

# European Association of Establishments for Veterinary Education

and the **Federation of Veterinarians of Europe**  
**European System of Evaluation of Veterinary Training**

## **REPORT ON THE VISIT TO THE FACULTY OF VETERINARY MEDICINE OF HELSINKI 19-23 October 2009**

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*This report comprises largely information obtained during the site visit with the SER having been the document of reference. The SER should therefore be available to the reader of this document.*

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## **INTRODUCTION**

The Faculty of Veterinary Medicine, University of Helsinki, is the only institution providing veterinary education in Finland. The last evaluation visit of the Faculty in question by the EAEVE was carried out in February 1999. Since then, the Faculty has undergone major changes and was subject to several evaluations, both on a national and international level. Some new professorships and lectureships in previously critical areas were filled and the role of graduate schools at the University of Helsinki and in academia on the national level, in general, has grown as did the Faculty's scientific postgraduate education. The move to new, modern facilities at the Viikki Bioscience Campus has been a most noteworthy improvement. The internal organisation of the Faculty has also changed, especially by forming 4 departments and one Animal Teaching Hospital. The curriculum has been further developed according to both the Bologna Process and to the Faculty's own needs. In the very near future (1.1.2010), however, a governmental University Reform Act will be causing further rapid and extensive changes affecting the administration and the organization structure of the whole university. The universities will operate more independently of the government budget and will be free of direct steering by the State; nevertheless, the core duties of the universities, that are research and teaching, will remain largely unchanged.

Several national and international evaluations on different levels were carried out at the University of Helsinki including its veterinary faculty during the past decade. In specific, a university-wide audit of the Quality Assurance Systems by the Finnish Higher Education Evaluation Council, using an international expert group, was performed in 2007. This unique instrument of a governmental quality insurance system monitors and aims at improving quality of teaching, research and academic services on all levels; evidently, this is the main reason for allowing the EAEVE for the first time to use the instrument of a stage II evaluation.

The following major changes took place in recent years and/or are still in the process of shaping developments on the university and faculty level:

### **New regulations relating to teaching**

- New EU Directive (2005/36/EC).
- The three-year strategic plan of the University, implemented through policy programmes and corresponding to a budget period of the same length (Programme for the Development of Teaching and Studies).
- Regulations associated with the Bologna Process.

### **Major changes in Finnish universities**

- New salary system, including personal work performance assessments introduced in 2006, affecting all employees (academic and support staff)
- Universities Reform Act (ongoing). Universities will begin their activities under the new law on 1 January 2010.

This University Reform will cause organisational changes in the administration and management of the Faculty. The goal is to organise teaching, research and administration so that the structures support quality enhancement as well as target oriented use of resources. This includes the rearrangement of several major processes within the Faculty, including the transition from departments to divisions (bigger units with more centralized power structure).

The importance is emphasized, however, to preserve a genuine tripartite representation in the new organization. The Reform is progressing rapidly and the faculty feels that some uncertainties about

the future may even act as an opportunity to strengthen the Faculty's core functions. However, ensuring that the Faculty's budget is sufficient and establishing supplementary financing is deemed very important, especially in the context of the increased number of students admitted (see below).

#### **Main organisational changes accomplished**

- Division of the Department of Clinical Veterinary Sciences into two departments in 2007: the Department of Equine and Small Animal Medicine (at the Viikki Campus) and the Department of Production Animal Medicine (at the Saari Campus).
- Veterinary Teaching Hospital (small animal & equine) became an independent unit within the Faculty in 2007.
- Decision on the abolition of departments of the Faculty made in 2009; plans are currently underway for reorganization of the structure (divisions will to a certain extent replace the former departments, the Teaching Hospital as unit will remain unchanged).

#### **New buildings or major equipment**

- Move to the Viikki Campus brought the administration, departments and the Veterinary Teaching Hospital to an appropriate environment suitable for their needs and activities.
- Administration of the Faculty, Department of Basic Veterinary Sciences and Department of Food and Environmental Hygiene in 2004
- Department of Clinical Veterinary Sciences and Veterinary Teaching Hospital created in 2006
- Departments and the Hospital also received considerable financial support for the acquisition of new equipment.

#### **Main changes to the study programme**

- Development of the curriculum: from small separate courses towards larger modules (gradual development since 2000, main steps: first 3 year's "Healthy Animal Concept" in 2002, fourth year's "Clinical Modules" in 2006, teaching of "production animal Medicine" separated from "small animals and horses" in 2006).
- Move to the two-tier degree system associated with the Bologna Process in 2005, creating of the Bachelor's degree and Licentiate's degree (Master's degree) in accordance to the University's guidelines (e.g. move from study weeks to ECTS, greater emphasis on generic skills and science).

#### **Important decisions made by the management of the Faculty or by the authorities responsible for it**

- Annual student intake has increased to 70 (previously 50-55) since 2008.

## 1. OBJECTIVES & STRATEGY

### 1.1 Findings:

Objective of the faculty is to sustain and develop education and research of internationally high standard in veterinary medicine taking changes within the discipline and the society into consideration. Objectives & strategies are well formulated, developed and monitored on several levels by different decision making bodies; above all, the Faculty Council, chaired by the dean (see organization). Objectives of university operations, in general, are guided by the Universities Act, the development plan for education and research adopted by the Government and by the Government resolution on the structural development of the public research system (A new Universities Act will become effective on January 1, 2010). Specific objectives are defined on the basis of a performance agreement between the Ministry of Education, the parliament and the University; these agreements are reviewed every 3 years. The validity of the agreement runs parallel to and has implications on the allocated university budget.

Overall objectives and goals comprise:

- Research and research-based teaching;
- Focus on the whole chain of food production, “from farm to table”, as well as on the high-standard treatment of individual animals
- Environmental hygiene as an integral part of the national veterinary public health concept.
- Fulfillment of the EU requirements for veterinary training (EU Directive 2005/36/EC).
- Fulfillment of the Bologna declaration for harmonization of curricula and academic degrees
- High quality post graduate formation, specialization and continuing education (life-long learning concept)
- Internationalization on all levels and increased mobility

### 1.2 Comments

In teaching, areas where objectives have largely been achieved or even surpassed are in disciplines such as “food and environmental hygiene” and in clinics where the concept of “hands-on” learning in small groups (8-10 students) under supervision is practiced. Although the curriculum is of a full 6 year length, periodic content overload seems to be an issue. In 2005, a two-tier degree system was introduced leading to a Bachelor’s degree after 3 years (180 ECTS) and after additional 3 years and another 180 ECTS to a Veterinarian degree (Licentiate’s degree according to Finnish terminology, a Master’s degree according to the Bologna definition) – allowing to fully practicing the profession. Each degree requires completion of a thesis. A unique national feature is, that at the completion of the fifth year, students receive a provisional license, valid for up to 3 years. This board-registered license authorizes such trainees to perform, in pure autonomy, all veterinary duties including treatments, meat inspection, issuing of certifications etc. Many students take advantage of this and work part time during the sixth study year. Few students don’t finish their licentiate theses on time and won’t graduate on time.

Some areas need either further development, or the objectives have not been fully achieved:

- The increase of student admissions from about 50 to now 70 poses challenges on different levels (number of teaching staff, finances, premises, teaching materials – animals, equipments); the reason for the increase is a governmental recommendation based on the current relative lack of practicing veterinarians in Finland. During the visit, the opinion was repeatedly voiced, however, that increasing the number of graduates (presently by approx. 10) may not resolve this problem of relative shortage of veterinarians. The fact is, that the majority of graduates seek work in small animal practices in urban areas, whereas rural

practices dealing with food producing animals remain progressively understaffed. One explanation for this trend is the high percentage of female graduates. The Faculty has looked into the reasons why so few men applying to the Faculty of Veterinary Medicine. The study was based on a survey carried out among matriculation examination candidates, and its results prompted the Faculty to enhance its communication about studies and the versatility of the veterinary profession.

- The periodic overload of students and teachers, as well as the issue of multitask obligations of teachers: research-teaching-clinical duties.
- Uncertainty when students shall initiate elective specialization tracks, without compromising acquisition of full day-1 skills (discussions over definitions of those skills is underway within the faculty – see “Academic Planning Committee”)
- Internationalization and academic mobility is still underdeveloped; the language barrier is one of the reasons and the Faculty, conscious of the fact, is actively promoting English as third teaching language (after Swedish) and is trying to recruit foreign faculty as well as enhancing the exchange with partner universities, especially in the frame of the Erasmus programme.
- Relative lack of qualified faculty supervisors in specialization programmes such as European College residencies. Those programmes do not find government funding, because neither concept nor title of European College Specialisation is officially recognized in Finland.
- A peculiarity of the Finnish veterinary legislation is that every municipality has to employ a “municipal veterinarian” (with public funds): covering basic salary and facilities; municipal veterinarians also charges clients There are hundreds of such community posts in Finland, and apparently, this is one of the reasons for a healthy employment market for new graduates. The system may, however, cause some unfair competition, we were told, in areas where municipal veterinarians (who have the right to practice privately using premises and equipment of the municipality) compete with private practitioners.

### **1.3 Suggestions**

Long-term planning in terms of finances, premises, equipment and availability of teaching animals has to take into consideration the progressive increase in student numbers.

Students should get thoroughly coached upon admission as to the reality of the labor market, stressing specifically the need for working in rural practices and specialization in food animal medicine and production. (see also “Curriculum” suggestion to increase emphasis on food animal medicine & production teaching)

International exchange programmes should be enhanced wherever possible; in the ERASMUS programme it is mandatory that students returning from abroad receive at home full recognition of the credits earned.

In the career path of clinicians, the administration shall fully recognize for promotions in some areas the heavy load of clinical duties, accepting that successful clinical teachers may have less time and opportunity to produce research output, as compared to non-clinicians. In that context, monitor the teaching responsibilities of PhD students which should not be disproportionate to the research tasks.

Specialisation: in the long run, it is suggested to phase out the national specialization programme as it is on one hand too broad to be considered a real specialization (e.g. “specialist in small animals”) and on the other hand, few possibilities for this type of training are presently offered. It is strongly suggested, that the European Specialisation concept finds a considerably wider use and acceptance.

The faculty should actively employ every means possible in order to achieve recognition of the European Specialist title in Finland and to promote Residency training programmes wherever possible. In the meantime, residency positions in some areas may be created by outside funding (research funds, industry).

We recommend to significantly shorten the period of validity of the temporary student license (at least by 50%). Although we recognize the positive impact of such practical graduate training, we believe that formal supervision by graduated veterinarians should be required for invasive treatments, meat inspection and for issuing veterinary certificates.

## **2. ORGANISATION**

### **2.1 Findings**

The Faculty of Veterinary Medicine is a part of the University of Helsinki. The University of Helsinki is the largest University in Finland, with 38 000 students and 11 faculties in four campuses. The University of Helsinki has a tripartite organisational structure consisting of (1) the University level, (2) faculties and independent institutes and (3) departments and other units in faculties. The operating units of each organisational level have bodies and directors responsible for decision-making, as required in legislation and internal regulations, as well as an administrative organisation involved in decision-making.

The main part of the Faculty of Veterinary Medicine is located at the Viikki campus, a few kilometers from the center of Helsinki, the capital of Finland. The Viikki Campus is an internationally recognised centre for life sciences. The growing campus is a multidisciplinary science community of over 6 500 students and 1 800 staff members. The Faculty of Veterinary Medicine moved to Viikki between 2004 and 2006. The Faculty of Veterinary Medicine is the only institution in Finland offering degrees in veterinary medicine. The faculty is quite small, with about 500 students (Bachelor, DVM, PhD and specialist - national and European - degree students) and approximately 300 staff members (PhD students, residents and interns may have a dual function and occasionally be considered staff on one hand and student on the other).

The basic degree in veterinary medicine is the Licentiate in Veterinary Medicine. This degree requires completion of 360 ECTS and should take 6 years to complete. Approximately 50 Licentiates in Veterinary Medicine graduate yearly.

There is a lack of veterinarians in Finland and that is why an increase in student admissions has been implemented. Since last year (2008) the number has been raised to 70. Veterinary studies are quite popular with over 600 applicants each year; that is, slightly more than 10% of applicants are admitted.. Half of the new students are selected on the basis of the sum total of initial scores and points earned in the entrance examination, while the other half is selected solely on the basis of points earned in the entrance examination.

The faculty consists of four departments (structure maintained until the end of 2009)

- Department of Basic Veterinary Sciences
- Department of Equine and Small Animal Medicine
- Department of Food and Environmental Hygiene
- Department of Production Animal Medicine

- and the Veterinary Teaching Hospital.

The Veterinary Teaching Hospital comprises the Small Animal and Equine Hospitals (including all diagnostic facilities) located at the Viikki campus, and the Production Animal Hospital in Mäntsälä (Saari Campus).

The Faculty Council which is headed by the dean and consists of representatives of academic and non-academic staff as well as students is the faculty's ultimate decision making body. It is responsible for developing teaching and research, decisions on admission criteria, degree requirements as well as for making decisions on degree requirements, admission criteria for new students, personnel appointments and the like. Each department has a departmental steering group which is the highest decision-making body in the department, run by a head of department. The departmental steering group is responsible for assessing and developing teaching and research activities in the department and its activities, making proposals to the Faculty Council for plans concerning operations, finances and staff, deciding on the use of unallocated funds as well as presenting the Faculty Council.

These decision making bodies are supplemented by a number of committees operating in the faculty the function of which is to process and prepare issues in their own specific field for the Faculty Board.

## **2.2 Comments**

The organizational structure of the faculty appeared sound; students are involved and represented in most decision making bodies. Nevertheless, significant changes to the structure will occur with the enactment of a new university law on 1.1.2010 (departments will be merged into larger organisational structures); the impact of these imminent changes could not be analyzed and, in any case, is beyond the scope of this report.

The department structure with the teaching hospital in Viikki is designed and functions according to international standards. The teaching farm has a unique set-up: the faculty is tenant on premises belonging to an agricultural college. The interactions between the two occupants appear to be flawless, complementary and beneficial for the teaching environment.

Unusual but adequate is the teaching of small animal reproduction on the farm,

The distance to the main campus (65 km) seems to generate a not further defined "feeling of disconnection" by some of the faculty members.

## **2.3 Suggestions**

Reproduction teaching should be restructured, taking full advantage of the patient case load, the modern equipment and the premises of the Viikki campus.

Specific attention should be paid to the continued full integration of the teaching units at the farm on all levels. Maintaining or enhancing corporate identity of some personnel at the farm should be promoted.

# **3. FINANCES**

## **3.1 Findings**

There are no tuition fees in Finland, studying is free of charge. Most students pay only a small membership fee to the student union.

The Faculty's budget, once allocated, is largely controlled by the Faculty–Board and by the Departmental Steering Groups. The degree of financial autonomy appears adequate.

The Faculty's **core funding** is calculated using the University's budgeting model in which funding is balanced, based on the previous year's net funding, which accounts for 70% and on performance-based funding accounting for the remainder of 30%. When assessing performance, the number of Master's degrees (that is graduates) carries a weight of 50%, the number of licentiate and doctoral degrees 15% and research output 35%. Performance is compared to that of other faculties; in order to get additional funding, the faculty must raise its performance proportionally. Research output is assessed every six years. Veterinary medicine receives more funding for its undergraduate programme than most other disciplines. The weighing coefficients of different disciplines range from 1 to 3.5, with veterinary medicine having the highest possible coefficient of 3.5. In addition, the Ministry of Education presently subsidizes the Veterinary Teaching Hospital with additional €2.15 million a year (the fairly new Hospital is at the present not self-sustaining – the goal is balancing revenues and expenses). It is roughly calculated that the total cost of undergraduate formation is €140.000 to €160.000 per student.

This core funding, negotiated by the dean with government and rector every year 3 years, with annual check-up is allocated to the Departments and distributed after deduction of facilities expenses (e.g. rental fees for premises occupied) by the following criteria: 80% is distributed in proportion to payroll budgets and 20% based on performance. Performance is assessed using the three-year averages of doctoral degrees, completed in each department (weight of 50%), veterinarians studying for a (national) specialist's degree (15%), B1 category publications (international peer-reviewed journal articles other than in Finnish)(20%) and the impact factor of publications (15%). Rental fee policy: due to the progressive privatization process of the universities, a rental fee calculated on the surface and the use of the facilities is being levied. For instance, the highest rental fee per square meter is being charged for the surgery suites in the Teaching Hospital.

For large equipment purchases, building projects and others, the dean may discuss funding plans directly with the rector. Smaller equipment may be purchased using hospital income (however, the hospital's overall balance is presently negative, with some services being more profitable than others: as an example, small animal surgery versus equine surgery). All equipment is acquired with maintenance contracts.

**Overhead policy:** The University administration collected 5% of paid services income and research funding as overheads in 2006–2007. In 2008, the Rector's share of research funding rose to 7%. The additional 2% are used to provide financial administration services for research projects. The overall share of paid services remained at 5%. The Department's share of overhead has been 8-10%, estimating the total overhead charged to external funding to be 15%. Exceptions to this include teaching activities as well as grants under €10,000.

**Salary structure:** a new salary scheme was introduced at the beginning of 2008; the basic pay depends on the complexity of duties, and is supplemented by an individual component determined on the basis of a performance assessment. This applies on all levels of employment, academic and non.

The individual pay component amounts at the most to 48% of the job-specific pay component. For both basic and performance component, universities use two different salary systems, one for teaching and research staff and one for support staff.

### 3.2 Comments

The overall financial situation is at present satisfactory, given the major capital investment of recent years, providing excellent premises and facilities everywhere on the Viikki Campus, and up-to-date equipment in nearly every area. The Teaching Hospital is, however, operating with a loss, which is presently compensated for by designated university funds. Teaching staff is sufficient in most areas, although the teaching load in clinics, often shared by PhD students, is periodically very heavy, however, without compromising quality. In the following areas, understaffing is or creates a problem in teaching as well as in providing services and research output: anesthesia, medical imaging, clinical pathology, clinical nutrition and poultry medicine.

In general, research funding is strongly emphasized and the combination of in-house and outside funding of most quality research projects is satisfactory.

The governmental subsidy of teaching is calculated on the number basis of graduating students (and not based on admission counts); the Faculty has been asked to increase the average number of graduates from 50 to 60, demanding an admission increase from 50 to 70 which was effectuated last year for the first time. However, the somewhat modest projected budget increase of approx. 4 % out of the total budget is not proportional to this increase in numbers of admitted students (approx. 30 %). It can be projected with confidence, that the presently high standards of teaching in several areas will significantly suffer if the budget is not proportionally increased. At least a 10 % of increase over time seems a reasonable request. If teaching staff will not be increased overall and progressively, the increased teaching load, necessary to maintain quality, will inevitably risk decreasing research output.

The Teaching Hospital is well staffed with technical personnel (54); nevertheless, the Hospital cannot rely sufficiently and at all times on its technical staff, as, on average, a disproportional number of employees are frequently incapacitated.

### 3.3. Suggestions

- Increase of the overall budget by 10% over a short time, to accommodate increasing student numbers.
- Further efforts to render the Teaching Hospital budget equilibrated by identifying and counseling areas of relative imbalance between expenses and revenues, without compromising quality of service and teaching.
- Creation of professorships and/or recruitment of qualified teaching staff in
  - Anesthesia
  - Poultry medicine
  - Clinical nutrition
  - Clinical pathology
  - Medical imaging (only junior teaching staff)
- Creating and financing of residency positions also by outside funding
- Attracting European specialists in all respective disciplines by means of financial and/or career bonuses for resident training.

- Evaluating means and measures to enhance corporate identity among technical support staff as well as trying to identify and eliminate reasons for incapacitation of employees, beyond those explainable by qualified reasons.

## 4. CURRICULUM

### 4.1. General Aspects

#### 4.1.1 Findings

The teaching at the Veterinary Faculty of the University of Helsinki (VFH) is increasingly research based teaching and learning introducing the veterinary students to scientific thinking and methods.

The curriculum is tailored to and follows the applicable EU-directives, the national government directives and legislations and the Guidelines set by the Bologna Process. Despite all these given governing factors from outside, the Faculty perceives it as having a fair influence on this curriculum model. The ECT-system is fully implemented as is the 3 step degree curriculum (Bachelor, Master and the postgraduate PhD).

The complete curriculum comprises a 3 years bachelor study (Bachelor of Veterinary Science) and a 3 years Licentiate study (Masters degree). This curriculum leads to omnipotent veterinarians, and results in official certification by the licensing authorities of Finland.

Teaching is divided into theoretical training (lectures and seminars), self directed learning, supervised practical training (lab-desk top work including the proper use of microscopes), non-clinical practical work on normal animals and strictly hands-on clinical work on animals in a clinical environment. Self directed learning may be used for the students as preparation for both group work and examinations. Attendance at formal class-room lectures is voluntary, whereas participation in all other (practical) teaching activities is mandatory and subject to efficient controls.

Extramural teaching comprises Farm Practice 162 hours, Slaughterhouse practice and meat inspection (160 hours and Health Protection Practice 80 hours). These sums up to 402 hours, corresponding to approximately 15 ECTS.

#### 4.1.2 Comments

The Six year curriculum fulfills at large the EU directive of a minimum of 5 years; each year corresponding to 60 ECTS, (each ECTS corresponds to 27 student activity hours). The total student hours are thus 9720 hours (360 ECTS).

7596 of these hours cover EU-listed subjects. The remaining hours (2124 hours, corresponding to approximately 79 ECTS) comprise:

Electives during the **bachelor study programme** (7 ECTS), Bachelor portfolio (2 ECTS), Language studies (10 ECTS), Information and communication learning (5 ECTS), Veterinary Ethics and Animal welfare (3 ECTS) Introduction to scientific work (2 ECTS) and Bachelor thesis (6 ECTS), summing up to a total of non-EU listed subjects at the bachelor curriculum: 35 ECTS

In the **licentiate study programme**, electives account for 6 or 11 ECTS depending on the licentiate thesis which may comprise either 25 or 20 ECTS. Furthermore the Licentiate portfolio amounts to 1 ECTS. The total of non-EU listed subjects at the licentiate study programme is 32 ECTS.

The remaining 12 ECTS mainly stem from professional knowledge courses (101 hours (3,7 ECTS) and environmental hygiene teaching (175 hours (6,5 ECTS)).

Clinical sciences thus amount to approximately 39 % of the 6 year curriculum which is very close to the recommended value of at least 40 % of hours in clinical subjects out of the total hours.

With respect to ratios, the ratio of theoretical to/practical hours = 1/1.44. The inverse ratio is 0.69. EAEVE's recommended range is 0.51 – 0.36. The ratio at VFH is thus well above the average ratio found in other European Faculties.

The ratio of clinical hours to/( practical and clinical work) = 1/0,79. The inverse ratio is 1.27. This is far above the observed range at other Faculties (1.88 – 2.21).

With respect to coordination of related subjects there is an excellent horizontal coordination of anatomy, histology, embryology, biochemistry and physiology in "Healthy Animal" (Basic Sciences). There is also a vertical coordination between basic science and clinical subjects by exchanging both teaching plans and teaching materials.

#### **4.1.3 Suggestions**

The Faculty is suggested to seek better coordination between different subjects

Clinical practicum after completion of the 5<sup>th</sup> year: see comments under 1.2 and suggestions under 1.3.

## **4.2 BASIC SUBJECTS & SCIENCES**

### **4.2.1 Findings**

The hours and subjects in the VFH curriculum cover all subjects mentioned in EU-directive to a satisfactory extent. Physics, chemistry, and biology are however – not included in the bachelor curriculum but the applicant's knowledge is tested at the compulsory entrance examination. Plant biology is dealt with in nutrition with respect to plants of importance for feedstuff and toxic plants.

Physiology, biochemistry, anatomy, histology, and embryology are taught well coordinated; teaching of those subjects is referred to as "Integrated healthy animal concept". The number of hours in each of the individual subjects has been explained satisfactorily by the Faculty. A vertical coordination is obtained by exchanging lecture plans and teaching material between e.g. basic and clinical sciences.

Basic sciences comprise 662 theoretical hours and 345 practical hours leading to a ratio 1/0.52. The number of hours in self directed learning is 1203.

### **4.2.2 Comments**

As indicated, the ratio theoretical versus practical hours favors the former.

The concept of omitting chemistry, biology, and physics from the curriculum is acceptable since the students' basic knowledge in these subjects – as documented by the comprehensive entrance examination – is profound enough for an understanding of biological, physical, and chemical basis of elements in e.g. physiology, biochemistry, and radiology. The omission allows time for the more essential subjects in the veterinary curriculum.

The horizontal coordination of major subjects into one course is recommendable. The "Integrated healthy animal concept" with input from anatomy, histology, embryology, physiology, and

biochemistry is functioning in a satisfactory way according to student evaluations. A vertical coordination is present between basic sciences and clinical sciences as described above.

The content in the concept “self directed learning” varies from discipline to discipline. In some disciplines self directed learning acts as preparation for group discussion and preparation of group presentation of different subjects. In others, self directed learning is simply a synonym for the student’s preparation for examinations.

The dissection hall offers a practicing capacity for 42 students . The teaching facilities at Department of Basic Sciences are generally good in terms of technology but may gradually become too small for the growing number of students.

A group size of 6 students at each dissection and section table is adequate for the student’s ability to perform hands-on practical training in anatomy and pathology.

Fresh carcasses are used for anatomy. Sufficient chilling and freezing capacity is available for carcasses used in anatomy as well as in pathology. Hoists and trolleys are adequate for handling carcasses. There are modern changing facilities for both female and male students. Measures of safety and hygiene are fully implemented.

#### **4.2.3 Suggestions**

The Faculty is suggested to investigate the possibilities for a closer collaboration among the four departments in order to coordinate the content of the disciplines in a more efficient way.

The meaning of the concept “self directed learning” should be more clearly defined. Under certain circumstances, where “curriculum overload” might be felt by faculty and students, allocation of some of the more informal hours of “self directed learning” in favor of supervised training, might be advisable; this would not change the overall load of teaching hours.

The faculty is suggested to investigate possibilities to further increase the percentage of practicals as opposed to theoretical teaching

### **4.3 ANIMAL PRODUCTION**

#### **4.3.1 Findings**

There is relatively low importance given to Animal Production teaching in the curriculum (447/7697 = 5.8% of the overall curriculum hours, see table 4.2.4). However, when including teaching hours in Production Animal Medicine, which comprises additional 553 hours of largely clinical training in the production animal areas, the overall exposure to the field “livestock production” increases: these clinical areas include: Clinical medicine and surgery in production animals (including poultry, etc.) 230 hours, Field veterinary medicine (ambulatory clinics) 227 hours and Preventive medicine (herd health) 96 hours. Therefore, In total, teaching hours in livestock production (Animal Production and Production Animal Medicine) amount to 447 hours + 553 hours = 1000 hours (1000/7697 = 13 % of total time, see also table 4.2.3).

Nevertheless, there remain some relative weak areas or imbalances in Production Animal teaching such as:

1. There is insufficient specific training in Poultry Production. However, poultry production is important in Finland: for instance, the per capita consumption of poultry meat exceeds 16

kg/year. Egg consumption equals the European average of 160 units which corresponds to the presence of more than 3 million hens.

2. Animal Nutrition teaching is underrepresented within the Animal Production curriculum; Animal Reproduction, which is also taught within the “Animal Production” curriculum, takes up additional teaching hours. In evaluating the importance of Animal Nutrition teaching in general, the fact cannot be ignored that nutrition accounts for more than 70% of the overall costs of Animal Production.
3. Formal teaching on small ruminant diseases and production is minimal, although this aspect could be justified by the lack of importance of these species in Finland.
4. Only two hours in the curriculum are dedicated to Agricultural Economics; this is being apparently very little.

Another finding is the incorporation of Animal Reproduction teaching within the subject of Animal Production. We recognise the importance of thorough knowledge in reproduction for animal production, in general; yet animal reproduction should be taught with sufficient emphasis on being a well defined speciality in itself.

The Faculty does not own farm animals for teaching purposes, except one dairy cow and one horse in the Production Animal Hospital. Nevertheless, a dairy herd of approximately 35 lactating cattle, owned by the Keuda Vocational College in Saari, and being housed at the farm can be used for teaching purposes anytime. For teaching small animal reproduction, when needed, teachers or students bring their own animals to be used.

Pig production practices are developed in collaborating farms with an excellent and broad program although the inconvenience of extramural transport is involved.

A mobile clinic is established and functions well. A sufficiently large and well equipped car park (university property) is used to transport staff and students to local farms (approx. 50 km radius), which are under contract with the faculty. Students get sufficient hands-on supervised training in all practical aspects of field medicine, herd management, large animal reproduction and in rural practice-related equine medicine&surgery. The mobile clinic is working year round and even during adverse weather conditions.

The contact with production animals is made through “Non-clinical practical work” which includes teaching sessions where students themselves work on normal animals, on objects, products, carcasses, etc. (e.g. animal husbandry, ante-mortem and post-mortem inspection, food hygiene), and perform dissections or necropsies. Excursions (e.g. to farms, slaughterhouses, processing plants) and extramural training are included in non-clinical practical work. The farm practice is made during 162 hours, meaning a 1.7% of total student work.

There is a four-week farm practice during the second year (two weeks in a cows herd and two weeks in a pig house), which students perform after the course on animal hygiene and animal welfare. During the farm practice, students usually stay on the farm, participate in all activities related to animal care and complete a detailed report which is assessed by a teacher. For several students – particularly city students, this is their first close contact with farm animals, as early as in the second year

The time dedicated strictly to the module “animal production” comprises 447 hours that is 5.8% of total time. The practical time is divided into “Laboratory and desk practice” (5 hours) and “non-clinical practical work” (177 hours). The practical work is 182 hours, a 40.7% of total time devoted to animal production. This results in an imbalance between the time allocated to animal nutrition and animal production, in general, as compared to the by large sufficient time for teaching of Public Health, in general). Hence, without taking into consideration the exposure to livestock animals within the clinical curriculum, the time strictly allotted to Animal Production, seems presently too short.

Agronomy is taught in a total time of 8 hours including only 1 hour of extramural practice. There is no information available regarding the content of agronomy teaching, but one hour of practice seems too little to acquire good knowledge about silage production or pasture management. In the second course, Animal Clinical Nutrition, Veterinary Microbiology and Immunology, Veterinary Parasitology, Veterinary Pathology and Meat Inspection Techniques are taught in the framework of farm practice. Apart from those, Epidemiology and Statistics are taught in the third course, but the significance to animal production or farm practice is apparently only marginal.

There is no reference to animal transportation related to animal production. There is only information regarding transport of animals to the hospital.

#### 4.3.2 Comments

It would be advantageous to use all relevant animal species for teaching. Handling of farm animals should be seen as priority to acquire a thorough understanding of food animal welfare and animal production. The investment of only 5.8% of time in the module “Animal Production”, although somewhat compensated by clinical teaching in food animals – another 7,2% -, seems still little to train well for taking on leadership positions in this important economic area. Compared with the importance given to the “Hygiene and Public Health Area” (16-24% time of the overall curriculum), the time devoted to Animal Production teaching seems rather poor. A typical and desirable distribution of teaching time would be 20:20:20:40 for Basic Science: Animal Production: Public Health and Meat Inspection: Animal Clinics.

#### 4.3.3 Suggestions

Due to the small number of commercial farms in the vicinity of the Faculty, the best option lies in the construction of some additional housing units in the Saari teaching farm in order to better train future veterinarians in animal production issues. More time should be devoted to Animal Production in order to get a more complete knowledge, in animal production.

#### YEARLY ECONOMIC INPUT OF THE CLINICAL SCIENCES IN COMPANION ANIMALS IN FINLAND

ACTIVITY	NUMBER OF ESTABLISHMENTS	AVERAGE PERFORMANCE	TOTAL CASH FLOW
Companion animal clinics	350-400	100.000 €	35.000.000 – 40.000.000 €

#### YEARLY ECONOMIC INPUT OF THE VETERINARY ACTIVITY IN LIVESTOCK PRODUCTION IN FINLAND

FOOD PRODUCTION OF ANIMAL ORIGIN	YEARLY COMSUMPTION PER CAPITA	TOTAL PRODUCTION	UNIT COST	CASH FLOW
POULTRY MEAT	16 Kg.	108,860 Tm	850 €	92.531.000,00 €
BEEF MEAT	19 Kg.	82,521 Tm	2700 €	222.806.700,00 €
PIG MEAT	34 Kg.	217,067 Tm	2100 €	455.840.700,00 €
MILK	52 Kg.	2.254,920 Tm	500 €	1.127.460.000,00 €

<b>EGGS</b>	<b>160 units</b>	<b>900.000.000</b>	<b>0,1 €</b>	90.000.000,00 €
<b>TOTAL INPUT OF THE FINISH MAIN LIVESTOCK</b>				1.988.638.400,00 €

The average cost of the veterinary services (labor, reproduction, medicines,...) is estimated to be between 6-8% of the total production costs of Livestock.

In Finland, the relative input of the veterinary activity in Livestock production will most likely be around 120 – 160 Millions €, which means four times as much as the presumed costs for veterinary care in companion animals.

#### **4.4 CLINICAL SCIENCES**

##### **4.4.1 Findings**

Teaching in clinical sciences is without doubt excellent. It is characterized by high standards, is research based and yields in good practical hands-on skills of students. Student groups in clinical rotations are small (8-10) and supervision is largely sufficient. Academic organisation, premises and equipment are by large above standards at the Viikki Campus.

Basic surgical skills are taught in cadaver surgery courses; later on, students participate as assistants in surgery. Students remain usually with their cases from admission to discharge, performing themselves medical treatments, small laboratory procedures, post-operative care and recovery. Case responsibility is thereby well taught.

There is a 24 hr emergency veterinary service in which students actively participate. Emergency Service duty in the Small Animal Hospital is obligatory as it is part of the clinical rotation. The Emergency Service in the Equine and Production Animal Hospital is organised 24/24 hr on an “on-call” basis, a system in which students are also required to participate.

In the Saari unit, the establishment operates a mobile clinic. Two to four students accompany the teacher to the farms where they participate in the physical examinations, discuss the diagnoses with the teacher, take samples and administer medications. They also perform some surgical interventions under supervision.

During extramural work, students continue to be covered by liability and accident insurance. The rest of costs of this type of practices (travel, accommodations,...) are covered by the students. To ensure that students reach their destination even in harsh weather conditions typical of Northern Europe, the faculty offers a course on safe driving. At the Saari farm, comfortable student quarters are provided free of charge for those preferring not to commute.

The allocated hours for the clinical sciences seem to be sufficient and are in balance with the curriculum, although the curriculum, in general, is considered by some and at times as “**overloaded**”. Even with a less loaded curriculum, the hours of the clinical sciences are very adequate for a good veterinary formation.

The disciplines of the clinical sciences are well integrated and coordinated and there exists a good balance between the “typical” companion animal species. However, a rotation in exotic animal clinics (not existent presently) might be desirable. The presence of this type of animals as pets is getting

increasingly common in the European countries and, consequently, it is deemed necessary to acquire some knowledge and experience in this field.

Although hands-on clinical teaching is adequate, clinical necropsy services ought to be part of the clinical rotations since pathological anatomy is apt to help students to get more complete diagnoses. Also, necropsies of birds and pigs are rarely performed inside the faculty; students have to go to the neighboring Finnish Food Safety Authority (EVIRA) facilities to gain sufficient experience in necropsies of those species. EVIRA and the faculty are collaborating closely. Field necropsies are also occasionally performed on pigs and poultry in the mobile clinic.

The facilities and the equipment are excellent in view of a good education of future veterinarians. The environment is equally adequate and so is the organization on the whole.

The 12 weeks in the production animal clinic rotation in addition to the time spent in the mobile clinic seem sufficient for the students to have the opportunity of handling all types of related pathologies.

Obstetric surgery is performed in the facilities of the Department of Animal Production because Reproduction and Obstetrics are included in the Saari Unit. The program is comprehensive, although the facilities are not as sophisticated and “state of the art” as compared to the Viikki Teaching Hospital.

#### **4.4.2 Comments**

None

#### **4.4.3.1 Suggestions**

- A rotation in exotics animal should be considered to offer formation in this new field . Whenever possible, students should be given the opportunity to perform surgical procedures on their own under the supervision of staff surgeons; that is, every student should, as a minimum requirement, have accomplished at least one small animal laparotomy procedure (ovariohysterectomy for instance) on his/her own. This should be reflected and signed off in the student’s booklet of practical procedures.
- Improve the computer-based case record system by adding key words to disease and treatment processes in order to facilitate searches for the purpose of clinical research.
- Make clinical necropsy services a mandatory part of the clinical rotations

### **4.5 FOOD HYGIENE & TECHNOLOGY AND VETERINARY PUBLIC HEALTH**

#### **4.5.1 Findings:**

##### **Practical training**

There are four weeks training in slaughterhouses preceded by laboratory practical work. The training is divided between pig/cattle slaughterhouses, reindeer/poultry slaughterhouses and inspections in institutions such as meat production plants with provincial veterinary officers. There is coordination with the Finnish Food Safety Authority,(EVIRA), which is also the competent authority for registration and other veterinary matters in Finland. The laboratory meat inspection course uses abnormal organs procured from a slaughterhouse.

## **Integration of the food training with the various disciplines of the course [pathology, pharmacology, microbiology & toxicology, residues/withdrawal times and parasitology.]**

Teaching from the animal disease perspective seems to be well linked to teaching from the food safety perspective. Farm animal medicine is also well linked. The final sixth year autumn term is devoted entirely to food hygiene.

### **Internal and external training.**

For the training in the veterinary school there are 70 spaces in the largest lecture rooms for internal lectures. Textbooks available to students on public health are in the Finnish language but textbooks are available on public health in English in the library.

A visit was paid to a large pig slaughterhouse in Forssa. The conclusions of this visit were:

- Adequate time is given to student practicals.
- Encouragement is given to students to work as paid auxiliaries.
- There is satisfactory training in animal welfare in lairage and at time of slaughter
- Training is given in food technology and food safety science including SOPs, HACCP etc. Part of the training includes drawing up a HACCP plan for a food business.
- Students perform necropsies on all pigs which are dead-on-arrival with results validated by the veterinary inspector.
- Students write reports and learning diaries during practice.

### **Level of inspection experience in milk, cheese, fish, meat products and poultry.**

There is an internal processing unit for teaching meat processing. There is also a dairy unit for milk and milk product hygiene. For these and other areas use is made of outside plants for food and environmental hygiene studies. This is done in conjunction with qualified veterinarians. Laboratory teaching includes safety and quality of food products of animal origin including fish products. The impression gained from students was that more time could be given to poultry and fish.

### **Conclusions**

Students are prepared for work in Finland or anywhere in the EU at graduation and there is follow-on course for state and official veterinarians to enable compliance with food safety legislation.

### **4.5.2 Comments**

The distance to the slaughterhouses creates travel and accommodation costs for students although there is also an opportunity to earn money in employment as auxiliaries.

### **4.5.3 Suggestions**

None

## **4.6 ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS**

### **4.6.1 Findings**

Electives offer a wide variety of options and are well used by students especially during the generation of their thesis

### **4.6.2 Comments**

Discussions in the Academic Steering Committee are underway as to when during the curriculum to begin tracking and to what extent.

### **4.6.3 Suggestions**

Although early tracking might be beneficial to deepen knowledge in areas of specific interest, it should be borne in mind that the formation of veterinarians with a sound basic knowledge in ALL fields of the profession should not suffer by employing such options.

## **5. TEACHING QUALITY & EVALUATION**

### **5.1 TEACHING METHODOLOGY**

#### **5.1.1 Findings**

The Teaching at VFH is research based, is constructively aligned and is student-centered.

The aim is the promotion of learning based on understanding, high-quality expertise, and the ability to apply theoretical knowledge to problem solving. The instructions cover the methods of acquiring, documentation and analyzing scientific and technical data. The practical training is well structured in most areas.

As indicated in chapter 4.1., teaching is mainly supervised theoretical training (lectures and seminars), self directed learning, supervised practical training (lab-desk top work including the proper use of microscopes), non-clinical practical work on normal animals and strictly hands-on clinical work on animals in a clinical environment. Self directed learning may be used by the students to prepare group work and for preparation of examinations.

Lecturing is the most important teaching method, encouraging active student participation. Participation in lectures is, however, not mandatory.

The clinical training is carried out in small groups of 8 – 12 students which are often subdivided further. The fifth year is practically free of scheduled lectures (all clinical year). The practical training in Veterinary Food Hygiene/Public Health takes place in various stages in the food chain.

Problem-based learning is seldom used in its pure form. Case-based teaching represents – however - an essential element throughout the studies.

As indicated in SER 1 the students greatly value textbooks written in Finnish. They prefer to have handouts of the teachers PP-presentations in good time before the lectures, but teachers try to leave room for the students to write their own notes. Course notes are essential in most disciplines in supplementing the textbooks, as the national context may differ considerably from that of the textbooks. The students are encouraged to use veterinary textbooks, even though most of them are in English. In this connection it should be stressed that English text- and handbooks are comprehensively used throughout the study.

Each course has a responsible teacher being the central person in coordination and contact with external lecturers.

The Academic Planning Committee has the overall responsibility of the quality of the curriculum. Each department introduced two years ago a “curriculum workshop” as described in SER 1. The members of the workshop ensure the development of the courses, strengthens the co-ordination of teaching, and ensures that a wider Faculty view is taken into account in the departmental curricula.

A working group was established in order to create a student feed-back system. Each year students are asked to give feed-back on the courses. The feed back is compulsory for larger blocks and voluntary for smaller blocks.

### **5.1.2 Comments**

As indicated by the ratio theoretical/supervised teaching theoretical teaching is favored in basic sciences.

The increasing use of international text- and handbooks, supplemented by notes in Finnish is favorably noted.

The voluntary feedback on evaluation material is satisfactory as more than 50 % of the students return their comments.

### **5.1.3 Suggestions**

The faculty should consider an increase in practical teaching at the expense of some theoretical teaching in basic sciences.

## **5.2 EXAMINATIONS**

### **5.2.1 Findings**

The most common examination type is a written examination consisting of short essay-type questions. Other types are multiple choice questions, and oral examinations are an essential part of the first year practical training in anatomy. Furthermore, oral group examination is a part of production animal training and project-based group presentations are the examination method in epidemiology. In reproduction problem solving is applied.

The students have the right to sit examinations in Swedish which is the second official language in Finland. Students must – in general – earn 60 % of max. points to pass an examination. Grades 0 – 5

are generally used except for practical orientated courses that use pass/fail. The Licentiate thesis is graded on an eight-step Latin language scale.

There are no special periods of examinations. Usually the examination is in close connection with the specific course. In several courses there are assignments during the course. The purpose is to encourage to study during the whole course and not only up to the examination. The number of examinations has markedly decreased during the last couple of years

The VFH does not use external examiners. Examinations are rarely given by one examiner alone. In general, more than one teacher poses questions in each examination.

There is no limit in the number of times a student can retake an examination that is not passed. After one to two retakes the student is, however, contacted by the senior lecturer in university pedagogics.

Furthermore all first year courses must be passed before entering the third year. Other points in the study where students cannot progress until certain examinations are passed also exist (e.g. a student cannot enter the course of Food and Environmental Hygiene unless microbiology and immunology, pathology and meat hygiene are passed).

### **5.2.2 Comments**

Although EAEVE recommends the use of external examiners, VFH uses only internal examiners. This seems to be based on local tradition rather than having a legal base. There were no student complaints about the exam process.

The apparently unlimited number of retakes of an examination is quite uncommon and ought to be scrutinized.

### **5.2.3 Suggestions**

The faculty should consider the introduction of external examiners in major subjects.

The faculty should verify if it is indeed reasonable to allow for an unlimited number of retakes of an exam.

## **6. PHYSICAL FACILITIES & EQUIPMENT**

### **6.1. General aspects**

The new home of the veterinary faculty is the Viikki university campus in the eastern part of Helsinki, along with several other bio-science faculties of the University of Helsinki. The main EE building in which the Faculty's operations are located, covers a net area of 5.690m<sup>2</sup>, whereas the clinicum building covers a net area of 6.010 m<sup>2</sup>. To the faculty belongs also the Saari estate in Mäntäsälä with a gross area of 2.753 m<sup>2</sup> in use.

The main building houses the faculty administration, the Department of Basic Veterinary Sciences and the Department of Food and Environmental Hygiene. The Veterinary Teaching Hospital located in Clinicum building provides clinical facilities for companion animals and horses. The hospital including stables for horses covers 7.646 gross square meters. Besides the clinical facilities, there is one lecture hall, several diagnostic and research laboratories and ample office space for teachers, researchers, technical staff and students

The facilities in Saari house the Department of Production Animal Medicine. The complex is composed of a main building with offices and the clinic buildings with laboratories, storages for pharmaceutical products and supplies. There is a large demonstration hall for instructions, a joint procedure and surgical room and facilities for animals with storages for food. The Veterinary Teaching Hospital covers 1.489 square meters. For teaching purposes there were - at the time of our visit - two cows, one calf and one horse stabled. The Department has contracted the use for teaching of a dairy herd of 35 cows, stabled at the premises in Saari. Thanks to the mobile clinic they have 1500 cattle cases and about 500 horse patients per year. The facilities are very well equipped.

Personal security is given a very high priority. Laboratories are equipped with fume cupboards, eye-wash fountains as well as emergency showers. Protective clothes, gloves and shoes are compulsory where contact with infectious material is possible. All facilities as well as the equipment used are well maintained and clean.

The number of lecture rooms is sufficient for normal theoretical work. There are consulting rooms, 6 surgical suites for small animals with space for endoscopies and one for dental medicine. Four equine examination areas and two surgical places plus one hall for cattle examination and surgery are present in Saari, plus three stalls for examinations and a phantom for sperm collection. Additional space is provided for final discussions about clinical cases between teachers and students on practical work.

In both locations (Viikki and Saari) there are enough transport facilities for students and teachers to provide them with opportunities for practical work and study outside the faculty.

There exist sufficient facilities for training in food hygiene and carcass handling; access to slaughterhouses is provided with a contact. The number of laboratories for food hygiene is sufficient with adequate number of seats for students. Computer desks outnumber students and easy access to computers is provided.

### **6.1.2 Comments**

The Veterinary Faculty of Helsinki has new, modern and sufficient facilities and equipment for teaching both the theoretical and practical part of the curriculum. Laboratories size, teaching halls capacities, examination places etc. suffice for good and effective study of veterinary medicine. The caseload seems sufficient. The food animal department is located in a rural area outside Helsinki with a sufficient number of large animal patients, predominantly treated by means of a mobile clinic. In all locations conditions for research and teaching are excellent.

### **6.1.3 Suggestions**

No suggestions

## **6.2 CLINICAL FACILITIES & ORGANISATION**

### **6.2.1 Findings**

Clinical facilities & organization are throughout excellent to outstanding. Most has been covered in chapter 2.

### **6.2.2 Comments**

Some facilities such as lecture rooms and areas (animal housing) at the Saari unit might become too small when the increased number of students enters clinics.

### **6.2.3 Suggestions**

Provide for enlarging some spaces proportionally with increasing numbers of students.

## **7. ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN**

### **7.1 Findings**

As far as the sources available to provide access to animal material are concerned, there is the experimental farm in Viikki, the Teaching Hospital (division of Pathology), slaughter houses as well as the Finnish Food Safety Authority EVIRA. Occasionally, students also bring their own dogs for live anatomy and physiology exercises.

There is a dairy herd and a company which provides horses (Agrifood Research Finland).

The number of dairy and pig herds in the area has decreased dramatically but seems presently to be sufficient for adequate teaching.

Ratios for poultry and pigs are insufficient and there are no regulated in-house necropsies for poultry and only a small number of pigs.

The fresh chilled or prepared material for anatomy is adequate. However, this is not true for the number of pigs.

There is enough material for cattle, equine, dogs and cats. The material is insufficient for small ruminants, pigs, poultry and rabbits.

The clinic materials to enable staff or students to develop their skills are adequate, but students need more pigs and poultry cases.

Students are given adequate exposure to slaughtering of various species as well as to materials for supporting food hygiene training.

The four week training period seems to be sufficient to acquire those skills.

### **7.2 Comments**

As the Faculty of Helsinki is evaluated on the basis whether its graduates are well enough trained to work in the European Union, it is considered necessary to increase the pig and poultry production knowledge. The 27 EU countries have approximately 161 million pigs and 1.5 billion poultry birds, these species being the most important intensive productions, which feed a large part of the population. Hence, the veterinary training must be comprehensive, with a sufficient number of pets and production animals so that graduating veterinarians will be able to face the professional diversity that currently exists.

### **7.3 Suggestions**

Due to the relative small number of existing commercial farms in the vicinity of the Faculty, the solution seems to lie in the amplification of the school farm in order to better train future veterinarians in avian and pig production.

## **8. LIBRARY & EDUCATIONAL RESOURCES**

### **8.1 Findings**

The library services are centralized. They consist of the amalgamation of all libraries of the biomedical faculties at the Viikki Campus. The building and its organization are simply outstanding. Staffing is adequate and computerized library services are ample and user friendly.

Besides this central library, each department and most units have their own small library which is freely accessible to students and staff. All books of these decentralized libraries are also catalogued in the central library.

In the faculty building, there is ample space for computerized literature search. In general, we always found free and available computer space, despite extensive use by students. E-learning is well developed and is continually enhanced. Faculty is regularly asked and encouraged to suggest purchase of library material pertinent to their teaching. All major veterinary and biomedical journals are available and/or are accessible based on electronic subscriptions.

### **8.2 Comments**

Simply one of the best biomedical libraries ever visited.

### **8.3 Suggestions**

None.

## **9. ADMISSION & ENROLMENT**

### **9.1 Findings**

The study programme of the veterinary faculty consists of six years, the median duration being 6.3 years. Out of the presently enrolled 408 undergraduate students, 374 are female and only 34 are male. Applicants for veterinary studies must be eligible for university studies. More than 90% of applicants have either passed a national admissions examination or hold an international diploma. The number of new students admitted in 2008 rose to 70 as compared to 55 in the past years. The admissions examination contains questions from physics, chemistry and biology. Over 600 applicants send applications with 70 being admitted. Only 30% of new students have completed matriculation in the year of application. Many of the 70% that have not passed at their first attempt tend to sit for the exam until they eventually pass. On average, 50 students graduate yearly – a number which is to be raised to 60 in line with the objectives of the state since there is an urgent need of veterinarians in Finland.

### **9.2 Comments**

Just like in the majority of European faculties, there exists a strong imbalance between male and female students, however, Finnish legislation does not allow steps to allow males to be treated preferentially in the application process. The faculty offers many modes of study guidance given to students whose studies have been interrupted. The number of students exceeding the average length of studies to an extensive degree is very low.

### **9.3 Suggestions**

To find possibilities to ensure that nearly all students complete their degree within the average study period.

Inform students early on, perhaps even before the entry examination, that the greatest need for veterinarians is in the rural areas and in food animal production and that the market in urban areas is nearly saturated.

## **10. ACADEMIC & SUPPORT STAFF**

### **10.1 Findings**

#### **Ratio of teaching staff to students and staff ratios in relation to the SOP.**

This is within EAVE guidelines but since student intake has increased by 40% the ratio will need to be monitored especially for practical teaching.

#### **Staff ratios**

Ratio of teaching staff to support staff is 56% to 44%

#### **Percentage of staff who are veterinarians**

Percentage of staff who are veterinarians is 59% of teaching staff or 33% of total staff.

#### **Staff shortage or disproportion in staff**

The faculty is well staffed overall but concern was expressed regarding staff levels in certain areas such as diagnostic imaging, clinical nutrition, clinical pathology, anaesthesia, poultry medicine and production, medical imaging and equine sports medicine.

Continuous work overload was noted in the clinical area as far as support staff is concerned because many nurses and technical staff are frequently out of work due to illness.

The PhD students also reported that although they are expected to spend approximately 10% of their time for teaching, in reality the teaching load reaches often 30% of working time.

#### **Movement of staff and flexibility of deployment**

In reality there is not much movement. Some areas have a high workload such as pathology with 78 hours of lecturing . plus year around practical teaching

#### **Staff skills and training**

Staff members are encouraged to take part in national and international congresses and continuing education and to some extent the salary system rewards good teaching skills via a performance management system.

Departments are responsible for providing the teachers with training during working hours via the Centre for Research and Development of Higher Education [Faculty of Behavioural Sciences.] There is assistance with the use of ICT in teaching such as the use of learning management systems.

There are development days for staff once or twice a year and staff members have access to lecturers in university pedagogy and e-learning planners.

This training is not mandatory and it is possible for assistants and junior staff to teach for periods without formal training in didactics.

### **10.2 Comments**

The comment was made in interviews with support staff that they have to guide assistants and junior staff in the methodology of teaching and that this guidance has to be repeated every year as the assistants rotate.

It is noted that nurses are not a registered profession and that there is no minimum standard of training. E.g. a nurse may be solely trained in the equine area without knowledge of companion animals or vice versa.

### **10.3 Suggestions**

There may be possibilities for employing additional teaching staff (e.g. residents or PhD students) by linking with the industry and/or other external resources (e.g. in the area of companion animal nutrition).

The profession of animal nurses should be formalized with a title given and continuing education for this group of support staff provided. Nursing staff should be given a more important role in hands-on teaching. Technical staff should be motivated and/reasons for lack of motivation, frequent illnesses and lack of corporate identity among this group of employees should be analysed and measures be taken to improve the situation predominantly by positive support.

## **11. CONTINUING EDUCATION**

### **11.1 Findings**

#### **Legislative requirements and Continuing Professional Education (CPE) objectives to meet them.**

Reference is made to CPE in the objectives of the faculty (concept of life-long learning) and within the diplomas awarded.

Finnish legislation has regulations on the obligation of veterinary surgeons to maintain and develop their professional skills and knowledge but detailed proof of CPE is not monitored. The Consultative Committee on Continuing Education is planning the development of a credit registration system and disseminates information about education.

#### **CPE programme**

The Faculty co-ordinates the Continuing Education Advisory Board which co-ordinates the providers of education. Staff are made available for this event and paid for their involvement. The main training event is an annual veterinary meeting arranged by the Finnish Veterinary Association. The program is comprehensive with international as well as Finnish lecturers. The faculty plays a major role in providing the lecture material. Attendance by graduate veterinary surgeons is good, averaging about 1000 at this three-day event out of 1300 active veterinarians in Finland.

#### **Recipients of the CPE programme**

The practitioners are catered for by courses in Production Animal Medicine by a diploma of 30-ECTS. There is a course for state veterinarians of 40-ECTS to enable compliance with food safety legislation EEC Directive Nr. 853/2004. There are also some courses shared between undergraduates and

graduates. CPE is also provided by other Finnish organisations such as the Palmenia Centre for Continuing Education, the Finnish Food Safety Authority EVIRA and the Finnish Veterinary Association in conjunction with Fennovet publishing.

### **Distance Learning**

Helsinki University Library implements the program FinELib funded by the Ministry of Education. FinELib acquires Finnish and foreign electronic material for Finland, such as scientific journals, reference databases for specialist fields and reference books. Customers may access articles in electronic form via a catalogue of electronic journals, a reference database for a specialist field, a library catalogue, an encyclopedia etc. This service is generally used by veterinarians who are enrolled in a diploma level course.

The Finnish Veterinary Association provides the members information services. Since February 2009, the VetMed Resource –veterinary data base has been freely accessed by the members. More than 90 % of the Finnish veterinarians are such members and, therefore, most veterinarians have a free access to this data base which is independent on their employer.

### **Structure of CPE**

Emphasis is on diploma-level CPE. Diplomas include:

- Production Animal Medicine
- Environmental healthcare management

## **11.2 Comments**

Distance learning requires further development as Finland is a large country and vets working and living in remote areas may find access to CPE to be difficult.

## **11.3 Suggestions**

Distance learning and access to the program FinELib for larger CPE projects such as diplomas etc. Consideration could be given to access for smaller ad hoc programs so that veterinarians could build up CPE.

The continuous education credit system for practitioners should be formalized and controlled by the licensing authorities.

## **12. POSTGRADUATE EDUCATION**

### **12.1. Findings**

The faculty offers 3 postgraduate formation paths: one, PhD programmes; two, national specialist titles, and three, European College degrees. The faculty has a »Specialisation Committee«, appointed by the dean and one of Vice-Deans is specifically responsible for postgraduate education.

**PhD:** the faculty offers two doctoral degrees (PhD's): Doctor of Veterinary Medicine; this should not be confused with the licentiate thesis, it is in fact a PhD for trained veterinarians (PhD VetMed). Co-operation contracts exist with different programmes, also outside the faculty such as with the Graduate School in Animal Welfare; the Graduate School in Applied Biosciences, Bioengineering, Food & Nutrition, Environment; and the Viikki Graduate School in Biosciences.

Presently 76 students are involved in this programme; there is also the possibility for non-veterinarians (trained biologists) to study for a PhD (PhD Sci) within the Veterinary Faculty. At present 26 biologists are enrolled. Both degree paths involve research in one of the research groups of the faculty. Studies last from 4 to 10 years and are largely financed by outside funding (research grants). Each postgraduate student has one to three appointed supervisors. Publication of several papers in peer reviewed journals is the major requirement for obtaining a PhD. PhD students are also involved in teaching (in general 10% and sometimes up to 30%).

**National Specialist Title:** among approximately 1700 active veterinarians in Finland, 270 have acquired a national specialist degree. The Faculty offers the following areas of specialization: food production hygiene, equine diseases, small animal diseases, infectious animal diseases, production animal healthcare and medical treatment, as well as environmental healthcare. This type postgraduate formation stretches over 4 years and requires an equivalent of 240 ETCS training. One year is free training in applicable area, and 3 years supervised practical training; there are presently over 180 veterinarians enrolled, however only a few per year (approx 10) obtain their specialist title in time. The reason is that there are not enough faculty supervisors available in this programme, creating often undue hardships for practitioners seeking specialisation.

**European College degrees:** the faculty employs presently European Diplomates in 8 different disciplines. Some board-eligible faculty members are in the process of taking exams, so that the number of specialisation programmes is increasing. On one hand, the faculty is actively promoting European College specialisation (Diplomates are favored in the recruiting process), on the other, European Specialist titles are not officially recognised in Finland. Consequently, remunerated resident positions are rare and the resident training concept develops only slowly, in general, despite established and successful programmes in several areas.

Within the clinics, in small as well as in large animal services, a well structured rotating internship programme is established.

## 12.2 Comments

The postgraduate PhD study programme is well organised and significantly contributes to the overall quality research output of the faculty, having also positive effects on the allocation of the overall budget.

The national specialist programme seems difficult to organise; there is a »bottle neck« with long waiting times for those who have finished the theoretical part and wait to be enrolled in the supervised practical part.

The European College concept, although well accepted and supported by the faculty in general has difficulties of broad public acceptance as authorities do not recognise it.

## 12.3 Suggestions

Evaluate long-term strategies for phasing-out the national specialist programme as it has major organisational flaws and because in all offered fields well structured European specialist programmes, governed by established and internationally recognised Colleges, do exist. Recognising and favoring European specialist training programmes (residency) would also be a major contribution to internationalisation and academic mobility (uniform training standards with English as the common language and the required language to take examinations).

## **13. RESEARCH**

### **13.1 Findings**

The faculty promotes the application of the latest scientific methods and the results of their own research in the framework of lectures and teaching, in general (research-based teaching). Most of the academic staff is active in both teaching and research. All undergraduate students must have acquired experiences in research as part of the curriculum. During their bachelor studies, students write a compulsory bachelors thesis and at the completion of the 6 year curriculum, a licentiate thesis (Master's thesis) is written by all students, which comprises either a thorough literature review or data of original research.

Every year, the academic staff publishes more than one hundred scientific papers mostly in international scientific reviews, with impact factors given specific weight. Recently some papers by faculty research groups were published in »Science«. Important factors contributing to the overall very good research output are the PhD programmes, the excellent research facilities with state-of-the-art equipment, the research networking on the Viikki Biosciences Campus and last but not least the Budget allocation system, honoring financially quality research output and number of PhD's graduated.

### **13.2 Comments**

Well organised research work leads to a high number of scientific publications on all levels within the faculty.

### **13.3. Suggestions**

None

## **EXECUTIVE SUMMARY**

Since the last EAEVE visit 10 years ago, the Faculty has undergone major changes, for the better throughout:

- The move to new, modern facilities at the Viikki Bioscience Campus with creation of a state-of-the-art Veterinary Teaching Hospital and 4 Departments.
- New professor- and lectureships in previously critical areas
- Creation of new graduate schools within the network of the Viikki Bioscience Campus
- Curriculum developments fulfilling or exceeding requirements of EU directive 2005/36/EC (6 year curriculum) and alignment with the Bologna process (ECTS, Bachelor, Master and PhD degrees)
- Positive evaluation outcome and compliance with the Quality Assurance Systems of the Finnish Higher Education Evaluation Council
- Implementation of three-year strategic planning periods corresponding to budget periods of the same length
- New salary system, including personal work performance assessments affecting all employees (academic and technical support staff)

A challenging recent change (2008) is the government mandated increase in student admissions from 50/55 to 70 per year. A new University Act, becoming law in January 2010, will change structure and

organization further; its future impact could not be evaluated during the present visit, however. In essence, the semi-privatisation process of the University will continue, departments will merge into larger units and administration on all levels will be focused and more centralized.

The faculty has clearly formulated objectives which are consistently followed; of those, the most important ones are:

- Research and research-based teaching
- High-standard treatment of individual animals
- Emphasis on the “from stable to table” concept
- Environmental and food hygiene as an integral part of the national veterinary public health concept.
- High quality post graduate formation, specialization and continuing education (life-long learning concept)

The team found all of those objectives enacted and realized throughout.

The faculty has a sound decision making system implemented on all levels with parity committees charged to consider and to decide on financial, curriculum, structural and organizational matters. Internal and external quality assessment programmes with feedback on teaching, research and performance (including laboratories) are well established and carried out regularly (see SER appendix 2).

The overall budget, although somewhat short, especially in the clinical areas, is negotiated every 3 years and has a sound basis. However, an overall increase of at least 10%, commensurate with the increased student intake, will be needed shortly. Budget allocation to the faculty as well as intern salary structures are strictly performance related (research output, number of graduating students).

Student admissions are regulated by a selective entry examination. Students are motivated and find excellent learning conditions in every aspect throughout the entire curriculum (favorable ratio teachers/staff/students, clinics, laboratories, library, e-learning, safety, social programmes and individual tutoring). Failed exams may be repeated indefinitely, which the team judged as necessitating re-evaluation.

All facilities at the new Viikki Bioscience Campus are truly outstanding; on the Saari Campus, some 60 km from town, the teaching farm is at the present time appropriate in every sense for its purpose but will require some amplification in the near future.

In general, it can be said, that the teaching programme, staff and facilities of the Veterinary Faculty in Helsinki exceed the requirements of EU Directive 2005/36 significantly in all aspects. No Category 1 Deficiencies were identified by the team and it can be concluded, that graduates from this Faculty meet the requirement for free movement of professionals across the European Union.

However, no teaching institution can be perfect; the team found the following flaws which should be addressed by the faculty (the sequence within the following listing reflects the relative urgency of the desirable improvements):

- The overall time dedicated to animal production teaching should be significantly increased, incorporating and emphasizing subjects such as animal nutrition and porcine and avian (poultry) medicine
- Creating senior teacher positions in anesthesia, poultry medicine&production, clinical nutrition, clinical pathology and in medical imaging (junior teaching staff only).
- Enhancing mobility and internationalization by fostering the European College concept, including its public recognition, the English language within the curriculum as well as

international student and faculty exchange programmes (ERASMUS, residents, guest lectureships)

- Progressive amplification of the teaching farm (especially animal housing, isolation units, equipment) commensurate with increasing student numbers

**At the end of the evaluation visit, the EAEVE Stage I visiting team unanimously made the decision to recommend to the European Committee on Veterinary Education (ECOVE) to add the Faculty of Veterinary Medicine of the University of Helsinki to the list of “Approved Colleges”. The team of the Stage II evaluation visit unanimously decided that the recommendation of “full Accreditation” will be made to the ECOVE, pending acceptance of the stage I approval.**

**This report was presented to the ECOVE on 23./24.November 2009. An unanimous decision was made to follow the experts’ recommendations on both the stage I and II level and make the Faculty of Veterinary Medicine of the University of Helsinki the first one on the list of “Accredited Establishments”.**