreement with the owners about obtaining anatomy material. Part of it (uterus, ovaries, fetuses) we get for free while for the male reproductive organs money should be transferred depending on the weight. The material is collected by the order of the veterinarian and delivered to the FVM laboratory. The material is stored in the freezer and before the training it is thawed.

6.7. Foodstuff processing unit

Practical work in the subject “Veterinary inspection of slaughter products” with the 5th year students in the 9th semester is organised in the slaughter house/meat processing enterprise “Kompleksim – Nākotne”. This enterprise is situated in Jelgava region, 18 km from Jelgava.

Every year teaching excursions to different food producing/processing enterprises in different region of Latvia are organised for the 5th year students in the framework of the study subject Food hygiene:

- slaughter house/meat processing enterprise “Triāls”,
- A/S Vidzemes Piens,
- SIA Valrit,
- A/S Limbažu Piens,
- Fish processing enterprise “Brīvais Vilnis” (Salacgrīva) etc.

6.8. Waste management

For cadavers and other bacteriological material destruction a crematorium is used, which was built in 1982. In 2001 the incinerator was reconstructed and it is mainly used for burning pathological material left after student training.

- Cadavers are incinerated in the specially built incinerator, the cremation capacity of which is about 300 kg per day.
- The average amount of pathological material incinerated per week is 200 – 300 kg.
- The average consumption of wood per year is about 100 m³.
- Smoke is drained through the chimney, the height of which is 22 m and the mean diameter is 2 m.

In 2001 a reconstruction plan of the FVM crematorium for incineration of animal cadavers and pathological material was developed and an estimate was made up including expenditure for the gas purification equipment. The plan and estimated cost is submitted to the Ministry of Agriculture LR to receive finances. In case of allocation of funds, the reconstruction work will be coordinated with the Jelgava Regional Environmental Department taking into consideration suggestions of specialists.

Cultures of microorganisms together with the media are autoclaved following the rate of regulations (4 autoclaves are used).

6.9. Future changes

In 1998 a new gas boiler house was built for the LUA funds (Ls48000.00, EUR 800672.27). The heating pipelines and heaters reconstruction has been started and is still going on. In 1998 – 2000 small animal and horse clinics were reconstructed and equipped in the FVM Clinical Institute, central block B (Ls 81 000.00, EUR 136134.45)

In 2000 repair work of the heating pipelines and other repairs to economise energy resources were carried out for the state investments for more than Ls 50 000.00 (EUR 840336.13)

Different investments are being attracted for teaching and scientific laboratory equipment and modern technical facilities. A new computer room is established, food hygiene and inspection

laboratory is reconstructed and equipped, a modern technical equipment is purchased for one lecture hall, equipment is improved and supplemented in histology, clinical and bacteriological laboratories totally for Ls 420553.00 (EUR 71517.65) of the Tempus project finances. In the future both the state and other funds will be attracted for improvement of all the teaching premises, but first of all for organisation of facilities of histological, clinical and bacteriological laboratories.

In 2002 the following repair and reconstruction work was performed of the state investment (above Ls 120 000.00, EUR 201 680.67):

- lecture halls No3 and No5,
- surgery room for practical work,
- large animal clinical examination room,
- manage (the large hall in the Clinical Institute),
- the connecting corridor between buildings,
- dissecting room, necropsy room (block E),
- heating mains.

2. COMMENTS

Teaching blocks and auxiliary buildings, which were put into operation in 1964, were built according to the needs of student training purposes, nevertheless, they all have drawbacks typical for projects of those times as well as the low quality of building materials and the low quality of the work performed. At present one can see that these buildings have become worn out physically and old-fashioned morally. An application of a project of reconstruction of the FVM premises and modernisation of material technical basis to the state investment programme for 2002 – 2004 has been worked out (Ls 411 000.00, EUR 690 756.30). The start of the project was in 2000.

Most part of apparatuses, devices and equipment at the FVM has become morally and physically out-of-date; several of the valuable apparatuses and equipment needed so much for the teaching and research do not exist at all at the faculty. Only due to attracting investments of different funds, formation of a new technical basis has been started in the last 2-3 years.

In the application of the state investment programme for the purchase and instalment of the necessary equipment Ls 131 380.00 (EUR 220 806.72) are requested.

Maintenance of facilities and equipment is ensured by the state budget. However, apparatuses are constantly becoming more and more sophisticated, so for their operation and maintenance some additional financing and relevant specialists would be very helpful and useful.

3. SUGGESTIONS

To improve the buildings and equipment for undergraduate teaching, there are the following suggestions:

- Development of technical and economic documentation of economic investigation and complex reconstruction of the building and premises should be continued.
- Repair and reconstruction of the buildings and rooms should be done intensively paying a particular attention to the ventilation system and other improvements.
- Investments of both the state and other funds should be attracted to improve and supplement the technical basis of the faculty.

Chapter 7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

1. FACTUAL INFORMATION

7.1. Basic subjects

Anatomy

Students are taught systemic anatomy in the 1st, 2nd and 3rd semester. During the practical anatomy training students dissect anatomical material in accordance with the teaching theme. The materials are obtained from different slaughter houses, euthanised animals in the FVM clinic and after necropsies on condition that the animal carcass does not have any pathological lesions. Students dissect systems of organs of different animal species. In the 6th semester, for topographical anatomy training both the stored materials and live animals accommodated in the FVM clinic are used. The best provision of the teaching material is in osteology, where skeletons of different animal species are used, and many of them are prepared by students themselves. The material for teaching anatomy of poultry is obtained in poultry factories in Ķekava, Iecava, Līvberze.

For histological slides organs and tissues of healthy euthanised animals of different species as well as biopsy materials are used. Slides are prepared in the morphofunctional laboratory of the Preclinical Institute by a rotary microtome. Haematoxylin and eosin stain method is employed for tissue sections (5-15 μ m).

In the 1st year 2nd semester students acquire general histology but in the 2nd year 1st semester histology is taught.

Pathology

Table 7.1. Number of necropsies over the past 3 years

Species	Number of necropsies		
	2002	2001	2000
Farm/large animals:	3	2	4
Cattle			
Equines	8	5	13

Small ruminants	1	-	5
Pigs	218	238	273
Other animals: Poultry, Foxes, wolf, quineapigs etc.	109	127	71
Small animals/pets: Dogs	25	23	25
Cats	4	5	2
Other pets	-	-	1
TOTAL	368	400	394

Materials for the 3rd, 4th, and 5th year students teaching of necropsies and pathological anatomy and diagnostics are obtained from the following places: pigs – SIA “Ulbroka”, “Vecauce”, dogs and cats from the FVM Veterinary Education Centre clinic, horse breeding farm “Tērvete” (Dobele region) and other horse breeding farms. Poultry is obtained from SIA “Baltikovo” (Iecava), SIA “Zeltiņi” (Bauska), SIA “Ķekava” (Rīga region). Foxes – from hide processing enterprise “Vanagi” (Rīga region). For special necropsies of forensic veterinary medicine (15-25 per year) materials are obtained from Rīga, Jelgava, Tukums, Liepāja, Ventspils, Preiļi police departments, prosecutor`s and court offices.

The number of necropsies for 1 student is sufficient (15-18 animal bodies per course of studies).

Physiology, Physiopathology (or general pathology)

For the teaching of physiology and physiopathology experimental animals are used, the purchase of which is mainly financed by research projects, as well as animals of the FVM clinic and small animals of private clinics. Videofilms and CDs are used to demonstrate the physiological functions and pathological processes in animals.

Zoology

For acquisition of zoology, commercially produced slides for microscopic examination are used, e.g. unicellular organisms, crosssections of round worms and earth-worms, ticks, parts of insects etc.

Alcohol-fixed macroscopic material is also used, e.g. worms, molluscs, frogs, lizards etc. For student training purposes live earth-worms and planktonic crustaceans, fresh fish bought in the shop, white mice bred in the vivarium of the Jelgava region veterinary laboratory, collections of insects, carcasses of hens from SIA “Ķekava”. Live vertebrates are not used for practical training.

Internal diseases

During the practicals of internal diseases cows and calves, small animals and horses from the FVM clinic and small animals from the clinic of Veterinary Education Centre are used. Cows are also used during the field-trips for study purposes on the Teaching and Research Farm “Vecauce” and SIA “Daile AGRO”. For the teaching of pharmacology animals are not used.

Material for clinical and laboratory diagnostic purposes (blood, serum, plasma, urine, faeces etc.) is obtained from large and small animals either in – or out patients.

Parasitology

Materials for parasitic examinations are obtained from animals of the FVM clinic and Veterinary Education Centre clinic, Teaching and Research Farm “Vecauce”, Horse Breeding Farm “Mušķi”, from wild animals and slaughterhouses as well as samples brought (sent) by veterinarians.

For the teaching purposes in parasitology a wide choice of different agents of parasitic diseases is collected. Students are allowed to collect and examine samples for parasitoses from small animals brought to the clinic of Veterinary Education Centre under supervision of a veterinarian. Clinical, laboratory and post-mortem diagnostic methods are used.

Infectious diseases

Microbiology

For practical training of microbiology, commercially produced media are used. Subsequently all of them are autoclaved and destroyed.

Virology

During practicals of virology, embryos of hen eggs, white mice, tissue cultures of pig and cow parenchimate organs are used. To assess the cytopathogenic effect of viruses, 50 embryos of hen eggs and 120 white mice are used per academic year. During the practical sessions on the Teaching and Research Farm “Vecauce” students are trained in different manipulations to be able to take samples of blood, to make intradermal injections for tuberculin test, and vaccinations. As to mallein tests for glanders in horses, it is practised in the Horse Breeding Farm “Muški”.

To acquire knowledge of serological tests in immunology, animal blood samples are used.

7.2. Animal production

The availability of production animals for the practical teaching of students is as follows:

a) on the site of the faculty:

in 2000 – 3 bulls, 3 cows, 2 pigs,

in 2001 – 3 bulls, 2 cows, 1 pig,

in 2002 – 4 bulls, 2 cows, 1 pig were used for practical teaching.

Large animals for the practical teaching of students are purchased of the faculty finances; nevertheless, due to shortage of the faculty finances, the number of purchased animals is limited. That is why the number of large animals for the training of students is insufficient.

b) on other sites to which the faculty has access:

in 2000 – 450 cows,

in 2001 – 450 cows,

in 2002 – 500 cows were used on the Teaching and Research Farm “Vecauce”.

7.3. Food hygiene

Meat inspection

Prior to slaughterhouse training in meat inspection students have a theoretical course (introduction in meat inspection procedures) at the FVM. Until the academic year 2001/2000 students had a possibility to work 4 to 5 days (one day per week) to obtain practical skills in meat inspection at the Jelgava slaughterhouse which is located about 4 km from the Faculty. About 100 pigs and 30-50 cattle were slaughtered per day. Since 1 January 2002 the Jelgava slaughterhouse is closed, but there is a meat processing plant still available for the teaching purposes.

Since the academic year 2002/2003 the FVM has entered an agreement with another slaughterhouse in Jelgava region. During the 9th semester the 5th year students have practical classes (as part of field-trips) at the slaughterhouse “Kompeksim Nākotne”, where about 40 pigs and 5-10 cattle are slaughtered every day. Besides, students have 1 or 2 excursions to poultry factories. There they have an introductory course in poultry meat inspection.

Food hygiene, inspection and technology

During the practical teaching students have a possibility to participate in sampling of foodstuffs and examination. Mostly food of animal origin is used as meat, meat products, milk, dairy products, fish, eggs and honey. The amount of foodstuffs used at the laboratory depends on the kind of examination and the number of students participating. No more than 11-12 students are allowed to take part in one laboratory group.

Several other visits to different slaughterhouses, meat processing plants, dairy plants, fish factories are included in the programme.

7.4. Consultations

The FVM clinic is open 52 weeks a year.

It is possible to get consultations and veterinary medical care at the clinic of the faculty six days per week. The clinic is open 8 hours on weekdays from 9 am to 5 pm and on Saturdays it is open 4 hours from 9 am to 1 pm.

After the opening hours and on holidays consultations can be given either on the phone or in case of necessity assistance to animals is given by veterinarians on duty.

Table 7.4. Number of animals received in the past three years

Species	Number of patients		
	2001	2000	1999
Farm/large animals:	455 MC	274 MC	177 MC
Cattle			
Equines	97	149	33
Small ruminants	32 MC	16 MC	2 MC
Pigs	28 MC	25 MC	28 MC
Other farm animals: Poultry, rabbit	3 MC	8 MC	-
Small animals/pets:	2849	3362	2509
Dogs			
Cats	1326	1391	764
Other pets	46	69	-

MC – mobile clinic

7.5. Hospitalisation

Table 7.5. Patients hospitalised in the clinics in the past three years

Species	Number of hospitalisations		
	2001	2000	1999
Farm/large animals:	-	1	1
Cattle			
Equines	56	60	-
Small ruminants	1	-	-
Pigs	-	-	-
Other farm animals:	-	-	-

Small animals/pets:	120	120	80
Dogs			
Cats	240	250	100
Other pets	8	6	1

Animals were hospitalised for more than 24 hours.

7.6. Vehicles for animal transport

The Veterinary Education Centre clinic uses Renault Kangoo-1998 to bring sick animals to the clinic and a trailer where there is room for either one horse or one cow. Animal owners cover the transportation expenses. As regards horse owners, they use mainly their own vehicles for the sick animal transport.

7.7. Emergency service

Emergency service of mobile clinic for large animals is available 24 hours a day. Small animal emergencies are mainly treated in the clinic.

7.8. Mobile clinic

The number of hours of operation is 168 per week. At night and on holidays there are always two veterinarians on duty: one for large animals and one for small animals. Phone calls are directly addressed to veterinarians.

To transport students working in the mobile clinic, Renault Kangoo-1998 is used. The seating capacity of it is 5 seats. For transportation of larger groups of students, the LUA transport (buses) is used. Field-trips are planned in advance for the academic year and are coordinated with the LUA Transport Department.

The approximate number of sick animals seen by the mobile clinic in a year is presented in Table 7.4. All farm animal consultations / treatments, except horses, are done by the mobile clinic.

The average number of visits in a year by the mobile clinic to farms and studs for cattle swine, equine, poultry, small ruminants and others is given in table 7.4. The given figures show the number of visits. Animal groups are considered as one case.

7.9. Other information

Since November 1998 all patients at the FVM are registered by the Veterinary Education Centre's (VEC) training clinic, which is located in the reconstructed premises of the FVM. As an additional outside sources of material for surgery training purposes is used the caught stray dogs and cats. These animals are castrated and subsequently new owners are found for them.

The FVM together with the Veterinary Education Centre offers:

1. 24 hour emergency service for small animals;
2. Free consultations of well – qualified staff of the FVM and foreign professionals;
3. In–patient treatment for small animals, farm animals and horses;
4. Facilities, equipment and personnel for advanced diagnostics – X-ray, ultrasound, endoscopy;
5. Equipment for special treatment or surgery – inhalation anaesthesia, pulse-oxymetry, dentistry equipment.

It is planned to develop the Veterinary Education Centre clinic as a referral one. At present about 15% of all patients have been treated before their arrival at the clinic.

The following areas of clinical specialisation are covered: ophthalmology, orthopedy, dentistry for small animals. Patient appointments are made one week before the visit.

Fee calculation is based on reception (visit), fee, consultation or treatment fee and fees for medicines, laboratory, x-ray and hospitalisation. Fees for clinical service at the FVM and those charged by private practitioners in general do not differ.

Private practitioners participate in the continuing education courses held at the VEC clinic. Good relationship with them provides referral patients for the clinic. There are occasional visits of mobile clinic to the practice of private veterinarians. Client contact with horse owners is managed by a private practitioner.

Since May 2001 there is a centralised patient data recording system with multi-user network in small animal and farm animal divisions of the VEC clinic. Earlier records were available in a written form.

During working hours phone calls to the clinic are managed by a receptionist. During night time and holidays two veterinarians are always on duty – one for small animals and me for large animals (mobile clinic).

7.10.1: Animals available for clinical work:

Ratio: students/production animals

$$\frac{\text{Number of students Graduated in last year}}{\text{number of production animals}} = \frac{26}{437} = \frac{1}{16,81}$$

Ratio: students/companion animals

$$\frac{\text{Number of students Graduated in the last year}}{\text{number of companion animals}} = \frac{26}{2691} = \frac{1}{103.5}$$

7.10.2: Animals available for necropsy:

Ratio: students/post – mortem examinations

$$\frac{\text{Number of students Graduated in last year}}{\text{number of cadavers necropsied}} = \frac{26}{368} = \frac{1}{14.15}$$

2. COMMENTS

The FVM and VEC clinic have good perspective of mutual co-operation to develop clinical services in the future. The faculty staff is motivated to work in the clinic, and individual training of students is well organised.

There are special facilities and personnel at the FVM for hospitalisation of stray dogs and cats. This is supported by the town municipality and is not related to the budget of the VEC clinic.

Administration of the FVM understands the importance of clinical services for training purposes of students and the possibility to use both in-patients and out-patients of the clinic.

The dramatic decrease of the number of large/ farm animals on the large scale of the country affects the number of those animals which could be used for practical training of students.

Due to the fact that there is the VEC small animal clinic and equine clinic at the faculty, the number of patients of these animal species has increased and, therefore, it is possible to involve students in veterinary medical care of animals.

The number of cadavers for necropsies is sufficient and their destruction (incineration) afterwards is also solved. Owing to the co-operation with the Teaching and Research farm “Vecauce”, students have opportunity to do hands-on practice in different veterinary procedures under supervision of experienced veterinarians.

3. SUGGESTIONS

The ratios in 7.10.1. do not fall into the category “satisfactory” as regards the number of large animals used for student training (1: 16,8). The reason is the economic situation in the state and agricultural policy, causing the dramatic decrease of the number of farm animals that, in its turn, affects the number of patients at the FVM clinic.

In chapter 7.10.2, the number of necropsied cadavers is sufficient and exceeds the suggested ratio.

In order to increase the number of animals for student practical training, it is necessary:

1. to purchase a minibus (van) and trailer to go to field-trips within a radius of 10-15 km;
2. to find and attract investments for the purchase of animals for the clinical use;
3. to reduce service fees or offer discounts to those animal owners who would agree to accommodate their animals in the clinic for veterinary medical care and at the same time to allow to use them for student training ;
4. to conclude agreements of co-operation with slaughterhouses and food processing enterprises.

Chapter 8 – LIBRARY AND LEARNING RESOURCES

1. FACTUAL INFORMATION

8.1 Library

Students and academic staff of the FVM have access to the recourses of the main library of the LUA (Fundamental library) and FVM Information Centre.

LUA main library

The main library is available to students of all the Faculties of LUA, including the FVM. The main library is housed in the main administrative building, about 1.5 km from the FVM.

Budget

The annual operating budget over the past three years is as follows:

Year	National currency (LVL)	EUR
1999	24757	41260
2000	25675	42790
2001	35477	59130

Structure and employees

There are 11 divisions in the main library, including Bibliographic Information, New Information Technology, Teaching and Scientific Literature. There is a reading room in the library. The number of full – time employees is 43.

Library fund

On 1 January 2002 there were 509495 copies of publications, out of them 301229 books and 190063 magazines. These publications deal with crop science, horticulture, farm economics, farm machinery, animal husbandry food production, food science, home economics, wood processing , forestry, and veterinary medicine. At present, the main library has subscribed to 6 journals in veterinary medicine – Veterinārais Žurnāls (in Latvian), Animal learning and Behavior; Journal of Animal Science; The Veterinary Journal; Acta Agriculture; Scandinavica section A - Animal Science, Veterinarija (in Russian). Besides, about 20 different titles of veterinary journals published in previous years are in the library.

Bibliographical database

FVM students have access to bibliographical database CD-ROM in compact disc – CURRENT CONTENTS, AGRICOLA, as well as Vet CD that is actual for veterinarians.

Electronic (computer) catalogue

The computer catalogue includes information on the documents issued since 1994 that reached the LUA main library and are available there. The LUA main library together with 8 other large Latvian libraries is a member of the Library Information Network Consortium. The consortium libraries have created a common computer catalogue with access to all the publications of these libraries.

Loans to students

The number of loans to students in 2001/2002 academic year is 601920. Information on the number of loans to students of the FVM is not available.

Library opening hours

The library is open both during term – time and vocations on Mondays to Thursdays from 9 a.m. till 7 p.m., on Fridays from 9 a.m. till 5 p.m., on Saturdays and Sundays it is closed.

FVM Information Centre

The FVM Information Centre is a structural unit of the FVM with one full-time librarian.

Fund and catalogue

The FVM Information Centre publication fund is formed by the LUA main library's former fund, teaching aids published by the faculty academic staff, gifts from different funds, organizations or individuals, as well as about 90 titles of books purchased by the PHARE/TEMPUS project funds in 1999 – 2000. The total amount of the books in the Information Centre is about 3000. At the moment list of publications of the Centre funds is accessible as Excel tables. It is not included into the LUA main library's common catalogue. The Centre receives regularly the Veterinary Journal published by the Latvian Association of Veterinarians, as a gift several journals in English and German: Veterinary Medicine, clinical solutions for companion animal practitioners; Waltham Focus, the worldwide journal for the companion animal veterinarian; Australian Veterinary Journal, Veterinarski Arhiv, journal of the Faculty of Veterinary Medicine University of Zagreb; Lab Animal; Journal of Equine Science; Acta Veterinaria Brno.

Budget

There is not a fixed sum of money (budget) allotted for the Information Centre to purchase new books and subscribe to journals.

Reading room and opening hours

The Information Centre does not loan any publication but it offers opportunities to read them on the spot and photocopy. The reading room is provided with 20 seats for readers. Its opening hours are as follows: on Mondays from 9 a.m. to 6 p.m., on Tuesdays and Wednesdays from 1 a.m. to 6 p.m., on Thursdays from 9 a.m. to 5 p.m. and on Fridays from 9 a.m. to 1p.m.. On Saturdays and Sundays the Information Centre is closed.

As to subsidiary libraries of the establishment, there is teaching literature, textbooks placed in the academic staff's work rooms or training rooms of the relevant subjects. In most cases they are not systemized in a catalogue, but it is used for students training and research and are loaned to students individually in case of necessity.

8.2 Information technology services

Audio – visual service

There is not a separate room for the viewing of video-films at the FVM. At present, there is one multimedia projector connected to a video recorder. It is used to demonstrate teaching films during lectures and training classes. Video recorders are available in several training rooms.

Teaching video films

Teaching staff of different subjects have in their disposition about 120 teaching video films which are used in the teaching process as visual material. In recent 5 years the FVM academic staff members have created teaching films in physiology (2), ethology (3), herd health and internal diseases (3). Video cassettes are used in the teaching process by some lecturers.

Computer service

LUA Computer Network Department

The LUA Computer Network Department is a structural unit of the Faculty of Information Technology. The main goal of the department is to ensure the access to the LUA information systems and Internet for the staff and students. In the department there is a computer room supplied with Internet resources. The use of Internet in the LUA is for money. Students and most of the academic staff cover these expenses themselves.

FVM computer room

Within the premises of the FVM there is a computer room at students' and staff's disposal. It is supplied with 8 Pentium II type computers with Internet connection. The use

of the computer room is free of charge; however, you should pay for Internet service to the LUA Computer Network Department.

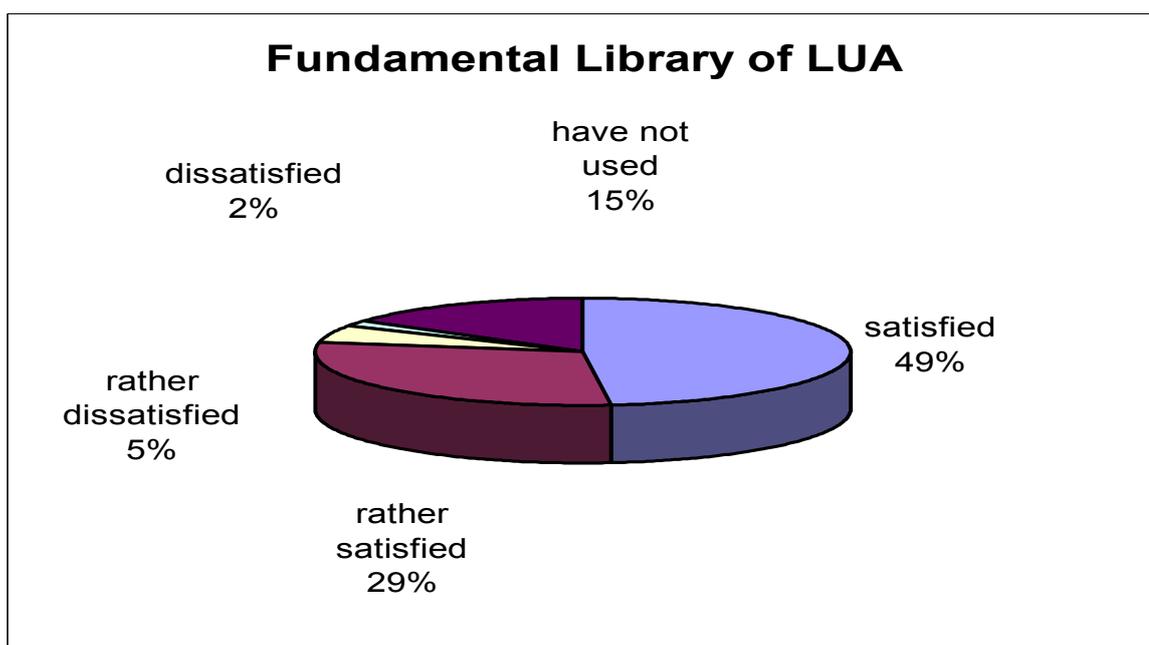
Opening hours of the computer room are from 8.30 a.m. to 5 p.m. every weekday, with the exception of hours when student training takes place there. On Saturdays and Sundays the computer class is closed.

According to the study programme, in the 2nd semester students acquire biometry course and principles of information. The latter is taught by expertise of the Faculty of Information Technology. Part of the training hours is held in the FVM computer room. Several lecturers of veterinary subjects use the computer room for student training. Students have access to interactive CD-ROM teaching programme for individual work: Vetstream Canis, Felis and Equus, Veterinary Physiology, Stedman's Medical Dictionary, Immunology Interactive, 6 min. Veterinary Consult.

2. COMMENTS AND SUGGESTIONS

Library

To find out the FVM students' opinion about the libraries service and accessibility of computers, students of all years were inquired, in total 114. Students had to evaluate the quality of service and opening hours both of the Main LUA library and the Information Centre FVM. Most part of respondents was satisfied with service of the Main library and Information Centre 78% and 59% respectively (Fig. 8-1.)



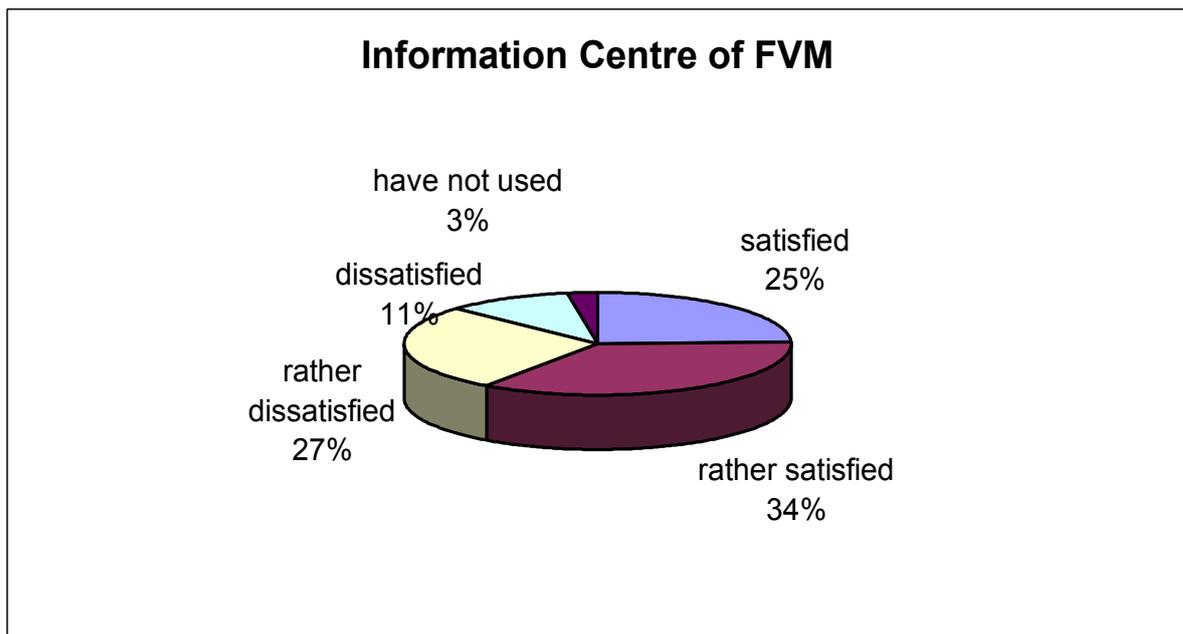


Figure 8-1. Students' opinion (n=144) about literature supply and service quality of the LUA Main library and FVM Information Centre.

However, in our opinion, the choice of supply of veterinary literature should be considered as dissatisfactory in both libraries. It should be taken into consideration that most of the students have not had an opportunity to compare the LUA libraries with those of other veterinary schools abroad. In the FVM Information Centre the choice of new textbooks is wider than that in the Main library. They were purchased for the Phare/Tempus project finances in 1999-2001. However, at present the Information Centre has no finances to supplement its funds with new books and journals, but those bought for LUA finances are deposited only in the Fundamental (Main) Library. As this library is situated in the central LUA building about 1.5 km far away from the FVM, it is rather problematic for students to use the library's service during the day hours. Quite a great number of students are dissatisfied with the working hours of the library in particular with the Information Centre opening hours (Fig. 8-2).

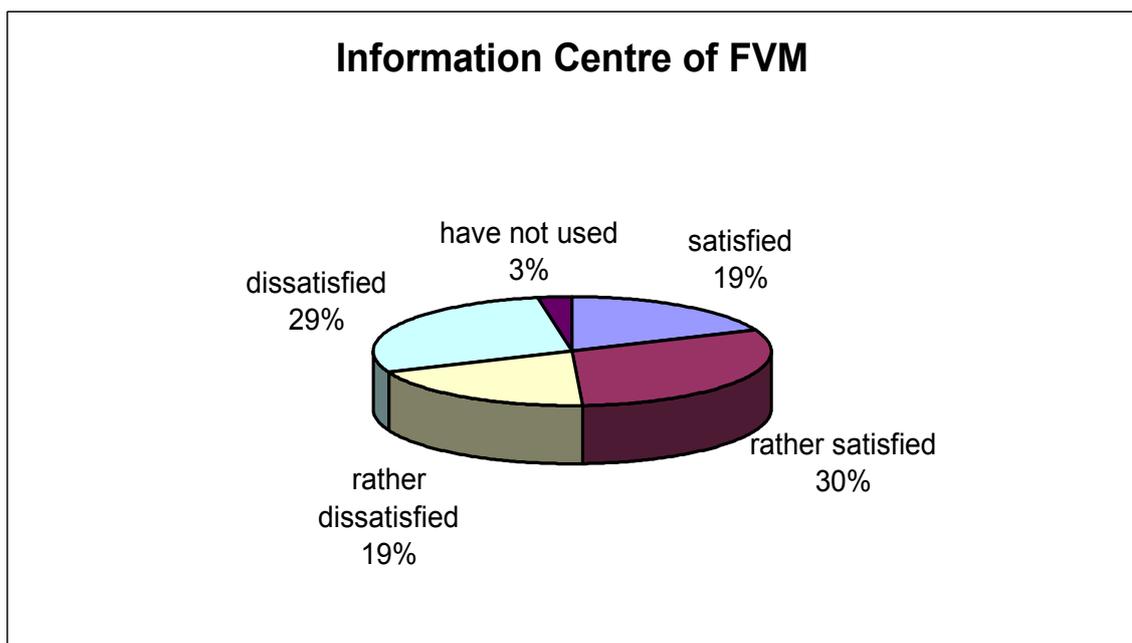
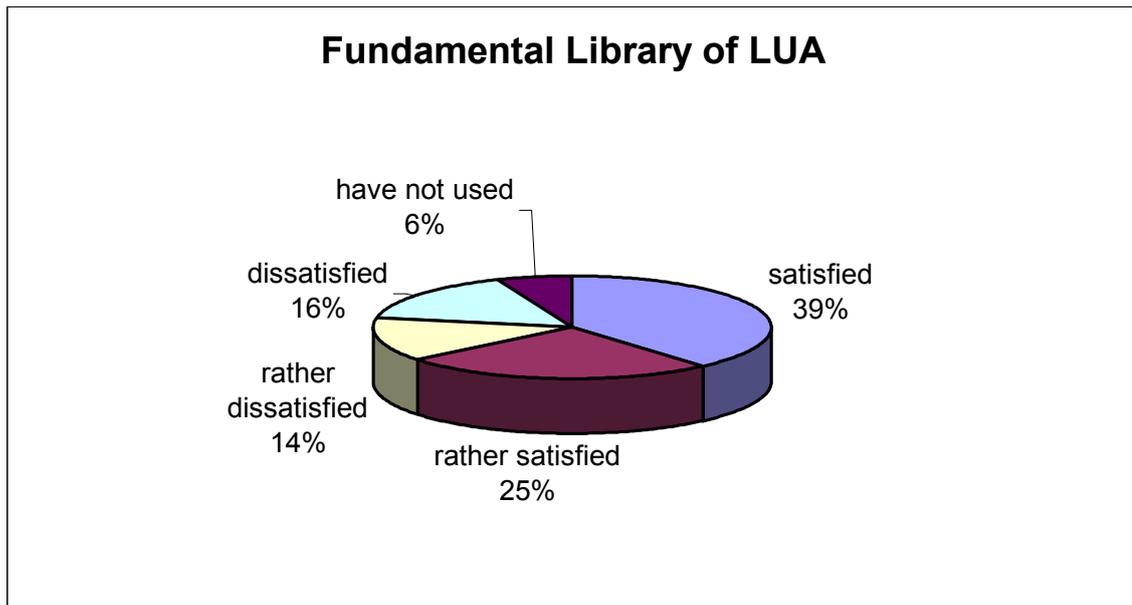


Figure 8-2. Students' opinion (n=144) about the working hours of the LUA Main Library and FVM Information Centre

In order to improve the existing situation additional financial support is needed for the purchase of the newest veterinary literature, including periodicals on veterinary medicine, as well as to employ one more librarian. It also could be suitable to deposit at least one copy of each publication important for veterinary medicine to the FVM Information Centre which are in the main LUA library at present. The newest books of the FVM Information Centre should be included in the common catalogue of the main LUA library to make it easier accessible to staff and students of other departments of the LUA as well as to the Latvian public in all.

Information technology service

The computer room in the FVM is too small to ensure sufficient work space simultaneously for all people interested in. About half of the inquired students consider that the number of places in the computer room is insufficient. Opportunities of self – learning (individual work) are limited due to the short opening hours. That was mentioned by 48% of students respondents (Fig. 8-3).

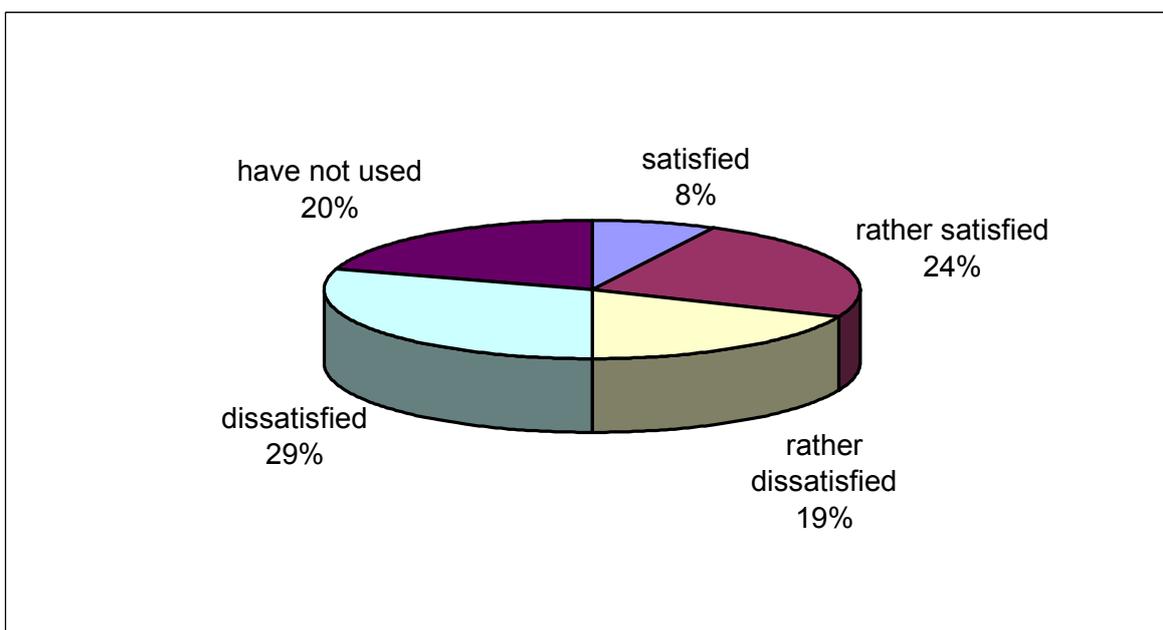


Figure 8-3 Students' opinion about the working hours of the computer room of the FVM.

At the FVM there is not a position of computer technician who could solve any computer problems on the spot, for example, Internet interference. This problem could be solved by allocating finances to hire a computer specialist. At the FVM there are only some CD-ROM training programmes, and only few lecturers use them and suggest using them for student self

– learning process. Video films are mostly used in lectures and practical work. No videoteque is developed at the FVM which could be used by students independently.

Chapter 9 - ADMISSION AND ENROLMENT

1. FACTUAL INFORMATION

9.1. Student numbers

Table 9.1.1: Undergraduate student composition

a.	Total number of undergraduate students	249
b.	Male students	44
c.	Female students	205
d.	Nationals	249
e.	Foreign students	-
	- from EU countries	-
	- from non-EU countries	-
f.	1st year students	63
g.	2nd year students	44
h.	3rd year students	43
i.	4th year students	36
j.	5th year students	25
k.	6th year students	-
l.	7th, or subsequent year students	-
m.	students not in any specific year	38

Table 9.1.2: Postgraduate student composition

		PhD students	MSc Students	Total
n.	Total number of postgraduate students	9	46	55
o.	Male students	2	18	20
p.	Female students	7	28	35
q.	Nationals	9	46	55
r.	Foreign students	-	-	-

	- from EU countries	-	-	-
	- from non-EU countries	-	-	-
s.	1st year students	1	14	15
t	2nd year students	4	21	25
u.	3rd year students	3	5	8
v.	4th year students	1	-	1
w.	5th, or subsequent, year students	-	6	6

Total number of students in the establishment (a + n): **304**

9.2. Student admission

Enrolment of students at the Faculty of Veterinary Medicine is carried out in compliance with the LUA admission rules. Rights to study at the LUA have Latvian citizens and persons who have rights to receive a non-citizen passport of the Republic of Latvia (RL) as well as persons who have received a resident permit. In order to enter the LUA, certificate (diploma) of secondary education must be submitted. Foreigners, who do not have resident permits, rights to study at the LUA are laid down in the Law of Higher Schools of RL article 83. Studies of one programme of full-time students, who are included in the state determined admission quota, are government-funded. Acquisition of another higher education or repeated full-time studies in the same year are possible only for privately funded students. The former students, who have been expelled from the faculty because of non-fulfillment of the curriculum or undignified behaviour, can apply for a repeated admission not earlier than after 10 months.

Applications are accepted from those applicants whose mean mark per year of the secondary education certificate (diploma) is not lower than 4 points in any of the subjects.

Admission is based on the competition taking into consideration the year mark of the secondary education certificate (diploma). The competition for the full-time studies takes place in two groups.

In group one, applicants whose 3-mark sum - the year mean mark of the certificate (diploma), year mean mark in the national language and year mean mark in biology – is not lower than

18 points participate in the competition without entrance examinations. Applicants of the first group have rights to take examination in biology and then participate in the competition with the obtained mark which is added to the total sum of points instead of the corresponding mark of the certificate (diploma). An application should be submitted to take the examination.

In the second group are included students whose sum of the above mentioned marks is lower than 18 points. To participate in the competition they take examination in biology. Requirements of the above mentioned examination comply with the requirements of the secondary school programme. The applicant participates in the competition with the obtained mark which is added to the total sum of points instead of the corresponding mark of the certificate (diploma).

In the following cases students are admitted beyond competition in a full-time study course:

- first three prize winners of international and national olympiads accepted by the Ministry of Education and Science of RL during the last three years;
- first three prize winners of the LUA organised competitions in subjects relevant to the study speciality, provided for the sum of points of the above mentioned subjects is at least 18 points;
- successful students who have graduated from the LUA Pre-higher School Education Department in compliance with the regulations of the Department and within the limits stated by the faculty;
- soldiers retired from the military service who have a secondary education (not later than two years after retirement) and the total sum of marks of the above mentioned three subjects is at least 18 points or after passing successfully the entrance examination.

Students are included in the government–funded quota according to the sum of points obtained in the competition. Every year 50 full-time undergraduate students are admitted in the government–funded quota. There are no essential changes in the number of the admitted students who are government–funded during the last decade. The number of government–funded student places is determined by the necessary number of veterinarians both in the state service and private practices. Intake of veterinary students see Table 9.2.

A certain number of students (10-12) are admitted for part payment of tuition fees which are approved by the LUA Senate yearly. In the academic year 2002/2003 tuition fee is determined Ls 330.

Number of students during the course of 5 year studies has not decreased recently. The main reasons of drop-outs are as follows:

- discharged due to non-completion of all subjects in the curriculum (42.6 %),
- discharged due to family problems (37.4%),
- discharged due to not returning back from the academic leave (19.4%),
- due to changes in the study programme (6.5%).

Great number of drop-outs is due to non-completion of all subjects in the curriculum. It could be explained by the fact that students starting veterinary training have very variable knowledge base in scientific disciplines from their studies at school in physics, chemistry, mathematics. The reason is insufficient competition at the FVM in comparison with other study programmes at the university. Part of the students lack preliminary knowledge and motivation to study is not clear as well. It should be pointed out that the FVM is not able to ensure the demand for veterinary professionals because of the large number of drop-outs; nevertheless, the faculty does not plan to change the number of students to be admitted, as the number of graduates can be increased by decreasing the number of drop-outs.

Table 9.2. Intake of veterinary students

Year	number applying for admission	number admitted	
		'standard' intake	other entry mode (describe)
2002	76	50	13
2001	80	50	15
2000	88	52	19
1999	68	52	3
1998	96	56	14
1997	91	66	2

1996	113		50		4
1995	101		51		-
1994	91		66		-
1993	97		50		-

9.3. Student flow

Table 9.3.1. **Student flow**

Of the students whose admission year was 1997 how many are at present (five years later) in the:

b.	1st year	-
c.	2nd year	-
d.	3rd year	2
e.	4th year	1
f.	5th year	6
g.	how many have graduated	16
h.	how many have dropped out or been asked to leave.	38
i.	how many are not in any identifiable year	5

Table 9.3.2. **Number of students graduating annually (from undergraduate training) over the past five years**

	Year	Number graduating
j.	2002	26
	2001	19
	2000	25
	1999	27
	1998	21

Table 9.3.3: Average duration of studies

	Duration of attendance	number
k.	4 years	-
l.	5 years	16
m.	6 years	2
n.	7 years	2
o.	8 years	1
p.	9 years	2
q.	10 - 13 years	4
	Total	26
Average duration of studies of the students who graduated in year 2002:		6,7

Studies of obligatory and optional subjects are organised in a certain succession. For example, examinations in anatomy and histology must be passed in order to take examination in physiology. Procedure of studies is determined by the curriculum. Obligatory and optional subjects and their volume in CP are indicated in semesters of the curriculum. In order to be promoted to a subsequent year of the course students must successfully complete all the subjects and examinations in the curriculum of the course, including course papers midterm tests and practice.

Discharge of students from the faculty is regulated by the LUA study regulations approved by the LUA Senate (decision 4-24 of 9 May 2001) which states that student is discharged by the Rector's order. Person can stop studies at his/her own will in compliance with the learner's application signed by the dean of the faculty. Person can be discharged on the dean's or vice-rector's proposal if:

1. a student has violated the principle of equality, it has been ascertained that the admittance or study results have been affected by deception, bribery or other action;
2. a student is not pursuing the established requirements of syllabus;
3. a student has violated regulations of internal order of the establishment.

The discharged person can apply for renewal of studies not earlier than after 10 months.

2. COMMENTS

Students are admitted at the FVM according to the competition results and each applicant is assessed individually and interviewed by the academic staff of the faculty. It should be pointed out that after regaining Latvia's independence programmes of secondary schools were changed and such subjects as biology and chemistry became as electives (optional). Level of knowledge in these subjects was lowered and the number of persons willing to take the study programmes requiring high standard performance in the above mentioned subjects decreased as well. The number of students is also affected by rather difficult and long duration of the course of studies (6 years). Having chosen veterinary medicine studies, the future specialist can start his/her carrier in the labor market later in comparison with others.

Alongside with the changes of the economic situation in the country, demand for veterinarians and their specialization also changed. During the Soviet occupation years farm animal veterinarians were prevailing that is why only a tiny part of the curriculum was devoted to small animal subject teaching. Since 1990, when socio-economic changes started in Latvia, the number of productive animals has decreased and interest in small domestic animals, dogs and cats, has increased. Private practices and clinics have been developed, demand for relevant specialists has changed.

In 2001 the demand for educated specialists increased in the field of food hygiene and inspection. According to the demands, the study programme of the FVM was also changed. At present the FVM is not able to meet the demand for specialists of this specific field yet. The preferable number of graduates would be 50 specialists, taking into consideration that the FVM is the only education establishment of this profile.

The number of students admitted at the faculty is determined by the state allocated budget. Every year 50 student places at the FVM are government-funded. Interest of applicants to study veterinary medicine is also one of the factors determining the number of students because apart from the above mentioned 50 students the FVM intakes about 10-15 students for part payment of tuition fees. This tendency is more pronounced in the last three years.

At present the FVM can ensure education for the existing number of students. The load of lecture rooms and laboratories is only about 40 %. This could be a good factor to increase the number of students in the future to reach the needed number of veterinary specialists in Latvia. It should be stressed that the practical training of students in clinical subjects is

problematic because the faculty is not able to provide large animals enough for the teaching process. To practice in different manipulations with large animals, students are given an opportunity to acquire them outside the faculty during the practice and on field-trips to the teaching and research farm “Vecauce”.

The FVM study programme is reviewed regularly and corrected according to the demands of the market and development of the speciality. In 2001 the FVM started a six-year study programme which in general meets the EU directions and EAEVE requirements.

Students, who are interested in veterinary studies, have all opportunities to successfully acquire the programme throughout the entire course. Unfortunately, one of the reasons that interferes with making good progress is lack of necessary knowledge in general subjects which had to be obtained in secondary school, as well as laziness and lack of ability to organise intensive and continuous studies of new subjects. That gives a reason for discharging students from the 1st and 2nd year. Among them there are students who are not sure if they have chosen the right speciality. Students who have not passed examinations and tests in time, are given an opportunity of extra time (academic leave) to pass these examinations. Such an opportunity can be used only twice during the course of studies. While being on the academic leave, student has rights to use the library service, take tests and examinations but does not receive scholarship. Privately funded students do not pay tuition fee during this time. In case a student due to illness or other important reason fails to maintain his/her progress, he/she may be allowed to have extended examination session (an extra time is given).

Unfortunately, the number of graduates is unsatisfactory over the last years (see Tab. 9.3.2.). It is only 20-23% of the admitted students. As most of the students leave the course in the 1st and 2nd year, that shows evidence that students are not motivated to study veterinary medicine and successfully make progress due to negligence and laziness. The probable reason could be problems of secondary education.

SUGGESTIONS

As far as the ratio of admitted students to graduates from the FVM is insufficient, the decrease of the number of drop-outs should be achieved by the following measures:

- to carry out an information campaign in the secondary education establishments, to explain the fields and possibilities of activities of a veterinary specialist as well as possible difficulties with studies;
- to increase the competition points for the 1st group of applicants in order to enter the FVM, so the number of students who take examination in biology will be increased and there will be one more possibility to test applicants' knowledge;
- to work with the 1st year students more intensively and facilitate to maintain satisfactory progress and motivation of studies;
- to control systematically the students' success level, paying a special attention to failures;
- to appoint control time of resetting examinations and to envisage transfer from governmental funded studies to tuition fees for those students who do not complete the curriculum.

Chapter 10 - ACADEMIC AND SUPPORT STAFF

1. FACTUAL INFORMATION

The principles of academic staff formation and tasks are determined by the LUA Constitution envisaging that the academic staff of the Latvia University of Agriculture, incl. the Faculty of Veterinary Medicine consists of: professors, associate professors, docents, leading researchers, lecturers, researchers, assistants. The academic staff participates in education of students, carries out research and publishes the research results.

The amount of tasks in both kinds of basic activities is determined by a regulation confirmed by the Senate.

The principles of salary payment at the Latvia University of Agriculture are determined by the Senate, but the payment rates may not be lower than the rates determined by the Cabinet of Ministers.

Elected professor, associate professor, docent and administrative posts (Rector, Vice – rector, Dean) can be occupied according to the Latvian Republic legislation. The Rector depending on financing by the state or assigned from other sources signs individual contracts with the academic staff on training students or doing research work with definite payment for a definite amount of work according to the qualification of the employee. Professors and associate professors after reaching the age of retirement can be awarded the title – professor emeritus by the Senate for special achievements in science and higher education.

Professor is a specialist internationally acknowledged in his/her branch who carries out research work corresponding to the present level and ensures high quality studies in the corresponding sub – branch of science. A person having the Doctor degree and not less than three years experience working as an associate professor or professor can be elected in the post of professor. Professors are elected voting openly for six years by the Professor Council of the corresponding branch and the Rector signs with him/her a contract for the whole elective period or other definite period of time.

The main tasks of the professor are:

1. Delivering of high quality lectures, supervision of studies, sessions and assessment in his/her study course;
2. Supervision of research work in the sub – branch of science corresponding to the title of the professor post;
3. Participation in development of study programmes, assessment of quality and work of higher educational establishments and their structural units;
4. Supervision of doctoral level studies, preparation of new generation of scientists and teachers.

A person having the Doctor degree can be elected in the post of associate professor. For implementation of professional study programmes according to a regulation confirmed by the Senate also a person without the Doctor degree having corresponding higher education and at least 10 years practical work experience in the corresponding branch can be elected in the post of associate professor. Associate professor is elected in open competition for six years by the Professor Council of the corresponding branch and the Rector signs with him/her a contract. The Senate of the Latvia University of Agriculture decides on the number and the list of associate professor posts depending on the necessity and available finances.

The main tasks of the associate professor are:

1. Active research work in the sub – branch of science corresponding to the title of the associate professor post;
2. Being scientific adviser in research work for obtaining the Doctor and Master degree;
3. Supervision of education work, especially sessions and assessment in the higher stage of studies in the corresponding course, delivering lectures;
4. Preparation of new generation of scientists and teachers.

The Senate of the Latvia University of Agriculture decides on the number of associate professor posts depending on the necessity and availability of finances according to the proposal of the Rector.

The procedure of professor and associate professor elections takes place in the order determined by the Law on Higher Educational Establishments.

A person having the Doctor degree can be elected in the post of docent. A person having higher education without a scientific degree and having at least 7 years of practical work experience can be elected in the post of docent in professional study programme profile subjects. Docents are elected for six years by the faculty Council in the order determined by the Senate. The Senate decides on the number and list of docent posts depending on the necessity and availability of finances.

The main tasks of the docent are:

1. Delivering lectures, teaching at sessions, organising of exams and assessment in his/her study programme (course, branch), especially in basic courses.
2. Research work in the sub – branch of science corresponding to the title of the docent post.

The leading researchers and researchers can be elected in the post for doing research work at faculties and institutes in compliance with the law “On Research Activities”.

Persons having the Doctor or Master degree can be elected in the post of lecturer. Lecturers are elected by the faculty Council for six years in the order determined by the Senate.

The main tasks of the lecturer are:

1. Research work in accordance with research work programmes of the department (laboratory);
2. Delivering lectures, teaching at sessions, assessment of students at examinations and tests in subjects.

A person having the Doctor or Master degree can be elected in the post of assistant. Assistants are elected for six years by the faculty council in the order determined by the Senate.

The main tasks of the assistant are:

1. Participation in research work in accordance with the tasks of the research work confirmed at the department (laboratory);
2. Teaching laboratory (practical) work and assessment of students at tests;

3. Help for professors and associate professors in their pedagogical work.

The order of election of academic staff for professional study program profile subjects is determined by the Senate of the Latvia University of Agriculture in compliance with the requirements of the Law on Higher Educational Establishments.

Data on the academic staff

In provision of the higher professional study programme 62.1 teachers are involved, 20% being professors, 32.5% docents, 26% lecturers and 21.5% assistants or according to the scientific qualification 44,5% being Dr. hab. or doctors. The average age of the teachers at the Faculty of Veterinary Medicine is 47 years and they comprise 48% of the total number of teachers in the veterinary medicine study programme.

One of the Dr. hab. is a Member of the Latvian Academy of Sciences (academician), one is a corresponding member of the Latvian Academy of Sciences, two of the professors are members of the Academy of Science of Agriculture and Forestry, one professor is the Head of the Promotion Council, three are members of the Promotion Council, two are experts of the branch, four teachers are the LUA Senate members. Several teachers work as advisers in different organisations of the branch.

The teachers of the faculty have participated in exchange programmes or improved their qualification abroad and at different courses and seminars in Latvia. In the future it is planned to promote international co – operation making it possible for the teachers to be trained at other higher educational establishments and scientific institutions. From the study year 2000/2001 the teachers and students participate in international ERASMUS/SOCRATES exchange programmes.

The teachers of the faculty deliver lectures and seminars at the Latvian Agricultural Advisory centre, they take part at different agricultural exhibitions.

The teachers of the Faculty of Veterinary Medicine teach also at other faculties of the LUA giving basic knowledge to the students of the Faculties of Rural Engineers, Agriculture and Economics. In turn, also teachers from other faculties of the LUA participate in implementation of the FVM study programme.

Table 10.1: Personnel in the establishment

	Budgeted posts (FTE)	Non-budgeted posts (FTE)	Total (FTE)
1. Academic staff			
a) Teaching staff	29,75	-	29,75
b) Research staff	26,5	-	26,5
c) Teaching staff from other faculties	32,35	-	32,35
d) Total academic staff	88,6	-	88,6
2. Support staff			
e) responsible for the care and treatment of animals	3	-	3
f) responsible for the preparation of practical and clinical teaching.	20,5	-	20,5
g) responsible for administration, general services, maintenance, etc.	6	-	6
h) engaged in research work	9,5	-	9,5
i) office cleaners, yard-keepers, drivers, electricians, carpenters	30,5	-	30,5
j) Total support staff	69,5	-	69,5
3. Total staff (d + j)	158,1	-	158,1

Table 10.2.1. Allocation of academical personnel to institutes

Name of Institute	Full prof.	Prof. senior	Assoc. Prof.	Docents	Lecturer	Assistant	Subassistant	Research staff
PREK	-	1	0,25	2,5	1,5	1,5	-	-
KLIN	0,5	0,5	2	3,75	0,5	1,75	3,5	-
PVHI	1	1	1	1,5	4	2	-	-
SIGRA	-	-	-	-	-	-	-	26,5
TOTAL	1,5	2,5	3,25	7,75	6	5,25	3,5	26,5

Table 10.2.2. Allocation of support staff to various institutes

Name of Institute	Technical/animal		Admin./general
	Teaching	Research	
PREK	5,0	-	-
KLIN	9,5	-	-
PVHI	6,0	-	-
SIGRA	-	9,5	3,0
Deans board	-	-	3,0
Total	20,5	9,5	6,0

Table 10.3: Personnel responsible for undergraduate teaching

A.	Number of budgeted and non-budgeted teaching staff involved in undergraduate teaching	62,1
B.	Number of research staff involved in undergraduate teaching (see explanation to this table above)	-
C.	Total number of personnel responsible for undergraduate teaching (A + B)	62,1

Ratios

Ratio: teaching staff/undergraduate students

$$\frac{\text{number of teaching staff}}{\text{number of undergraduate students}} = \frac{62,1}{249} = \frac{1}{4}$$

Ratio: teaching staff/support staff

$$\frac{\text{number of teaching staff}}{\text{number of support staff}} = \frac{62,1}{69,5} = \frac{1}{1,12}$$

The number of the academic staff at the FVM depends on the number of students and the load of the teachers in studies – according to the LUA regulations the load of one teacher is 620 contact hours per year. Equally the distribution of the academic staff among institutes is determined.

Unfortunately, there are some difficulties in completion of the academic staff and its renovation as the salaries for the youngest teachers – assistants and lecturers do not reach the average level of salaries in the country. Therefore, the FVM uses the services of half – time teachers the basic work place for them being the State Food Veterinary Service or private

practice. It is especially difficult to motivate the graduates from the faculty for work at the FVM as further studies in the graduate course and post – graduate course (total length 5 – 6 years) and the low payment related to it is not competitive in the labour market.

Income from the economic activities of the FVM is included in the LUA budget and returns to the faculty for provision of the study process but it is not directly used for payment of employees additionally as there exists a centralised salary fund at the LUA from which the salaries are paid to the faculty personnel.

Possibilities to work outside the university are discussed in the contract signed by every staff member with the Rector of the LUA, permission of the Rector is required for associate professors and professors for work outside the LUA (except research work). Other employees have the rights to have private practice and other additional work after the working hours.

The academic staff of the FVM can participate in scientific conferences. Once in two years also the FVM organises international scientific conferences, the last conference took place on November 14 – 15, 2002. If a teacher participates in a conference his/her salary remains constant but expenses for the business trip are not paid, travelling expenses are covered if they are envisaged by the FVM budget. The academic staff can apply to the Ministry of Agriculture of the LR as in the regulation on subsidies of the MA there is an item that envisages covering of travelling expenses in the amount of 50% to participate at scientific conferences and seminars.

The academic personnel has the rights for yearly paid eight week, but after every six years – paid six months academic leave for scientific research or research activities outside the university or for preparation of text books and teaching aids; the academic personnel has the rights to get paid three months study leave for preparation of the Doctor dissertation; professors, associate professors and docents have the rights during one election to ask for an unpaid leave for the time up to 24 months to work as guest professors or guest lecturers in academic posts of other higher educational establishments.

2. COMMENTS

Commenting on the number of teachers involved in implementation of the FVM study programme 62.1 and further from this number calculated relation among teachers and students

– 1:4 that could be considered as satisfactory, it should be noted that from the mentioned number of teachers only 29.75 are teachers of the FVM, the others are employees of other faculties of the LUA. The small number of posts at the faculty creates a range of problems – one and the same teacher has to teach several subjects (even up to 4 different subjects for one teacher) that interferes with the scientific work of the teacher as well as with profound preparation of the corresponding subject and also inclusion of new teachers at the FVM. Unfortunately, the small number of students at present does not allow to increase the number of the academic staff.

It should be noted that the number of teachers with the highest scientific qualification working at the faculty is insufficient, only 38% of them have the Doctor or Dr. hab. degree, 41% of the teachers have the Master degree and 21% - professional qualification.

The level of salaries at the LUA is as follows: salary for the state professor before taxes – 420 LVL (689 EUR), associate professor salary – 210 LVL (344 EUR), docent – 180 LVL (295 EUR), lecturer 150 LVL (246 EUR), assistant – 120 LVL (196 EUR). The salaries of lecturers and assistants are lower than the average salary in the state.

Comparing to the private sector it should be noted that in private small animal clinics the salary level is higher, about 240 LVL (394 EUR). But in the large animal practice the income is averagely 80 LVL (131 EUR), in the range of 30 – 500 LVL (50 – 820 EUR).

3. SUGGESTIONS

The number of students at the FVM should be increased reducing the number of expelled students as well as offering further study courses that could give a possibility to enlarge the number of the FVM academic personnel.

It has been stated in self – evaluation that special attention is to be paid to renovation of the teachers. At all institutes of the faculty assistants and probation assistants are involved for the perspective of new generation. It is reasonable to prognosticate that a range of the young teachers will improve their scientific qualification defending their Master or Doctor scientific degrees in the science of veterinary medicine.

Chapter 11 - CONTINUING EDUCATION

1. FACTUAL INFORMATION

Table 11.1.1. Courses organised by the FVM itself in the most recent years (2001, 2002)

Date	Title of the course	Number of participants	Total number of hours of the course
2001			
July 2–13	Artificial insemination of farm animals	12	105
2002			
January 7–18	Artificial insemination of farm animals	3	105
March 20	Modern quantitative epidemiology	100	7
March 20	Organisation of public catering control	64	7
October 14	Seminar on pathology of diseases	78	9
November 14-15	International scientific conference: Animals Health. Food quality.	460	7

Table 11.1.2. Courses organized by the FVM itself in the preceding year (2000)

Date	Title of the course	Number of participants	Total number of hours of the course
September 29	International scientific conference: Current issues in veterinary medicine	200	6
December 12	State veterinary surveillance. Qualification test	52	5
December 13	State veterinary surveillance. Qualification test	69	5

Table 11.1.3. Courses organised at the FVM by the Veterinary Education Centre, Ltd.
(2001, 2002)

Date	Title of the course	Number of participants	Total number of hours of the course
2001			
February 6	Discussion about clinical cases: Wound healing problems	2	3
February 13	Theoretical and practical training course: Castration and spaying of small animals	2	3
February 20	Lecture: Health problems in pigs in industrial production conditions	4	3
February 23	Swine and cow diseases	17	8
February 27	Discussions about current issues in the community of veterinarians of the State Veterinary Service and private practitioners	6	3
March 6	First aid in cases of colic	2	3
March 13	Diseases of reproductive system in cows	7	3
March 15-17	Introduction to treatment of dogs and cats	7	21
March 20	Theoretical and practical training course: Castration and spaying of small animals	3	3
April 4	Most frequent dental diseases	4	4
April 17	Caesarean section in the cow	8	4
April 23	Veterinary practice on a dairy farm. Danish experience	48	5
April 24	Strategy of development of cattle breeds in Latvia. Assessment of sires	4	3
May 15	Most frequent dental diseases in small animals	6	3
May 22	Review of clinical cases: Diabetes mellitus in dogs and cats	9	4

Date	Title of the course	Number of participants	Total number of hours of the course
May 29	Theoretical and practical training course: Castration and spaying of small animals	3	3
June 5	Bacteriological diagnostics of cow mastitis in a private practice	8	3
June 7-9	Introduction to treatment of cats and dogs	10	21
July 31	Seminar on sheep and goat diseases	53	6
August 12	Pathogenesis, diagnostics and prognosis of tumours in dogs and cats	46	6
September 11	Complications in wound healing: osteomyelitis, caro luxurians. Review of clinical cases	12	3
September 18	Parturition management in small animals. Review of clinical cases	15	3
September 25	Theoretical and practical training course: Castration and spaying of small animals	2	4
October 2	Opinions of veterinarians practitioners and specialists of the Food and Veterinary Service about veterinary prescriptions	17	4
October 9	Bacteriological diagnostics of cow mastitis in a private practice	14	3
October 16	Traumas of abdomen and thoracic cavity	11	4
October 23	Current issues in the market of veterinary pharmaceuticals	11	3
October 30	First aid in case of colic in horses	4	3

Date	Title of the course	Number of participants	Total number of hours of the course
November 6	Acidosis, alkalosis in ruminants: causes, diagnostics and treatment	26	4
November 13	Theoretical and practical training course: Castration and spaying of small animals	3	3
November 20	Radiology 1	10	4
November 27	Radiology 2	10	5
December 4	Radiology 3	10	5
December 11	Radiology 4	15	4
December 18	Radiology 5	10	3
2002			
January 15	Review of clinical cases: Eye diseases in dogs and cats: retrobulbar abscess, exophthalmos, uveitis	6	3
January 22	Theoretical and practical training course: Castration and spaying of small animals	4	3
January 29	Methods of treatment of bone fractures	7	4
February 5	Acidosis and alkalosis in ruminants	9	3
February 12	Most important rabbit diseases in Latvia: prevention and treatment	30	4
February 19	Bacteriological diagnostics of cow mastitis in private practice	10	4
March 3	Identification of horses	5	3
March 8	Respiratory diseases in horses; participation of horses in competitions	25	6
March 12	Castration of stallions: narcosis, surgical technique, possible complications and unusual cases	3	3
March 19	Differential diagnosis of metabolic diseases	18	3

Date	Title of the course	Number of participants	Total number of hours of the course
	in cows in post-partum period		
March 26	Gynaecological diseases in cows	14	3
Mach 29	Horse teeth, examination of the horse before purchase	13	4
April 2	Radiology 1	11	3
April 9	Radiology 2	4	3
April 16	Radiology 3	4	3
April 23	Methods of treatment of bone fractures in small animals	10	3
April 30	Radiation safety, main principles and structure in the Republic of Latvia	12	4
October 1	Psychology of communication	15	3
October 15	Theoretical and practical training course: Castration and spaying of small animals	2	4
October 22	Pathologies of horse teeth growing, change and occlusal evaluation	10	4
October 29	Radiography of urinary tract in dogs and cats	7	4
November 5	Difficult employees and clients	21	3
November 12	Clinical biochemistry in diagnostics of diseases	5	4
November 19	Tooth extirpation in dogs and cats	7	4
December 3	Client oriented communication	14	3

Table 11.1.3.1. Courses organised at the FVM by a/s “Latvijas Zoovetapgāde” in cooperation with Pfizer AHG (2002)

Date	Title of the course	Number of participants	Total number of hours of the course
February 26	Seminar on the use of Antisedan and Domitor in Latvia	40	4
April 3	Swine respiratory and reproductive syndrome viral infection, its subsequences and control possibilities. Vaccination of pigs against SRRS	43	5

11.2. Distance learning

The Veterinary Education Centre also organises distance learning courses for private practitioners. Questions of distance learning are published in a monthly newspaper “Vēstule Latvijas Veterinārārstiem” (Letter to Latvian Veterinarians) which has been transformed into journal “Veterinārais Žurnāls” since 2002, which is received by every veterinarian a member of the Latvian Association of Veterinarians. Every month about 10 – 15 veterinarians participate into distance learning.

2. COMMENTS

Most of the courses of continuing education held at the FVM are organized by the veterinarian Education Centre. The Centre is a non-profit organisation where 11 capital shares (parts) are held by the FVM of LUA, 5 shares – by the Latvian Association of Veterinarians and 4 shares – by the Vet Fund Ltd. There are 12 employees at the Centre, 10 of them are veterinarians and 2 technical workers.

Themes of the courses of continuing education are organised and divided into animal species. Courses for private practitioners take place every or every second Tuesday. In summer courses are held some times a month. Themes of the courses are thoroughly chosen and approved at the meetings of the Centre taking into account results of questionnaires and recommendations of private practitioners.

The FVM has developed a close co-operation with the Vet Fund (Veterinary Support Fund of the Latvian University of Agriculture) in the organisation of courses. The FVM also has right of voting in administration of this organisation. The Vet Fund is a non-profit organisation with 7 employees, 5 of them are veterinarians, one accountant and one computer specialist.

The academic staff also takes an active part into continuing education courses organised both outside bodies and at the FVM giving lectures.

Some times a year the large-scale shop of pharmaceuticals A/S “Latvijas Zoovetapgāde” organises courses together with the FVM in the premises of the faculty and presents information on the latest medicine imported in Latvia.

Every veterinarian receives a certain number of credits for attendance of the continuing education courses which are needed for the extension of validity of the licence of veterinary practice.

The FVM in co-operation with the State Food and Veterinary Service has started to develop programmes of continuing education for veterinarians employed at the state service. As the first successful attempt of this collaboration should be mentioned qualification tests for the state employed veterinarians at the end of the year 2000.

Summary of courses in 2001 – 2002

Animal species	2001		2002	
	Number of courses	Number of participants	Number of courses	Number of participants
Cows	8	124	9	475
Sheep, goats	1	53	-----	-----
Pigs	2	21	2	197
Horses	5	43	5	56
Small animals	17	142	11	102
Rabbits	-----	-----	1	30
Type of the course	2001		2002	
	Number of courses	Number of participants	Number of courses	Number of participants
Discussions Seminars	2	23	2	164
Other Branch of veterinary medicine	2001		2002	
	Number of courses	Number of participants	Number of courses	Number of participants
Veterinary pharmacology	1	11	1	40
Food hygiene and inspection	-----	-----	1	154
Psychology of communication	-----	-----	3	50

3. SUGGESTIONS

The continuing education courses should be held more regularly than at present providing programmes planned in advance for all the academic year.

In fact most continuing education courses are held outside the FVM. In our opinion, the FVM should become the place where these courses are held because it has well-qualified specialists who can ensure the most recent information on veterinary issues.

It should be also mentioned that the FVM co-operates with other veterinary schools abroad and it is possible to invite foreign expertise.

Location of the FVM in Jelgava should be considered convenient as it is only 42 km² from the capital Rīga where there is the State Food and Veterinary Service and the Ministry of Agriculture.

A unified coordination system of the continuing education is needed.

Chapter 12 POSTGRADUATE EDUCATION

1. FACTUAL INFORMATION

Table 12.3: Postgraduate research training programmes

(a) Master level Discipline and/or department	Duration of training. Volume CP	Number enrolled	
		Full time	Part time
1. Obligatory subjects	25 - 35		
1.1. General subjects of speciality	10 - 20		
<ul style="list-style-type: none"> Methodology of investigation extended course/ Faculty of Agriculture and Faculty of Veterinary Medicine Research Center “Sigra” 	3.0	13	33
<ul style="list-style-type: none"> Biochemistry/ Faculty of Food Technology Department of Chemistry 	5.0	13	33
<ul style="list-style-type: none"> Cell biology/ Faculty of Veterinary Medicine (FVM) Preclinical Institute 	3.0	13	33
<ul style="list-style-type: none"> Imunology/ FVM Institute of Food and Environmental Hygiene 	2.0	13	33
1.2. Special course (Department decides subjects to be studied for its master students)	15 –20		
<ul style="list-style-type: none"> Morphology/ FVM Preclinical Institute 	15 - 20	-	2
<ul style="list-style-type: none"> Physiology/ FVM Preclinical Institute 	15 - 20	2	-
<ul style="list-style-type: none"> Veterinary pharmacology and toxicology/ FVM Clinical Institute 	15 - 20	-	1
<ul style="list-style-type: none"> Internal diseases/ FVM Clinical Institute 			
<ul style="list-style-type: none"> Obstetrics and gynaecology/ FVM Clinical Institute 	15 - 20	2	-
	15 - 20	4	2
<ul style="list-style-type: none"> Surgery/ FVM Clinical Institute 			
<ul style="list-style-type: none"> Parasitology/ FVM Institute of Food and 	15 - 20	1	-
	15 - 20	1	2

Environmental Hygiene			
• Infectious diseases and microbiology/ FVM Institute of Food and Environmental Hygiene	15 - 20	2	14
• Food hygiene/ FVM Institute of Food and Environmental Hygiene	15 - 20	1	9
• Environmental Hygiene/ FVM Institute of Food and Environmental Hygiene	15 - 20	-	3
2. Optional subjects	15 - 25	13	33
2.1. Obligatory part, including:	10 - 20		
• Philosophy of science/ Faculty of Social Sciences Department of Philosophy	2.0	13	33
• Special course of foreign language/ Faculty of Social Sciences Department of Languages	2.0	13	33
• Use of mathematic methods/ Faculty of Information Technology Department of Mathematics	2.0	13	33
• Practice of research (appointed by the departments she/he specialises)	4 - 14	13	33
2.2. Optional part	5 - 10	13	33
3. Optional subjects (free choice), including LUA central offer:	5 - 10	13	33
• Psychology/ Faculty of Food Technology Institute of Education and Home Economics	2.0	13	33
• Sociological investigations/ Faculty of Social Sciences Department of Sociology	2.0	13	33
• Rhetoric/ Faculty of Social Sciences Department of Philosophy	2.0	13	33
• Management/ Faculty of Social Sciences			

Department of Philosophy	2.0 - 3.0	13	33
• International economic relations/ Faculty of Economy Department of Economics	2.0	13	33
• Special course of informatics/ / Faculty of Information Technology Department of Informatics	3.0	13	33
4. Elaboration and presentation of master thesis	20 - 25	13	33
Total	≥ 80 CP	13	33

2. COMMENTS

- The obtained qualification is Master's Degree of veterinary medicine (Mgr. med.vet.). Each year persons who have obtained higher education in veterinary medicine (diploma of veterinary surgeon) can apply for master studies of the Faculty of Veterinary Medicine (FVM).
- Full time master studies last for 2 years and that of part time master programme takes 4 years of studies.
- Successful full time master students receive state scholarship of Ls 15 monthly. Part time students should pay study fee to the Latvian University of Agriculture (LUA) of Ls 190 per year, except employees the LUA, for them studies are free.
- There is not a special funding for master students. At present, the level of master research often depends on the supervisor's success to get involved into grant themes of the Latvian Council of Science or other programmes together with his/her master students. By the year 2000 all the admitted master students had an opportunity to complete their studies, to work out and present master thesis.
- During the course of master studies students are to improve their professional skills in other higher educational establishments. The FVM has signed agreements:
 1. With Hannover Veterinary Higher School within the framework of which the exchange of academic staff, undergraduate and master students take place and joint training courses and seminars are organised;

2. Between universities of Nordic and Baltic countries where master students have opportunities to extend their qualification by attending continuing educational courses (NOVA-BA postgraduate research course).
 3. TEMPUS PHARE project on “Improvement of higher education in veterinary medicine in Latvia” in the period of 1998 – 2001. Co-operation partners were those of Hannover Veterinary Higher School and Faculty of Veterinary Medicine of Helsinki University;
 4. SOCRATES/ERASMUS programme;
 5. Co-operation programme between Norway and Latvia that resulted in establishing a food hygiene laboratory which will serve as research basis for master students;
 6. The cooperative programme “Farm animal reproduction: Reducing infectious diseases and conserving local genetic resources” between Estonian Agricultural University (EAU), Tartu, The Lithuanian Veterinary Academy of Lithuania, Kaunas, Latvia University of Agriculture, Jelgava, and the Centre for Reproductive Biology in Uppsala, Swedish University of Agricultural Sciences. The co-operation is financially supported by “*Nya Visbyprogrammet*” at the Swedish Institute, Stockholm.
 7. Within the scope of master study programme “Economics and Agrobusiness” it is possible to attend and complete different courses. After passing examinations students receive certificates.
- Till now master students of the FVM have undergone professional training at the Swedish University of Agricultural Sciences in Uppsala, The Danish Royal Veterinary Academy, the Lithuanian Veterinary Academy, Hungarian Higher School of Veterinary Medicine in Budapest, Nord-Rein Westfal State in Germany, Hannover Veterinary Higher school, Michigan State University in the USA.
 - The number of credit points (CP) required to complete the degree is 80. One credit unit refers to an input of 16 hours or one week of academic work (lectures etc.) or 2 weeks of practical work. Out of them theoretic course makes 40 – 50 CP, practice – 5 – 15 CP and presentation of master thesis – 20 – 25 CP. At the end of subjects, master students pass examinations or tests.
 - Master study courses comply with the requirements of Master’s degree. A supervisor can be an academic staff with doctor’s degree in appropriate branch, in some

exceptional cases it can be an experienced and competent person in pedagogic and research work holding a Master's degree in appropriate branch of science.

- Obligatory and optional study subjects is decided by the LUA Board of Studies and approved by the LUA Senate, but obligatory subjects of the speciality are decided by the Methodological Committee of the FVM and approved by the Council of the FVM. According to the proposals of the supervisor, master student selects subjects for the total programme and indicates all the elective and specific subjects, practical and pedagogic training. Master programme is approved at the meeting of the academic personnel of the appropriate Institute. Pedagogic practical training is carried out under the guidance of the master student supervisor or another academic staff member. It comprises preparing and holding laboratory and practical workshops, consultations or elaboration of course papers, and lectures.
- Practical training (20 weeks) ensures development and extension of professional competence and experience in the field of the chosen branch of specialisation. Practical training abroad has a priority.
- Master programme ends in master's thesis, where master student presents a summary on his/her results of scientific research work. Master's thesis can be either theoretical or practical investigation and its goal is to show the applicant's abilities in creative application of science methodology accomplishing certain tasks. The student is working at the master thesis during the whole period of studies apart from the acquisition of theoretic knowledge. At the end of the course Master's thesis is presented in the presence of the Master examination committee.
- The first master students at the FVM were admitted in 1993. During the further years from 1993 to 2002 127 master students were enrolled. 41 (30%) of them were expelled from the master studies. As the most often reason was failure to succeed in completing curriculum and subject programmes and not resuming studies after academic leave. 32 (35%) master students have succeeded in presenting thesis.
- In the year 2001 the state accreditation committee accepted the master study programme until 2003 December 31.

3. SUGGESTIONS

Starting from the academic year 2001/2002, undergraduate studies in veterinary medicine are extended from 5 to 6 years. In this connection it is planned in the academic year 2003/2004 to

transfer to a part time professional master course with two study programmes: Veterinary medicine and Food hygiene. The length of studies will be 1.5 years (40 CP). On successful completion of the course and defending the master thesis, the professional master degree will be awarded giving rights to continue education in doctoral studies. It will also be possible to take a doctoral course just after graduating from the faculty without master studies as intermediate stage.

Table 12.3.2. Postgraduate research training programmes (PhD level) 1999 – 2001

(b) PhD level Discipline and department	Duration of training	Number enrolled	
		Full time	Part time
Obligatory part: 20 credits			
1. Science subbranch	8 credits		
• Physiology – Preclinical Institute LU Experimental Medical Institute Latvian Medical Academy		2	1
• Internal diseases – Clinical Institute • Parasitology – Institute of Food and Environmental Hygiene State Veterinary Diagnostic Centre		3	
• Infectious diseases and microbiology – Institute of Food and Environmental Hygiene State Veterinary Diagnostic Centre		6	3
A.Kirhenšteins Institute of Microbiology and Virology			
• Surgery – Clinical Institute Latvian Medical Academy		1	
• Obstetrics and gynaecology – Clinical Institute LUA Research Centre “Sigrā” Latvian Medical Academy		5	
2. Research methodology	4 credits		
2.1. General course – Faculty of Information Technology	2 credits	17	4
2.2. Special course – Faculty of Veterinary Medicine State Veterinary Diagnostic Centre Latvian Medical Academy	2 credits	17	4
3. Special course of a foreign language – LUA Faculty of Social Sciences Department of Languages	4 credits	17	4
4. Theoretical course in the field of research – relevant institute of the Faculty of Veterinary Medicine	4 credits	17	4
	20 credits		
Optional part	14 – 17 credits	17	4
• Scientific publications – In reviewed international publications Accepted by the LCS 1 publication - 2 credits			

(b) PhD level Discipline and department	Duration of training	Number enrolled	
		Full time	Part time
(minimum number of publications – 5)	10 credits		
<ul style="list-style-type: none"> • Report at the international conference about the research theme – 2 credits (minimum number – 2) • Doctoral study courses abroad or at any of Latvian higher schools 	2 x 2 = 4 credits	17	4
	3 credits	3	
Elaboration of promotion work and its design 110 – 107 credits	17 credits		

For (b):

- (i) Whether the students require a grant or salary

For the government–funded doctoral students the acquisition of all the above mentioned disciplines are for free. For private funded students the tuition fee is determined Ls 200 per year.

A small number of most successful doctoral research projects receives a grant of the Latvian Council of Science. The distribution is the following:

Grants from the Latvian Council of Sciences (per academic year) is Ls 1425 including

- a grant for the student Ls 504 (Ls 42 per month)
- a grant for the supervisor Ls 180 (Ls 15 per month)
- social taxes Ls 178
- infrastructure Ls 50
- other expenses Ls 513

- (ii) The proportion of graduates who enter such a programme –

on average 5.4% of the number of undergraduate students of the FVM.

2. COMMENTS

During the period of time from 1999 to 2001 21 students entered the FVM doctoral study programme, i.e. about 5.4% of the total number of students. (LUA Study Data – 1999/2000 academic year. 5th edition, Jelgava 2000).

The real situation is as follows: 40% of doctoral students drop out the programme or take the academic leave repeatedly. 60% of them complete the course.

Due to the transfer to one–stage promotion (defence of thesis) system and stricter demands of promotion in Latvia, during the last 5 years none of the FVM doctoral students have defended their promotion work. In 2003 there are envisaged 3 promotions, in 2004 – 2 – 3 works.

3. SUGGESTIONS

- Develop the Faculty of Veterinary Medicine LUA as the main science (research) centre of veterinary medicine in Latvia where a high level research work would merge with a high standard of doctoral, academic and professional studies in veterinary medicine.
- Develop international centres of doctoral studies in veterinary medicine in the Baltic States in the most suitable sub-branch (-es) of each country by developing a corresponding material, technical and personnel basis.
- Internationalise doctoral studies envisaging the student funding that provides the necessary duration of continuous education course abroad once per the period of doctoral studies in accordance with the speciality.
- Extend the length of doctoral sciences till 4 years.

Chapter 13 - RESEARCH

1. FACTUAL INFORMATION

During the courses of studies every student has possibilities to be involved in deeper investigation of different themes in veterinary medicine. Trends and subjects of research depend on the interests and wishes of students themselves as well as the possibilities which can be ensured by the academic staff qualification and the material technical basis of the institutions.

The most often research themes of students are diseases and problems associated with them students have been acquainted with during the practical training at the FVM and in the place of practice. During the practice under supervision of a practitioner students obtain practical skills by examining, treating the experimental animal (object) and performing preventive measures, but under the guidance of the academic staff they analyse theoretically the particular case creating a general conception.

Students are also involved in the research performed by the academic staff within the framework of the grant themes (projects). Students participate in experiments, get familiar with the nature of research and pay more attention to the applied objects and methods by analysing them.

An essential role in the choice of the trend of research plays the academic staff who have good contacts with students, are able to arise interest in science and stimulate them.

In every academic year the Rector of the LUA announces about the organisation of the student scientific conference and ensures a bonus for the authors of the best reports. The best student research works are selected for the student scientific conferences at the scale of the LUA according to the sections held yearly in April – May.

Every year about 26 – 28 students are involved in the student scientific work, i.e. 11.4% of the number of undergraduate students.

First year students participate mainly in morphology sciences (on average 5 students every year) increasing the museum of anatomy by skeletons of sylvatic animals found in Latvia forests.

Second year students (on average 2-3 students) are involved in research of the science branch of physiology participating in the experiments of the grant projects 96 – 0075 “Dynamics of physiological and pathophysiological processes in the gastro-hepato-duodenal system in young farm animals determined by feeding standards” (1997-2000) and 01-0771 “Adaptation mechanism of digestive process in calves during the transition period from prerumination to ruminant status” (2001-2004).

As to the sciences, students are interested in the changes of metabolic processes in productive animals, pathologies in small animals as well as surgical problems.

In the science branch of obstetrics and gynaecology students are mainly involved in research project 96-0077 “Disturbances of fertility, early death of embryos and causes of abortions and mechanisms of pathogenesis in productive animals” (1997-2000) and “Importance of antibacterial factors of humoral immunity for udder protection and etiopathogenesis of mastitis” (2001-2004). In research of clinical disciplines 10-12 students on average are involved per year.

Students are interested in food hygiene and problems of epidemiology of infectious diseases. In such a kind of investigation students participate in the framework of the scientific project 01.0770 “Epidemiology and control of productive animal and foodborn infections in the Republic of Latvia” as well as in the co-operative projects 02.0015.4 ”Health problems in different periods of ontogenesis in farm animals and their projection to the obtained production” and “Hazard factors, their assessment and management in the agriculture of Latvia”.

The University provides possibilities to publish abstracts of the student scientific conferences, which our students are willing to accept. Abstracts should be prepared in compliance with the requirements of the scientific abstracts enabling to acquire skills in this kind of work, and of course, students are very satisfied about their first publication.

At the end of the year the Rector announces a competition for the best designed student scientific work per year. The submitted works for the competition in the branch of veterinary medicine are assessed by a jury committee approved by the Dean of the faculty which includes representatives of each institute. Three best authors have a possibility to receive bonus.

From 1999 to 2002 the FVM students have prepared the following number of reports:

1999 – 12,

2000 – 7,

2001 – 12,

2002 – 5 reports.

Student scientific research is impossible to be carried out without assistance of the State veterinary organisations and private institutions. A substantial contribution in performing various examinations has given the State Veterinary Diagnostic Centre together with regional laboratories, the State Food and Veterinary Service, the leading private veterinary clinics and large-scale merchants of medicines etc.

2. COMMENTS

Positive evaluation

- The students being actively involved in research work obtain the methodology of scientific investigation enabling them to prepare course papers;
- Learn to work with scientific literature analysing data critically;
- Participation in research activities promotes to obtain the processing methods of data and to state the obtained results clearly;
- Stimulates students to improve their skills to present their reports in public and express their opinion logically;
- Enables students to acquire the corresponding discipline of veterinary medicine in the field of research;
- Helps to choose the field of further research in master and doctoral studies after completing the 6-year study programme.

3. SUGGESTIONS

Stimulus to be involved in the scientific work would be more pronounced if:

- We had opportunities to receive a certain amount of financing for the time engaged in research;
- Students (also academic staff) had better foreign language proficiency ;
- The FVM continues to improve the material technical basis and infrastructure in all.

Priority research directions in veterinary medicine in Latvia are the following:

- Development of scientific system of veterinary medicine for high-quality and healthy animal production;
- Development and introduction of up-to-date diagnostic and treatment methods of most dangerous contagious diseases in Latvia;
- Prevention of disturbances caused by animal non-infectious diseases;
- Within the framework of these priorities in 1999-2002 the Latvian Council of Science (LCS) finances the following scientific projects (grants):

In the Preclinical Institute

- Dynamics of physiological and pathophysiological processes in the gastro-hepato-duodenal system in young animals in association with declinations of nutrition (1996 – 2000);
- Adaptation mechanism of digestive process in calves during the transmission period from prerumination to rumination (2001 – 2004).

In the Clinical Institute

- Disturbances of fertility, early death of embryos and causes of abortions and mechanisms of pathogeneses in productive animals (1996-2000);

- Importance of antibacterial factors of humoral immunity for udder protection and etiopathogenesis of mastitis (2001-2004).

In the recent 5 years in the Preclinical and Clinical Institutes a new research direction in Latvia has been developed which is not funded by the LCS, but within the framework of which several promotion works are being performed –

- Investigation of mechanism of pathological genesis of small animal diseases, their diagnostics, treatment and prevention.

In the Institute of Food and Environmental Hygiene

- The LCS finances the project 01.0770 Epidemiology and control of productive animals and foodborn infections (2001 –2004).

Besides the LCS funded projects, the Institute of Food and Environmental Hygiene was involved in other projects:

- FAO international project TPC/RER/0065(A)Improved meat production in the Baltic region based on the epidemiological control of trichinellosis - a parasitic zoonosis (1998 – 2001);
- Grant theme of the Ministry of Agriculture 18/01 Programmes for salmonella control and elimination in production of animal origin (2001);
- Grant theme of the Ministry of Agriculture 17/01 Fulfilment of the national strategy plan about prevention and control of foot and mouth disease in compliance with the EU requirements (2001);
- Grant theme of the Ministry of Agriculture 16/01 Development of regulations of veterinary inspection for fishing and aquaculture products (2001).

In the FVM Research Institute (Research Centre “Sigrā”):

Funded by LCS:

- Research programme of the state significance 96.P.13 Scientific grounds for development of agriculture in Latvia with its subprogramme 96.P.13.2 Non-polluted and high quality food: criteria of quality and competitiveness (1996 – 2000);

- Co-operation project – Investigation of regularity of plant conversion and animal biotechnological processes for production of high quality foodstuffs (2002 – 2005);

Research projects:

- 96.0097 Etiopathogenetic assessment of non-contagious and contagious diseases in farm animals, development of prevention and means of treatment (1997 – 2000);
- 96.0098 Development of scientifically well-grounded measures and means for preventions of metabolic and digestive function disturbances in domestic animals (1997 – 2000);
- 01.0112 Effect of destructive etiopathogenetical processes on animal physiological processes and production (2001 – 2004);
- 01.0113 Etiopathogenesis of cow mastitis caused by the association of prevailing opportunistic micro-organisms and development of scientifically well-grounded amboceptors and prevention.

Financed by the Ministry of Education and science:

- TPP 00 – 04 Development of non-polluted means and approbation for prevention and treatment of endometritis in cows;
- TPP 00 – 48 Investigation of microbiological and biochemical changes in meat and meat products for human consumption and assessment of its biological value.

Financed by the Ministry of Agriculture:

- MA 200 – 19 Basic principles of investigation of hazard in international trade of live animals;
- MA 2001 – 18(7) Investigation of hazard in international trade of live animals;
- MA 2001 – 22 (6) Development of regulation of farm animal health protection (infectious diseases) in compliance with the regulations of the World Organisation of Animal Health (OIE) and EU requirements: development of epizootology, pathogenesis, differential diagnosis and preventive measures of bovine spongiform encephalopathy.

Abbreviations

ALT – alaninaminotranspherase

ASL – aspartataminotranspherase

EAEVE – European Association of Establishments of Veterinary Education

EC – European Community

EEC – European Economic Community

EHEC – entero-hemorrhagical Escherichia coli

ETEC – entero-toxic Escherichia coli

EU – European Union

FVM – Faculty of Veterinary Medicine

LUA –Latvia University of Agriculture

MC – Mobile Clinic

NOVA-BOVA – Nordic-Baltic network in Agricultural, Forestry and Veterinary sciences

OIE – World organisation of animal health

PCV – packet cells volume

RL – Republic of Latvia