

**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 THE UNIVERSITY OF CORDOBA, SPAIN**

**From 09 - 13 October 2009**

**EXPERT GROUP**

**Prof. Dr. Giovanni Re, (Chair) Turin, Italy**

*Expert Visitor on Training in Basic Sciences*

**Prof. Dr. John Pringle, Uppsala, Sweden**

*Expert Visitor on Training in Clinical Sciences, Academician*

**Dr. Marc Janssens, Waasmunster, Belgium**

*Expert Visitor on Training in Clinical Sciences, Practitioner*

**Prof. Dr. Thomas Blaha, Bakkum, Germany**

*Expert Visitor on Training in Animal Production*

**Prof. Dr. Katarzyna Kosek-Paszkowska, Wroclaw, Poland**

*Expert Visitor on Training in Food Safety*

**Dr. Cristina Vercelli, Turin, Italy**

*Student Member*

**Dr. Robin G. Oakley, Gräfelfing near Munich, Germany**

*EAEVE Programme Coordinator*

## CONTENTS

	<b>Introduction</b>	<b>3</b>
<b>1.</b>	<b>Objectives</b>	<b>4</b>
<b>2.</b>	<b>Organisation</b>	<b>5</b>
<b>3.</b>	<b>Finance</b>	<b>6</b>
<b>4.</b>	<b>Curriculum</b>	
	<b>4.1 General Aspects</b>	<b>7</b>
	<b>4.2 Basic Subjects and Sciences</b>	<b>7</b>
	<b>4.3 Animal Production</b>	<b>8</b>
	<b>4.4 Clinical Sciences</b>	<b>10</b>
	<b>4.5 Food Safety</b>	<b>12</b>
	<b>4.6 Professional, Elective, Optional and “Other” Subjects</b>	<b>14</b>
<b>5.</b>	<b>Teaching Quality and Evaluation</b>	
	<b>5.1 Teaching Methodology</b>	<b>16</b>
	<b>5.2 Examinations</b>	<b>18</b>
<b>6.</b>	<b>Physical Facilities and Equipment</b>	
	<b>6.1 General</b>	<b>19</b>
	<b>6.2 Clinical Facilities and Organization</b>	<b>19</b>
<b>7.</b>	<b>Animals and Teaching Materials of Animal Origin</b>	<b>21</b>
<b>8.</b>	<b>Library and Educational Resources</b>	<b>22</b>
<b>9.</b>	<b>Admission and Enrolment</b>	<b>24</b>
<b>10.</b>	<b>Academic Teaching and Support Staff</b>	<b>25</b>
<b>11.</b>	<b>Continuing Education</b>	<b>26</b>
<b>12.</b>	<b>Postgraduate Education</b>	<b>27</b>
<b>13.</b>	<b>Research</b>	<b>28</b>
	<b>Executive Summary</b>	<b>30</b>
	<b>Annex 1 Indicators</b>	<b>32</b>
	<b>Annex2 Students Report</b>	<b>33</b>

## INTRODUCTION

In 1999, after the first EAEVE visit, a significant historical change happened when the Faculty of Veterinary Medicine of Cordoba (FVMC) moved to the Campus of the University of Cordoba (UCO) in Rabanales, leaving the old site in the city centre, architecturally magnificent, but not functional as a modern Faculty of Veterinary Medicine. Historically, the FVMC, which started in 1847, is very important in the context of the University of Cordoba, a young University founded only in 1972, and of the autonomous region of Andalusia in South-Western Spain with over eight million inhabitants, since it is the only Veterinary Faculty in the region. The FVMC shares the University Rabanales Campus facilities with three other University Establishments: The School of Higher Polytechnic Education, the Department of Sciences and soon the Technical School of Higher Education in Agricultural and Forestry Engineering.

Eliminado: UOC

The second evaluation of the FVMC by an EAEVE/FVE Team of Expert took place from 09 to 13 November 2009. The FVMC had prepared a thorough and fair Self-Evaluation-Report (SER) and arranged a well organized visit.

On the Rabanales Campus, the FVMC has been restructured, consolidated and the new buildings and facilities have transformed it into a modern Faculty of Veterinary Medicine. Many changes have been introduced, as described in the SER (pages 7 to 12), in education programmes and strategies and in organization and equipment such as:

- The reduction of the number of students enrolled per year (from 250 to 150),
- A new curriculum,
- Improvement in research activities,
- The Veterinary Teaching Hospital,
- The Rabanales University Farm,
- The Animal Nutrition Centre,
- The Mobile Clinic,
- The Equine Sports Medicine Centre,
- The Food Technology Pilot Plant
- Establishment of the Central Research Support Service (SCAI).

In the new Curriculum many changes have been introduced such as a reduction in the number of elective hours in optional courses, a higher number of hours in mandatory disciplines, two new subjects, the first at the beginning of the students' career dealing with the management of animals of veterinary interest to familiarize matriculated students with animal handling and the second during the fifth year of the course named "Veterinary Management" resulting from the suggestions of the 1999 EAEVE/FVE visitation. The Faculty Board has recently approved a new Syllabus which will be implemented progressively from 2010/2011 and will replace the present curriculum.

Using financial incentives and thanks to innovative learning projects approved by Regional Authorities and/or by the Ministry, teachers have been encouraged to renew their teaching methodology and to make their material available for students on the web site of the Faculty in the so called "Virtual Classroom".

The FVMC has established effective contacts with many European Countries and actively participate in the Socrates/Erasmus exchange programmes.

As an entity on a University Campus which features many inter-faculty departments and facilities, the FVMC experiences many advantages but also some disadvantages. Obviously, by sharing facilities and equipment with other Faculties in the Campus, the FVMC has the

opportunity to save financial resources and to re-invest them for its own management or to have access to other resources at a reduced cost.

Advantages include:

- The use of a well-equipped centralised Library,
- Recreation, sport facilities (cafeterias, swimming pools, football and tennis fields),
- Limited accommodation for students,
- New laboratories for teaching and research,
- Establishment of Central Research Support Services.

Disadvantages include:

Loss of the strong identity as a Faculty amongst staff and students,  
There is a limited number of support staff working solely for the Faculty,  
The University manages the resources devoted to the Campus and too many services and centres.

12 Departments that provide teaching staff to the FVMC are accountable to the University and not to the Faculty, which means that the FVMC has to face increased difficulties in obtaining grants and running the veterinary training activities performed in these structures independently.

## 1. OBJECTIVES & STRATEGY

### 1.1 Findings:

The General Objectives and Mission Statement of the University of Cordoba (UCO) are well defined on pages 15 & 16 of the Self Evaluation Report (SER).

Eliminado: UOC

The General Objectives as well as the Concrete Objectives of the Faculty of Veterinary Medicine (FVMC) are also well defined on pages 16 to 19 of the SER.

As a separate entity, the Veterinary Teaching Hospital, a company owned by the UCO, has both a Mission Statement and Specific Objectives separately outlined on pages 18 & 19 of the SER.

Eliminado: UOC

The means of evaluating the achievement of the Objectives of the FVMC together with a SWOT Analysis are set down on pages 21 to 24 of the SER.

### 1.2 Comments:

- It seems that every aspect has been listed in the Objectives and there is no single simple Mission Statement with prioritization of the Objectives.
- The training of a veterinarian is a research-based educational programme in which research should take a significant position. Research is first mentioned in the objectives of the Veterinary Teaching Hospital, which is not part of the FVMC.

### 1.3 Suggestions

1.3.1 Simplify the Mission Statement and select and prioritize the Primary Objectives of the FVMC.

1.3.2 Confirm the FVMC commitment to a research-based educational programme.

## 2. ORGANISATION

### 2.1 Findings

The University of Cordoba was founded in 1972 and a detailed account of the structure of the UCQ can be found on pages 29 to 32 of the SER.

Eliminado: UOC

The FVMC originated in 1847, was assimilated as one of the primary faculties into the UCQ in 1972 and is the only existing Faculty of Veterinary Medicine in the Autonomous Region of Andalusia.

Eliminado: UOC

A very complete description of the structure of the FVMC is contained in pages 32 to 60 of the SER. It is classical headed by a Dean, the Dean`s Team and 12 Teaching Departments each with their own Head of Department.

The University Teaching Hospital was separated off from the FVMC in 1998, probably primarily for budgetary reasons, although this is not stated, and was created into a virtually commercial organization directly and separately managed by the University.

### 2.2 Comments

- As is the case with most Spanish Universities, the structure and running of the UCQ, and therefore the FVMC is very centralized.

Eliminado: UOC

- Since the FVMC is by far the oldest element of the UCQ, it has a reasonable influence on University Policy and seems to be treated accordingly well.

Eliminado: UOC

- The FVMC is not autonomous and can only make significant moves via the Rector of the UCQ, but this has, to date, not had any adverse consequences.

Eliminado: UOC

- Although the Dean and the Dean`s Executive Team are elected by the whole UCQ community, the FVMC has virtually no decision making power where the management of teaching resources are involved, the UCQ acting at Departmental level only.

Eliminado: UOC

Eliminado: UOC

- Many services are centralized and managed under UCQ control like the University Library, the Central Research Support Service, the Sport Facilities, the Students` Residence on Campus and the Virtual Campus for example.

Eliminado: UOC

- As a result of the centralized UCQ services, there is of necessity some coordination between departments with regard to the use of resources, but it is clear that cooperation could be improved.

Eliminado: UOC

### 3.2 Suggestions

- #### 3.2.1
- The Team suggests that the final decision for any teaching appointment should be made by the Dean and should not just be made at Departmental level.

### 3. FINANCES

#### 3.1 Findings

Details on the financing of the FVMC are well outlined on pages 65 to 70 of the SER. It has no budget and only some autonomy in relation to the additional income generated. All staff members are employees of the UCO, and not the FVMC. All Campus costs including the sports centre, library, students' residences etc. are financed by the UCO.

Eliminado: UOC

Eliminado: UOC

In principle, the Andalusian Autonomous Government receives financing from the Central Government in Madrid, which then divides the total up between the Universities in Andalusia, based on the number of students, staff and faculties.

Income additional to this is generated from student fees, clinical services, diagnostic and external services, research grants and miscellaneous income. Details can be found on page 68 of the SER.

Income and expenditure are set out on page 69 of the SER and it can be clearly seen that in 2008, of the State Income assigned by the UCO to the FVMC of € 7.047 million, € 6.673 million were spent on Salaries and Benefits. The cost per veterinary student in 2008 was listed as being € 4,960 per annum.

Eliminado: UOC

#### 3.2 Comments

- In discussions with the Rector of the UCO, it became clear that the Autonomous Government of Andalusia makes no special allowances for the FVMC.
- The Faculty of Veterinary Medicine in Cordoba is the only Veterinary Educational Establishment in Andalusia.
- It does not appear to be taken into account by the Andalusian Government that the Veterinary Course is one of the most expensive educational training programmes, due to the multispecies disciplines, the need for sophisticated instrumentation, the need for animals both live and dead, the need for a farm and especially the intensity of the teaching needs.
- There is no FVMC financial autonomy and no full budget, which means that it is impossible to generate a full costing of the training of a veterinary student. The cost listed on page 70 of the SER has little meaning and certainly no comparisons with other European Veterinary Faculties can be made.
- There is a definite shortage of Support Staff throughout the FVMC, which results in teaching and research staff undertaking support staff functions, which is a waste of professional resources.

Eliminado: UOC

#### 3.3 Suggestions

- 3.3.1 Representations should be made by the UCO with or without the assistance of the EAEVE to the Autonomous Government of Andalusia to recognise the uniqueness of the Veterinary Faculty and in particular the training in terms of cost and negotiate an increase in funding for the FVMC.**

Eliminado: UOC

**3.3.2 It is suggested that a full-cost budget be developed for the FVMC in order to be able to determine a directly comparable annual cost of training a veterinary student and that the control of that budget be assigned to the Dean of the Faculty.**

**3.3.3 An increase in Support Staff is an urgent requirement.**

## **4. CURRICULUM**

### **4.1 GENERAL ASPECTS**

#### **4.1.1 Findings**

Although the teaching appears to be well performed, updated, supported by available on-line materials and research-based and there are many PhD students, few of the latter seem to be involved in teaching. The general structure of the curriculum is strongly influenced and limited by the Spanish legislation and tradition.

#### **4.1.2 Comments**

- Integration between students and researchers working in the field being taught does not appear to be normal procedure.

#### **4.1.3 Suggestions**

**4.1.3.1 Integration between students and researchers working in the field being taught should be an integral part of the course plan in order to make the teaching connection to current scientific advances as shown by research and to stimulate students' interest in research.**

**4.1.3.2 An open minded revision of the curriculum taking into account European standards of education in Veterinary Medicine should surely improve the already existing situation.**

### **4.2 BASIC SUBJECTS & SCIENCES**

#### **4.2.1 Findings**

Basic Subjects (235 hours) and Basic Sciences (965 hours) account for about 35% of the core curriculum (3,450 hours). They seem to be adequately taught and not excessive, since most of the Basic Subjects and Basic Sciences are taught with a veterinary bias, both in the contents (particularly seminars) and in the practical work.

The most important items of the basic disciplines are satisfactorily and enthusiastically taught. Incoming students seem to have an adequate preparation for most of the Basic Subjects and Basic Sciences, as testified by the high percentage of candidate that pass the examinations at the first or second attempt (generally more than 80%) in such disciplines. The level of laboratory and practical work, depending on the subject, ranges from 30 to 50% and in some cases more, with a satisfactory hands-on involvement of students. However, although in limited numbers, there are some disciplines in Basic Subjects in which no real

practical work is conducted (e.g. physics), but only guided demonstrations or interactive seminars.

The number of students per group in practical work ranges, depending on the available facilities and equipment, from 5 to 25 for each teacher. Students have free direct access to teaching materials, both through the Virtual Campus or in the teaching laboratories of the departments. A positive aspect is that, with the exclusion of some strictly basic subjects, there is a significant prevalence of teachers who are veterinarians, thus facilitating the pre-professional orientation of these subjects, particularly for practical work (such as for anatomy, physiology, biology, pharmacology and toxicology). Hygiene, security and waste disposal appears to be adequate as well as the arrangements for disabled students.

#### **4.2.2 Comments**

- The basic subjects and basic sciences taught at the FVMC seem to offer a satisfactory preparation for the student. Students consider the amount of hours devoted to basic subjects and basic sciences included in the curriculum as adequate and necessary to their professional preparation. There would appear to be a less than optimal coordination between the different subjects belonging to different Departments.

#### **4.2.3 Suggestions**

**4.2.3.1 A deeper coordination between the Basic Subjects and Basic Sciences is strongly recommended, particularly for those disciplines which have pre-clinical aspects. A more integrated education could be provided on a departmental basis. Moreover, a stricter cooperation should be established between the pre-professional oriented subjects such as microbiology, epidemiology, immunology, genetics, pharmacology and toxicology, including therapeutics and veterinary legislation and the professional disciplines and other activities, e.g. Veterinary Teaching Hospital and services, in order to increase both the professional activity of students and the caseload.**

### **4.3 ANIMAL PRODUCTION**

#### **4.3.1 Findings**

The Department of Animal Production has a quite elaborate building complex which contains several classrooms for 25 to 50 students (one of them equipped with about 30 personal computers), but also a room for goats (for hands-on teaching goat feeding and evaluating the goats' physical development), a room for keeping rabbits in metabolic cages (for hands-on teaching evaluating various rabbit feeding formulas), a milk laboratory (for teaching milk analyzing techniques except of microbiology), and a room for demonstrating the huge variety of all kinds of feed and feed components (for teaching feed recognition).

Out of the teaching areas covered by the Department of Animal Production, the following areas were explained in detail and demonstrated: "Veterinary Management" (comprising veterinary activities for animal health and production consultancy on the one hand and the management of veterinary clinics or practices on the other), "Animal Nutrition" (feed recognition, goat feeding, evaluation of rabbit feed ratios, calculating pig feed rations), Ethnology (recognition of phenotypic animal breeds), "Animal Hygiene and Welfare" (husbandry and handling of pigs, sheep and cattle), "Agricultural Sciences and Economy" (visiting a practical course on how to design a farm for a certain number of sows).

Farm visits are organized in either larger groups (50 students per one teacher for demonstrating animal production in general) or smaller groups (10 to 25 students per one teacher for demonstrating special husbandry systems such as extensive or alternative system or animal welfare issues).

The majority of farm visits are organized through a very close working relation with the largest farmers' cooperative ("COVAP") in the Cordoba region. Two of the veterinarians serving COVAP are in a contracted teaching position for the Cordoba Veterinary Faculty, which guarantees their commitment to teaching "real life" veterinary activities on COVAP premises.

The "Teaching Farm" of the Department of Animal Production: This quite new facility of the Veterinary Faculty named the "Teaching Farm" is about 1 to 2 km away from the Rabanales Campus of Cordoba University. It is fenced in and provides the possibility of demonstrating bio-security measures for an animal holding in general. The farm holds 19 pigs (Iberian pigs), 60 sheep (merino sheep), and 50 goats (from the rare breed "sierra goats") and 3 non-milking cows and some horses (see 7).

The visiting EAEVE team got the impression that the farm was to serve two primary objectives:

- 1) Permitting propaedeutics (allow students to get familiar with animals and to teach the handling of the animals);
- 2) Preserving and demonstrating rare breeds that are threatened by extinction (Sierra Goats and Iberian pigs);

#### **4.3.2 Comments**

- The overall teaching activities of the Veterinary Faculty of Cordoba in the area of Animal Production such as veterinary management (see above), animal nutrition, animal hygiene, ethology, animal protection and ethnology (= phenotypical breed recognition) are quantitatively and qualitatively far above of most of the rest of the European Veterinary Faculties. The teaching activities of the Department of Animal Production take very well into consideration that more and more students of Veterinary Medicine do not have a farming or rural background.
- This is additionally taken into consideration by the fact that at least 160 hours of the students' training has to be done "extramurally" at one of the more than 170 contracted farms, food companies and veterinary practices. The Department of Animal Production asks every student to give a report on their experience during these extramural practical "internships" to a group of about 25 students under the supervision of one of the academic teachers of the Department. The evaluator witnessed two of those reports and experienced very vivid and constructive discussions between the students.
- The Teaching Farm fulfills two tasks, which are propaedeutics and the presentation and preservation of rare breeds (Sierra Goats, Iberian Pigs).
- Forensic and State Veterinary Medicine as well as the Principles of Certification for Animal Transportation are incorporated in the Department of Animal Health.

#### **4.3.3 Suggestions**

**4.3.3.1 Animal Production teaching is mainly well integrated with related subjects such as herd health management and ailments caused by poor or unbalanced nutrition, but there must be better coordination between Animal Production and Animal Health in terms of who is teaching "non-infectious disease**

epidemiology” and “animal health management” at farm level (population medicine).

**4.3.3.2** It is essential that coordination between Departments is both improved and refined.

**4.3.3.3** A decision could be taken to leave the Teaching Farm with Propaedeutics and the Demonstration of Rare Breeds or it could be upgraded in terms of the type and number of animals in order to be able to demonstrate the Principles of Animal Production.

## **4.4 CLINICAL SCIENCES**

### **4.4.1 Findings**

The Faculty has a Department for Animal Medicine and Surgery, which is responsible for the teaching of Clinical Pathology, Clinical Propaedeutics, Radiology, Medical and Nutritional Pathology, Anaesthesiology and Surgery, Obstetrics and Reproduction. All these courses are compulsory.

The Department also offers electives in Behavioural Changes in Domestic Animals (45 hours) and in Clinical Medicine in Horses (45 hours).

The Department of Animal Health teaches the compulsory course in Parasitology and Parasitic diseases.

The Department of Anatomy has an elective course in Veterinary Oncology (45 hours)

All courses consist of a theoretical and a clinical part. The clinical part is taught in the so-called University Veterinary Teaching Hospital, in the Faculty Farm and in an ambulatory clinic which is operated by contracted part-time associate professors. These professors are private practitioners who teach students the practical aspects of Veterinary Medicine. They use their own practice cars when they go with students to the farms in the Cordoba region.

The work with the private practitioners and the propaedeutical work on the Faculty Farm are the main source for clinical exposure with ruminants.

The Faculty Teaching Farm has been covered under Animal Production (4.3.2. and 4.3.3.3).

The University Veterinary Teaching Hospital is an enterprise owned by the UCO. The Faculty provides via the Department of Animal Medicine and Surgery the tenured staff of the Hospital. The Hospital has a small animal section and a large animal section. In the large animal section more than 95% of the patients are horses. The hospital has a 24 hour service seven days per week, but student participation in this system is voluntary.

Eliminado: UOC

The theoretical part of the Clinical Sciences consists of 712 hours of lectures and seminars (56.73%). 26 hours (2.07%) are for self directed learning and 287.5 (22.91%) hours are dedicated to laboratory and non clinical animal work. Students only get 228.5 (18.21%) compulsory clinical work in the Teaching Hospital, the Farm and the Ambulatory Clinic.

The courses surgery, anaesthesiology, clinical medicine, obstetrics, reproductive disorders and ambulant clinics offer together 162 hours of clinical exposure. This means only 12.91% of the total curriculum in clinical sciences. Both teachers and students reassured the team and it was confirmed, that these 162 hours are a theoretical minimum. In reality students spend far more than 162 hours in the clinics. A new curriculum that will come into force in 2 years should solve this anomaly in any case.

Beside the lectures and clinics, students get 160 hours of obligatory Extramural Work. These 160 hours can consist of one period of 4 weeks, or 2 periods of 2 weeks. The Extramural Work can be done in veterinary hospitals or clinics, livestock farms, food sanitary inspection bodies or food industries, and in district agricultural offices, veterinary research institutes, zoos and wildlife centers. This means that in some cases this extramural work can be an addition to the clinical exposures.

Students do not have a lecture free period which can be used for clinical rotations. The whole clinical exposure is fragmented with lectures in between and there is no tracking system.

#### 4.4.2 Comments

- The number of hours dedicated to real clinical veterinary work apparently seems low. 162 hours means 4 weeks on a total curriculum of 3,450 compulsory hours (4.70%). Reality seems to be more positive since students get more clinical exposure than officially mentioned. A system to register the exact number of hours of clinical exposure of the students does not exist in the FVMC.
- With regard to the Veterinary Teaching Hospital, it appears to be unclear who or which individual is ultimately responsible and that the control is not in the hands of those actually doing the work running the hospital. It needs to have more control of its "destiny". It appears that there is inertia of development due to lack of direct leadership and directional decision-making. Investments in equipment and staffing should be done at the clinic leadership level. At the same time, there should be a working group, which continuously controls that the aims of the Veterinary Teaching Hospital (primary objective of veterinary student teaching) are being met and having the power to ensure this.
- Horses, exercise physiology overlap with clinical teaching and service, yet are administratively separate. On the clinical science side, there is a close connection of animal medicine and surgery to infectious diseases and parasitological diseases, the latter both having responsibility for diseases of infection, despite the fact that they are disciplines usually dealing with laboratory samples or dead or dying animals. The front line of initial diagnosis of a "sentinel" case of a potential outbreak of disease in Food Producing Animals appears to lie with the mobile clinician, since the veterinarians at the Veterinary Teaching Hospital are primarily responsible for companion animals (cats, dogs, horses & exotics).
- Practical hours on Therapeutics are not assigned to clinical practicals, thus lowering *on paper* the number of clinical hours offered to students.

#### 4.4.3 Suggestions

**4.4.3.1 The Faculty should reduce the number of hours dedicated to lectures and seminars and should reorganize the way in which students get clinical training. It is essential that the official number of hours for clinical training is increased. A lecture-free period of at least one semester could also solve this problem. In a lecture-free semester students can also participate in the 24 hour emergency system.**

**4.4.3.2 Offer more electives in the clinical field (for example extra hours for mobile clinic, surgery, internal medicine, obstetrics) could be a basis for a future tracking system.**

- 4.4.3.3** The Faculty should develop a system to register the exact amount of clinical exposure each student gets, possibly by introducing a students` records book.
- 4.4.3.4** Urgent consideration should be given to revising the management structure and the managing of the Veterinary Teaching Hospital as outlined under Comments (4.4.2) above.
- 4.4.3.5** A solution should be found to the problem of a potential disease outbreak in Food-Producing Animals outlined in the last point under Comments (4.4.2) above.
- 4.4.3.6** Practical hours on Therapeutics should be assigned to the clinical work which students should undertake during activities at the Veterinary Teaching Hospital in order to improve the amount of clinical work for students at the VTH.

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

### **4.5.1 Findings**

The Department of Food Science and Technology holds classes both for students of Veterinary Medicine and Agro-Engineering. They have 14 full time teachers (12 of them are veterinarians) and 22 part time teachers who are mostly official veterinarians working apart from their regular job also for the Department. They assist students during classes in the slaughterhouse and on food premises (e.g. in retailers). The Department has 5 people working as support staff (3 of them prepare practical classes and sometimes teach students, e.g. in the Pilot Plant, whilst 2 of them are administration staff).

The Department leads two core (mandatory) subjects:

- Food Technology (on 3rd year of study, 75 hours of theoretical classes, 55 hrs of practical classes)
- Food Hygiene, Inspection and Control (on 5th year of study, 105 hours of theoretical classes, 60 hrs of practical classes)

And electives:

- Milk Science
- Meat Science and Technology
- Fish Technology
- Food Microbiology

The training is mostly internal on-site (not external) and is based on lectures and laboratory classes. However, all students have training in a large modern slaughterhouse. This slaughterhouse (COVAP) provides the full range of slaughtering services for cattle (1,850 head per month). From November to March, they slaughter also Iberian pigs (30,000 head per month). From time to time, they provide slaughtering services for sheep and goats. Every student receives 10 hours training in Food Hygiene, Meat Inspection and Control divided into two 5 hour visits (from 7:30 to 12:30). One visit (5 hrs) is in slaughterhouse COVAP, the second one in a poultry slaughterhouse (5 hrs). Students have classes in the slaughterhouse in groups of 5 with one teacher (contracted teacher who is also an official vet). The COVAP slaughterhouse, the meat processing plant and the dairy plant are located about 80 km away from the Faculty and students must organize their own means of transport.

Every student spends also mandatory 5 hours in official veterinary inspection in groups of 2-3 students, gets practical knowledge from a veterinary inspector about leading control and surveillance in different food premises (catering, restaurants, retailers).

During classes on Food Technology, students have two 10 hour visits to a food processing plant (e.g. dairy plant, meat processing plant). During these visits, students are able to see the processes of production of different foods. Visits to food processing plants are made in groups of 40-50 students and are supervised by 2 teachers. When walking through the plant, students are divided into smaller groups. For such visits, the Department rents a bus. However such visits are not mandatory for students.

Every student is obliged to have 5 hours of practical classes in the Pilot Plant which is owned by the Faculty. During these classes, students acquire practical knowledge about production of meat products. These classes are supervised by a teacher or technician.

The Department of Food Science and Technology does not teach classes on chemical residues and feedstuff hygiene. These subjects are covered by Animal Production.

The **COVAP Slaughterhouse** is an 8 years old, up-to-date plant with very good equipment, management and internal organization. This slaughterhouse is certified according to BRC, IFS, ISO 14000 norms. There are two completely separate slaughtering lines; one for cattle and another for pigs. Cattle are kept in corrals before the slaughtering process. Every student is able to experience ante-mortem examination. Animal Welfare is being respected. During the slaughtering process students can observe also post-mortem examinations which are done by veterinarians. One of the veterinarians contracted by the Faculty explains to the students on-line or off-line (depending on the line capacity each day) how to make such examinations. They are also familiar with all hygienic procedures, which should be implemented in slaughterhouses. There are official agreements between the Faculty and the Slaughterhouses and Food Plants.

Both the **Meat Processing Plant and Dairy Plant** are completely new and very well organized, up-to-date, clean and totally modern. All typical Spanish meat products (e.g. jamon, chorizos) are produced there. The Dairy Plant produces different kinds of milk products (e.g. pasteurised milk, cream, milk shakes). During the visit, students go also through the Plant's SOPs and HACCP, in this way understanding hygiene of every single step of dairy and meat processing procedures.

The **MAKRO** Retailer (vegetable and fruit unit, fish unit, meat unit) is supervised by veterinary inspection. During classes in Makro, students are taught by an official veterinarian how to carry out inspections in such place. They acquire practical knowledge about identification of different fish species, about evaluation of fish and meat freshness, etc., as well as about hygienic rules and documentation of HACCP and SOP systems.

The **Pilot Plant** is modern and equipped satisfactorily for basic teaching purposes in Food Technology. In the Pilot Plant, students can produce sausages themselves supervised by a teacher or technician. The sausages produced are used for other practical classes such as sensory analysis, chemical analysis, etc.

Practical classes in the laboratory such as making sensory analysis of foodstuffs, microbiological examinations of working surfaces and air can give students practical knowledge, which will be necessary during their future job in veterinary inspection.

The Department has also developed some computer programmes for teaching students on line, e.g. a programme for identification of fish species, a programme for identification of mushrooms and for teaching students about beef quartering. These programmes can help students during practical work.

#### **4.5.2 Comments**

- Extramural work is not obligatory in either Food Hygiene or in Food Technology. Students can choose between extramural work on Clinical Sciences or Food Hygiene and clinical work is chosen more often.
- The Department offers some electives on Food Hygiene and Technology but students prefer to choose electives in Clinical Sciences rather than Food Science.
- There is no practical examination at the end of the Food Hygiene, Inspection and Control subject during which students would be able to demonstrate their ability to make such examinations independently. Practical examination of carcasses is a must for every veterinarian working in Food Inspection.
- Classes on Food Technology take place in the 3rd year of study, classes on Food Hygiene and Technology in the 5th year. Students get detailed knowledge about meat processing, meat products and technological processes, but they get less input on how to handle the raw materials and their knowledge of laws on food and meat inspection is limited.
- Because of the possibility which allows students to have six attempts to pass the subject, the Department has many students (sometimes more than 200) attending Food Hygiene, Inspection and Control. For the same reason, they have also too many students attending Food Technology. It causes problems in organizing practical classes, especially when there are only 3 supporting staff members, who prepare practical classes. This creates also an inconvenient situation for teachers, who have to repeat the same classes many times.

#### **4.5.3 Suggestions**

- 4.5.3.1 Obligatory extramural work on Food Hygiene and Food Technology should be introduced into the curriculum to create more opportunities for students to have hands-on contact with post-mortem meat inspection, with food processing and to more familiarize them with inspection work.**
- 4.5.3.2 It is suggested to introduce for each student a practical examination on post-mortem meat inspection in order to really check their practical skills connected with such important procedures.**
- 4.5.3.3 The Department should create for every student the possibility to do meat inspection manually.**
- 4.5.3.4 It is suggested to reverse Food Technology and Food Hygiene. It could be more logical for students and for didactic purpose to teach students at first about hygienic requirements for raw materials, about food laws and after that about hygiene and technology of food processing and food products.**

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

#### **4.6.1 Findings**

The Faculty offers in total 1215 hours of elective courses of each of 45 hours. 270 hours belong to the first cycle, and 45 hours belong to the second cycle.

The first cycle electives (total 270 hours) are:

- analysis and organization of genetic controls
- aquaculture
- beekeeping
- changes in domestic animal behaviour
- extensive livestock systems
- history of veterinary medicine

The second cycle electives (total 945 hours) are:

- applied anatomy of small animals
- applied anatomy of large animals
- the laboratory animal
- exercise physiology
- veterinary oncology
- medical en clinical examination in horses
- veterinary technical management
- the fighting bull
- horse husbandry
- organic livestock farming and native breeds
- new genetic techniques in animal breeding
- organization of breeding schemes
- alternative livestock farming systems
- animal husbandry projects
- livestock farm waste
- feed manufacture and storage technology
- xenobiotic residue in food of animal origin
- fish technology
- meat science and technology
- milk science

Details about the distribution of hours contributed to lectures, seminars, self directed learning, laboratory, non-clinical and clinical work can be found on the pages 88, 89 and 90 of the SER.

In the first cycle students must take 270 hours of electives.

In the second cycle students must take 295 hours of electives. (120 in year 3; 130 in year 4; 45 in year 5)

#### **4.6.2 Comments**

- The electives consist in total of 1215 hours from which 487.5 hours (40.12%) are lectures, 82 (6.75%) seminars, 64 (5.27%) self directed learning, 222 (18.27%) laboratory work, 147.5 (12.14%) non clinical work, 56.5 (4.65%) clinical work, and 155.5 (12.80%) others.
- It is noticeable that the percentage of clinical work is the lowest of all categories offered.

#### **4.6.3 Suggestions**

**4.6.3.1 Although the number of electives offered seems sufficient, the Faculty should offer electives with much more clinical work in the second cycle. This could help to solve the problem stated in chapter 4.4, and could be a basis for a future tracking system.**

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

### **5.1 TEACHING METHODOLOGY**

#### **5.1.1 Findings**

The general organisation of teaching is applied by the Teaching Committee of the FVMC, which is composed equally by staff and students. There seems to be a good teaching environment. Specific learning objectives are clearly stated. Two main types of teaching methods are used: Theoretical training and supervised practical training.

Theoretical lectures are divided into:

- Lectures, given directly by the teachers to two groups of 75 students in the form of 50 minute lessons, with a 5 minute review or summary. Some areas (anatomy and parasitology for example) have developed E- learning teaching aids, atlases, etc. as teaching initiatives.
- Seminars, given in the form of work-shops, monographic sessions or interactive work to groups of 6-75 students, depending on the type of seminars.
- Self-directed learning given in the format of Tutored Work (group study or group work) and Independent Activity (self-study).

Supervised practical training is divided into:

- Laboratory and desk based work which includes classroom practicals (25 to 75 students per group), laboratory practicals (12-25 student per group) and computer work (14-24 students per group)
- Non-clinical hand on animal work with healthy animals or cadavers (from 1 to 24 student per group)
- Clinical hands on exercises on live healthy or sick animals. The number of students per group range from 6 students for clinical practice at the Veterinary Teaching Hospital to 12 students for practical works in diagnostics (e.g. infectious diseases).
- Other teacher-student activities include evaluation of the knowledge of the students and tutorial activities.

Teachers are overall very motivated and dedicated to their teaching work and are, in general, very open and approachable for students. In the lecture room, students are taught primarily by using power-point presentations and given written materials or articles, all available on the Virtual Classroom. The accessibility of internet sources is excellent. PDF files of power-point presentations, lecture notes, practicals, articles are available on the internet and the library or electronic journals are available on the internet.

In many courses a problem-oriented method is used, with, for example, case assignments, in which students work to present cases and to discuss them, using their own power- point presentations in supervised practical work or in seminars. The amount of student time assessed for many of these assignments appeared to be underestimated, since no credit is given for the hours spent in preparation.

A pilot experiment and a lot of teaching projects (many of them awarded by local, regional or central authorities) have been developed to increase the quality of teaching methodology.

The University Quality Unit is responsible for the evaluation of teaching quality in accordance with the Spanish Organic Law on Universities, the Law on University Autonomy and the University Statutes. This method is implemented by the DOCENTIA model developed by the

Spanish National Agency for Quality Assessment and Accreditation (ANECA) and coordinated by the Andalusian Evaluation Agency (AGAE). The model involves students, academic officials, the Vice-Chancellor for quality and evaluation, possibly external evaluators and the Quality Unit of the University. Staff Training Courses are organised to improve the quality of the staff and excellence is rewarded by salary incentives (complementos autonomicos decided at regional level and tramos bonuses decided at national level) based on the DOCENTIA model and taking into account the student evaluation reports and the reports of the Dean and of the Heads of Departments.

There are many student exchange agreements with several European Faculties via the Erasmus/Socrates Programme.

There are several possibilities for specialisation for graduated students, such as Masters or PhD courses, and a residency programmes in equine internal medicine.

When research is implemented in the courses, students do not seem to be aware of this so that contact of students with research is quite limited.

### **5.1.2 Comments**

- There seems to be a good balance between theoretical and practical work. In basic sciences several of the practicals are given as demonstrations or exercise with active participation of the students as a group.
- Extra motivated students can, in many laboratories/clinics, do additional hours within the Faculty supplementary to the regular curriculum, particularly in clinical and professional disciplines.
- During the clinical works, students are actively involved in the clinical cases and have to write reports and obtain feedback on their work.
- Students do not have to write a thesis and only a limited number of them prepare a brief personal work. Students are involved in research activity only on a voluntary basis.

### **5.1.3 Suggestions**

**5.1.3.1 Problem-based learning might be introduced, where conditions permit.**

**5.1.3.2 Students in the last year should be encouraged to write a thesis; a possibility is to implement it in the elective subjects so that a score is obtained for the work that students do.**

## **5.2 EXAMINATIONS**

### **Findings**

Student assessment procedures take into account all activities included in the teaching process, in particular: participation in theoretical and practical classes, course-content related work, mid-term and final practical and theoretical examinations.

Ordinary examination sessions are for one year subjects in June and September, for one-term subjects in February and September. Second chances are in June and September.

Extraordinary sessions take place in December. These sessions are open to students who have failed the examination at the ordinary session or in a previous year. Students can also have a second attempt within the ordinary or extraordinary sessions in exceptional cases.

The Faculty does not have external examiners.

All students are entitled to retake an examination up to six times, but cannot repeat the examination more than twice in any academic year. If students wish to repeat the examination for the sixth time, he/she is obliged to ask for permission from the Faculty Board. In the case of a seventh retake, the examination would be by a jury but special permission is required. The jury must be appointed by the Chancellor with suggestion of the Department Board. The jury cannot include any of the teachers who taught examined students in the academic year in question. The date of such an examination must take place during the examination session.

### **5.2.2 Comments**

- In some cases, students are obliged to pass certain subjects (i.e. “filter” subjects) before taking examination in any subject in the following academic year, for example General Pathology for Medical Pathology.
- There are a large percentage of examination successes (70-80%) after the 1<sup>st</sup> or 2<sup>nd</sup> term.
- Examinations are usually divided into 2 or 3 parts in order to make it more convenient for students and in order to improve a continuing teaching process.
- Examinations on Food Hygiene, Control and Inspection consists of a theoretical partly written form: multiple choice test and presentation work) and of a practical part which consists of practical reports and continuous assessment. There is no practical “hands on” meat inspection.
- According to student opinions, the final score depends mainly on the results of the final examination rather than on evaluation during all the teaching processes.

### **5.2.3 Suggestions**

**5.2.3.1 There is a suggestion obtained from the students that for practical subjects there should be primarily practical examinations.**

**5.2.3.2 An effort should be made to help students (e.g. tutorials) to pass the examinations at first or second attempt in order to minimize the figure of the “off course” students and to abbreviate the mean length of the course or the undergraduate career.**

**5.2.3.3 As in most European Faculties, it would be beneficial to have external examiners.**

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

### **6.1 GENERAL ASPECTS**

#### **6.1.1 Findings**

The FVMC is located on the Rabanales University Campus (463,000 m<sup>2</sup>) very close to the Cordoba city centre (7 min. by train). The 12 Departments of the Faculty are situated in several new, expansive and well equipped buildings (details of the premises in general are reported on pages 156 to 159 of the SER). The Facilities of the Campus also include the

Classroom Block, the Veterinary Teaching Hospital, the Ramon y Cajal Building (Centralized Research and IT Support Services), the Health Building, the Animal Production Pavilion, the Experimental Farm and the Organic Beekeeping Centre. There are also other facilities shared with the other faculties on Campus such as the Lecture-Theatre Block, several Halls, the Central Library, a Residence for Students (Lucano Hall), extensive Sports Facilities indoor and outdoor and the Railway Station. A new Technological Research and Development Park is currently under construction.

### **6.1.2 Comments**

The premises in general are in excellent condition and are generous in space and are easily accessible, both to students and staff. They benefit from being on their own campus out-of-town.

All lecture rooms, laboratories and dissection and necropsy halls are perfectly adequate.

Health and Safety matters were well taken care of.

### **6.1.3 Suggestions**

**None**

## **6.2 CLINICAL FACILITIES & ORGANISATION**

### **6.2.1 Findings**

On the Rabanales campus the University of Cordoba possesses a Veterinary Teaching Hospital. This is an enterprise from which the shares are 100% property of the University.

The veterinary staff of the Hospital is made up of tenured teachers of the Department for Animal Health and Surgery, and contracted private practitioners with the title of associate professor.

Facilities for the horses are satisfactory, which include a long corridor for lameness evaluation, indoor arena, several examination rooms, with video endoscopy, induction area and one surgical suite with state of the art inhalation and anesthesia monitoring equipment. There is an examination room being built for reproductive work in horses, for semen collection (with a phantom mare) and gynaecological work on mares.

Both services (small animal and equine) have ready access to radiography, extremities, ultrasound, suitable for examination of body cavities, cardiac, and probe for imaging of tendons, and probably for reproduction. Both are also in close proximity with shared reception area, and laboratory, and have a common area for journal writing.

There was an ICU for foals (one mare and foal box) and isolation facilities for horses (4 stalls). While there were foot baths available for placement at the entrances, both these rooms could benefit greatly from a double door system allowing change of clothes and footwear in an enclosed entrance before proceeding into the actual isolation rooms. As well, once in the isolation rooms, improved separation of the airspace/floor space is in order to reduce risk of cross infection of patients when several animals are hospitalized in isolation at the same time.

Mobile Clinic: For the VTH they have a horse trailer that is available for owners to bring horses in. The mobile clinic is however run under what appears to be outside the VTH auspices, with leadership of “associate professors”, private practitioners contracted for conducting visits in the field with students, and done in infectious disease, and more general practice ( regulatory work, serology, vaccination, and minor surgical, medical preventive measures.

For the small animal section, the Hospital has a reception area, several consultation and treatment rooms, surgery facilities, diagnostic imaging facilities, and hospitalization and isolation facilities.

The reception of clients is well organized. Most clients make an appointment before they come to the Hospital with their pet. The caseload is approx. 10 cases or more in one day.

The Hospital is dealing with veterinary education, research, and offers services to practitioners. They have a first opinion service, a referral service and a 24 hour emergency service.

Consultation and treatment rooms are sufficiently equipped with all materials that are necessary for a first opinion diagnosis or an intake of a referral case. The consultation rooms have no connection with the computer system which contains the medical data of the animals. This means that students are not able to consult the medical history of a patient whilst a diagnosis or treatment is going on.

There are two surgery rooms with a central service area. Both surgery rooms have all necessary equipment (tables – surgical instruments - anaesthesia – monitoring). A video system allows students to follow surgical operations in a comfortable way.

The hospital has a central sterilization unit for instruments. Firstly, instruments are manually cleaned. After this procedure they are autoclaved. Records on autoclaving procedures are kept. There is no ultrasound cleaning device for the instruments available.

The diagnostic imaging service has two RX-machines (one 150 kV 1000 mAs – the other 150 kV 600 mAs). Development of the X-ray can be digital or traditional with a Gevamic developer. The CT-scan machine was not functioning at the time of the visit. A modern ultrasound machine is equipped with the necessary probes to perform any necessary ultrasonic diagnosis.

A basic ECG unit is available. There is no unit for simultaneous recording of ECG tracks, cardiac murmurs and cardiac ultrasound images.

The hospital has excellent equipment for ophthalmology. This equipment is used by an associated professor who has a specialization in ophthalmology. More than 10 % of the small animal caseload of the hospital is made up of patient with ophthalmological problems.

The regular hospitalization unit for dogs and cats has 24 cages. The design of these cages does not allow adequate cleaning and disinfection. Urine and fluids can flow out of the cages into the central pathway where staff and students walk. The doors of the cages are made of iron which is not resistant to corrosion. There is no high pressure hot water cleaning apparatus available.

The intensive care hospitalization unit has 5 stainless steel cases and 2 incubators. The cages are of the “Shorline” type without possibility of evacuation of urine and fluids. To solve this problem absorbable plastic sheets are used in the cages.

An isolation room for contagious animals is located in the middle of the building. However, animals with infectious diseases must pass through the whole hospital to reach the isolation

area and the isolation room does not fulfill all preventive and sanitary measures necessary for such a facility.

The hospital has a pharmacy where all necessary medicines for the treatment of hospitalized patients are available. Seldom medicines are delivered to clients. After a diagnosis most clients get a prescription for medicines. With this prescription they can obtain the medicine from a local practitioner or a local pharmacy. Record keeping of incoming and outgoing medicines in the hospital pharmacy is adequately done. This stock control system is connected to a central invoicing system. At the end of the treatment the owner of the animal receives a detailed invoice for all services and medicines used. The stock control system has also a warning system for expiration date of the medicines.

There is a central laboratory facility where all common clinical blood and urine analyses are done. A routine hematology and biochemistry blood analysis can be done in 12 minutes. During normal working hours technical staff is operating this laboratory. After working hours the analyses can be performed by residents or veterinary staff. The laboratory has no quality control system and does not undertake work for practitioners around Cordoba.

For more complicated and specialized laboratory services, the hospital cooperates with the Departments of Pathological Anatomy, Infectious Diseases, Parasitology, and Toxicology.

Veterinary staff of the Department of Anatomy offers a physiotherapy service to the hospital. Equipment needed for this service belongs to the Department of Anatomy.

### **6.2.2 Comments**

- The concept of the small animal section of the hospital building does not fit 100% with the daily needs. For a caseload of 10 small animals and 2 large animals in one day, the number of consultation rooms (8) is far too high. Isolation facilities in the middle of the building are also not ideal.
- Some growing fields in small animal medicine (e.g. dentistry and in part cardiology) are not covered, whilst a good ophthalmological service is actually attracting more than 10 % of the caseload.
- One can estimate that attracting more specialists in the small animal clinic will quickly result in a higher caseload. Starting with specialties in fast growing veterinary fields is the easiest way to bring up the caseload and the clinical exposure of students.

### **6.2.3 Suggestions**

**6.2.3.1 Consultation rooms in the veterinary hospital should be equipped with computer terminals linked to the central patient registrations system of the clinic**

**6.2.3.2 An ultrasound cleaner is necessary in the room for sterilization of surgical instruments.**

**6.2.3.3 The hospitalization units for dogs and cat should be refurbished and each cage should have its own evacuation system for fluids and cleaning. All doors must be made of stainless steel.**

**6.2.3.4 The isolation facility for small animals must only be reachable from outside, needs a sanitary entry closet and should not be connected to the central air-conditioning system.**

**6.2.3.5** The laboratory facilities of the hospital should be expanded in order to be able to offer services to the local practitioners.

**6.2.3.6** The hospital should contract associate professors with a specialization in dental and cardiac disease and install a modern dental burr unit and modern instruments for cardiac diagnosis.

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

### **7.1 Findings**

The Department of Anatomy and Pathology has a necropsy and histo-pathological diagnostic service. Cadavers come from the veterinary teaching hospital, the Faculty Farm, private clinics, large farms and the zoo.

Approximately 500 large animals on average are necropsied each year. The number of small animals is approximately 200 per year. The number of rabbits and poultry is 50 (See SER page 183)

The Experimental Farm has at present 19 Iberian pigs (6 weaners, 6 gilts, 6 sows, 1 boar) 3 beef cows, 60 sheep and 50 goats and some horses. These animals are used in the teaching of propaedeutics (see 4.3.1.)

In the Animal Production Department there are 40 goats (goat kids) and 20 rabbits (in metabolic cages). They are used for practical teaching (see 4.3.1.).

40 mini-pigs are in the central experimental animal service. They are used in teaching the handling of animals. In this experimental animal service, there are also about 50 beagle dogs and about 20 cats.

The Faculty has agreements with several farms and companies to guarantee the students a frequent contact with animals. Several hundreds of animals of different species are in these farms.

The Veterinary Teaching Hospital has an average patient flow of over 3,000 small animals and approximately 750 horses per year. Ruminants are seldom presented at the hospital.

Via the mobile clinic service, which is operated by associate professors (local practitioners), students have access to ruminants on many farms. These mobile clinics give the students the opportunity to learn about the field conditions of ambulatory veterinary medicine.

### **7.2 Comments**

- It seems that the teaching hospital has not yet enough recognition as a referral centre.

### **7.3 Suggestions**

**7.3.1** The teaching hospital should expand his specialized services and attract more specialists in order to get more referral cases from the local practitioners.

**7.3.2** The mobile clinic could be expanded by contracting more private practitioners and by offering a 24 hour service where students work in a permanent rotation system.

**7.3.3 The caseload in the small animal section should be supplemented in order to reach the standard size of a small animal hospital in the practice.**

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

### **8.1 Findings**

Full details of the very impressive Maimónides University Library on the Rabanales Campus, which serves the 4 on-site Teaching Establishments, can be found on pages 199 to 210 of the SER. It is centrally located in an extensive, modern 3-storey building on the Campus and offers an amazing range of classical hard-cover books, electronic books and worldwide database search machines as well as Reading Rooms, Computer Rooms, Individual Study Rooms, Group Study Rooms and a Training Room.

There is Wi-Fi throughout the building and has it offers a “Virtual Campus”, which operates 24 hours, 7 days per week. The Veterinary Faculty Buildings all have Wi-Fi, so the Virtual Campus can be accessed by students on their own laptops at any time.

Of the 4 Establishments on Campus, the Veterinary Faculty is the foremost user of the Virtual Campus and it is well on the way to having a complete E-learning system.

On page 206 of the SER, the generous normal and exceptional opening hours are listed

### **8.2 Comments**

- The library facilities are excellent. They are well run but the staffing does not appear to be adequate for such a facility and a further training programme seems to be missing.
- For the size of the library and the volume of its use by staff and students, there are a limited number of access computers, even though much can be accessed via the Virtual Campus and the photocopying possibilities are not adequate.
- On being asked how many Veterinary Students on average use the library physically, the answers came back that, 464 students actually used the building last month, 43,510 hard copy books are available on Veterinary Subjects as well as 1,019 Paper Reviews.
- The Veterinary Faculty Departments mostly have small libraries for use by both students and teachers, which are theoretically controlled by the central library.
- A broad-based electronic library has access to databases and electronic journals throughout the world via the Andalusian University Library Consortium.
- The Virtual Classroom offers the Moodle-based virtual tuition platform for both teachers and students alike. This is used well by the Veterinary Faculty teachers, but is as yet incomplete.

### **8.3 Suggestions**

**8.3.1 Increase the Human Resources to match the facilities and develop a Library Staff Development Training Plan.**

- 8.3.2 Increase the number of access computers and photocopiers to cater for the demands.**
- 8.3.3 Tighten the control of the Central Library on the Veterinary Faculty's Departments Sub-Libraries, so that duplication and limited organization does not inhibit access by students and teachers alike.**
- 8.3.4 Encourage all teaching staff to complete their entries into the Virtual Classroom, so that a complete E-Learning System becomes available to the students.**

## **9. ADMISSION & ENROLMENT**

### **9.1 Findings**

Admission requirements for entering the Veterinary Faculty are established by the Ministry of Education and the Andalusian Regional Government Department of Education. To enrol at the University, the Baccalaureate and passing of the University Entrance Examination (PAAU) are required. There is no additional entrance examination for Veterinary Medicine. Foreign students entering the Faculty are also obliged to pass the University Entrance Examination, mostly through the National Distance Learning University (UNED). Those students who enter the Faculty because of international students exchange programmes and agreements must have already met the university entrance requirements in their own countries but they are also obliged to pass a language test because tuition is given only in Spanish.

Admission to the Faculty of Veterinary Medicine is regulated by a *numerus clausus* system. The maximum number of candidates is fixed every academic year by the University taking into account the number of candidates for one place. For academic year 2008/2009 it was fixed at 150 candidates. Candidates are required to obtain at least university entrance minimum (Baccalaureate- 60%, the University Entrance Examination- 40 %). The minimum required mark for entering the Faculty in academic year 2008/2009 was 6,83% (on scale of 0-10). Admission of first year of Veterinary Medicine tends to be very competitive.

The Faculty is trying to reduce the number of candidates to 120 but this request is denied due to demands of the large Andalusian region. In any case, the annual intake of students has been reduced from 250 to 150 over the past several years. The Faculty does not have the final decision on the number of students entering Veterinary Medicine, it can make proposal only. The recommendation requires approval of the University's Governing Council and ultimately the Andalusian Single District Committee, which has the main influence on the student intake.

### **9.2 Comments**

- Although the number of candidates and the number of undergraduate students is quite high, the Faculty is able to provide correct teaching for this number. All facilities on campus are suitable for such a number of students. Classrooms and laboratories are enough in number and in size to guarantee the normal process of lectures and practicals.
- The drop-out rate at the Faculty is rather low (about 10%). The drop-out includes mainly the students who fail to register for the second year because they have chosen another study or students with financial or personal problems.

- The average duration of studies is rather high, for example for students who graduated in 2007/2008 it was 7.2 years.
- The intake of new students is not strictly linked with the effective national need of veterinarian. Despite this fact, the majority of graduated students are able to find a job within 6 months after graduation. Only a low percentage does not find work or decides to change job completely. The number of unemployed veterinarians in Spain is generally rather low (less than 5 %).

### **9.3 Suggestions**

**9.3.1 It is recommended not to increase the number of students admitted per year.**

**9.3.2 It is suggested that a reduction of the numbers of students who have a high average duration of studies should be achieved by better investigation and understanding of the reasons, which in turn should be avoided.**

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

### **10.1 Findings**

The ratio of teaching staff: students is 1: 8.26, which is acceptable.

The ratio of teaching staff to support staff is 1: 2.17, which is also acceptable

Staff appointments and staffing levels are decided centrally at University level and the Faculty has little control over who is hired.

The percentage of veterinarians on the staff is 88.4% (Total FTE 139.75 vs Vet FTE 123.52).

### **10.2 Comments**

- The support staff number in relation to FTE academic (2,17:1) is at the upper level of the recent range, but, although the support staff indicated they should be more in number, the ratios are within the range for other approved schools. This is not to say that the ratios are “correct” or optimal. On the contrary, the conclusion that can be drawn is that across the board in Veterinary Educational Establishment in Europe, there exists a chronic lack of support staff in general.
- A major concern that came up was the large number of support staff who are “contracted”, i.e. non tenured, working in the University for many years, but lacking employment security and thus having little incentive to devote energies for the longer term improvement of the Faculty.
- Vacant posts do not appear to be filled automatically, so there is an evident need to re-justify the necessity of the position in question.
- Staff are employed for a defined task, but cross-over occurs (apparently of their own willingness to help each other) to assist areas outside their own assigned tasks.
- The FVMC encourages staff to acquire additional skills and training by offering various grants and training stipends and support, which are available to them upon application.

- The teaching staffing is approved after the Department (not Faculty) petitions the University centrally. The office of the Chancellor then decides whether the request for the staff position should be approved, and is also responsible for the advertising and the hiring of a person for the position.
- Non teaching support staff members are civil servants and are also appointed centrally, based on public examination. This system may be to the detriment of the University (FVMC) because it limits the ability to hire highly experienced and technically skilled candidates, whose academic training is not as recent as that of young newly graduated candidates.

### **10.3 Suggestions**

**10.3.1 Although the ratio of support staff to teaching staff appears to be reasonable, an investigation should be made as to the amount of time assigned by young research graduates to tasks, which should be undertaken by support staff. The latter is a loss of valuable research time and where this is found, the in-balance should be rectified. There is a clear need for additional support staff.**

**10.3.2 The FVMC through the Dean should be assigned a decisive part to play in any appointment in order to ensure the suitability of candidates for positions in both teaching and support staff areas.**

## **11. CONTINUING EDUCATION**

### **11.1 Findings**

One of the objectives of the Faculty is offering continuing education and refresher courses for professionals in order to meet local needs.

Each year the Faculty organizes several courses of 10 to 30 hours. Details of these courses can be found on pages 265 to 268 of the SER.

The Faculty also opens its premises for external organizers of Continuing Education. Even larger congresses are organized in the Faculty buildings (see page 268-269 of the SER).

### **11.2 Comments**

- Faculty staff cooperates with the official college of veterinary surgeons and with local veterinary associations
- The Faculty participates in the Andalusian virtual campus. This is a project promoted and funded by the Andalusian Regional Government. Today the topics offered are intended for undergraduate studying, but the platform could in the future be used for Continuing Education of graduated veterinarians.

### **11.3 Suggestions**

**11.3.1 Expanding the virtual campus to topics for Continuing Education would be beneficial for every Andalusian (or Spanish speaking) practitioner.**

## 12. POSTGRADUATE EDUCATION

### 12.1 Findings

Full details of the postgraduate programmes and financial support options are outlined in pages 275 to 286 in the SER.

### 12.2 Comments

- The graduate studies, Master and PhD programmes, appear to be functioning very well, and there are strong links with Latin-American schools (Venezuela, Chile). The FVMC has a nucleus of European Diplomates in the Faculty in a number of key areas. Faculty members in clinical functions, who have a European-level specialty (EBVS) should be encouraged to obtain membership, and undertake residency training programmes at Cordoba, as is already proceeding in several areas ( Pathology, Equine Internal Medicine, Anaesthesiology). There are also 2 Diplomates in the European Veterinary Parasitology College, but despite the strength of this area, there is no existing residency training. A system of giving merit for these efforts, and gaining European Diplomate status, and, in particular, offering residency specialist training programmes should be put in place within the Faculty to encourage and reward these areas.
- The FVMC offers a post graduate course in Animal Protection and Experimentation; essential for those wishing to perform animal research, as well as a wide range of courses geared for the masters programme at post graduate level. Such courses are the key to working in animal experiments, as well as a strong assortment of courses for the Masters programme in many areas.
- The FVMC has what appeared to be a large number of interns. However, the line defining internship was not clear, as the SER also stated that many students perform “internships” externally, but these will not yet have graduated. This definition needs to be clarified. The students not yet having graduated should receive an alternative title (externship, trainee, but NOT intern). The clinic records show 8 interns and one resident, all paid by the hospital, (University). There are also 3 interns designated for the Animal Experimental service preparing practical and clinical teaching, counted in support staff, and 2 interns at the Environmental Service. It is unclear if these 3+2 are veterinary graduates or not. They are all in the VTH and classified as “others”.
- Residencies: The best developed was in the area of Pathology, (8 European Diplomates & 8 residents in training) and Equine Internal Medicine with 2 Diplomates in the FVMC and 1 resident in training. They also have one Faculty member undertaking a “residency” training in anaesthesia (presumably non-conforming). The Faculty is to be commended that this has been successfully completed with university support, in particular whilst this is additional to having the ECVS Diplomate on the staff. The clinical area lacks a broader range of Diplomates (particularly small animals/ diagnostic imaging, clinical pathology). This has a large positive impact on building clinical caseload for teaching (for example, ophthalmology case load approached 20 % of all small animal cases) most probably due to the presence of the Latin-American Diplomate in Veterinary Ophthalmology.
- Eight academic staff are members of the European College of Veterinary Pathologists and have 8 students are undergoing training. It is not clear from the documentation what place these students have in research and teaching, as they receive no special grant. There is also one Diplomate in the European College of Veterinary Surgeons, but no resident training in those areas. The ECVS Diplomate is in the University

Veterinary Teaching Hospital and is supported for her training by the University of Cordoba.

- There is a well described Masters Programme, which is a 60 ECTS credit post graduate training programme, with tracking, for course work, professional training, or research emphasis. There is a wide assortment of courses offered for the masters and it provides the basis for qualifying to enter a PhD programme within the European Union.
- The Doctoral Degree Regulations follow the EHEA regulations laid down on the 30 April 2009.

### **12.3 Suggestions**

#### **12.3.1 Further develop across a broader base of areas the Residency and European Diplomate Programme.**

## **13. RESEARCH**

### **13.1 Findings**

The Departments of the FVMC are well equipped and sufficiently structured to perform research at international level. In general, the various groups of research belonging to the Departments of the FVMC demonstrate a very good level of scientific production, with papers published in international indexed (ISI) journals with a good medium value impact factor. In spite of the good medium level, it is clear that the situation is not homogeneous. In fact there are groups that in the last 5 years have reached a peak of excellence and others that are quite weak. In any case, the involvement of the academic staff in scientific research is also demonstrated by the numerous publications in non-indexed national and international journals and the high number of participation in national and international congresses. Moreover, in almost all the discipline covered by the Faculty, the academic staff published several books or book chapters, both directed at the students and at the scientific community. Many Departments of the FVMC obtain annually or on a long-term basis a significant amount of funding from local, regional or national public and private institutions and companies. Suitable conditions to introduce students to research are in place.

### **13.2 Comments**

- Despite the positive situation, students are not introduced and involved on a regular basis in research activities. This may be due, in part, to the fact that they do not have to acquire credits during their formative process whilst elaborating and producing a thesis before graduation.
- Although several relationships with research groups working abroad are evident, locally a lack of cooperation and collaboration amongst the research group of the Faculty can be identified.
- Every Department has an acceptable number of PhD students, but in some cases junior staffs are not positioned in the best situation to develop their knowledge and projects.

### **13.3 Suggestions**

- 13.3.1 Although the education given by the FVMC is research based and there are good conditions to involve student in research, this point should be significantly improved in order to educate the future veterinary graduate by the Faculty to a scientific-based professional activity.**
- 13.3.2 The FVMC should make every possible effort to support their enthusiastic younger researchers (junior staff) and to offer them the best conditions (funding, period abroad, responsible position in research project, etc.) to reach a high scientific standard and to develop their capabilities rapidly.**
- 13.3.3 A clear strategy to improve collaboration amongst the different groups of research of the faculty should be planned.**

## EXECUTIVE SUMMARY

**Summary Statement:** The EAEVE/FVE Visiting Team found no Category 1 Deficiencies at the Faculty of Veterinary Medicine at the University of Cordoba and confirmed that the requirements set out in EU Directive 2005/36 and EU Regulation 2004/854 are met within the curriculum.

The SER was a genuine base to explore the main aspects that an EAEVE/FVE Team take into account to help Faculties that accept the visitation to check their standards and possibly improve them through selected suggestions.

Several positive aspects emerged during the visit, which consistently fit the SER content. Amongst the most relevant ones, the team stressed the following:

- the friendly atmosphere that is clearly evident in the establishment, mirroring the good relationship between the students and the teaching and support staff;
- the spacious and well equipped Faculty buildings which offer suitable facilities for teaching and research;
- the excellence of the University Library, the Central Research Services and the Sports Centre, which takes care of student welfare on the campus;
- the well developed virtual campus;
- the overall quality assurance system, which is in place and has already been approved by the Andalusian Quality Assurance Organization, a member of ENQA, the European Network on Quality Assurance in Higher Education;
- good enthusiastic Basic Sciences teaching;
- the well organized University Veterinary Hospital and the student involvement;
- the residency programme for veterinary specialization;
- the excellent teaching in Animal Production;
- the well equipped Food Hygiene facilities including the useful Pilot Plant;
- the strengths in many facets of the research field.

There is little doubt that there are some structural and coordination weaknesses that the team felt to be present. Nevertheless, there are some defects that, in the opinion of the visiting team, *must* be corrected and the following primary items are outlined:

1. The most important criticism highlighted by the Team is the lack of coordination in recording clinical “hands-on” experience by each student in order to ensure, that at least a minimum in Day 1 Skills are present at graduation. The hours noted in the SER are certainly insufficient, but the members of the team discovered, that the students are exposed to far more clinical practical hours in actual fact. These clinical practices, in whatever discipline, need to be recorded in one place such as a student record book and confirmed by a teaching staff member.
2. The team suggests that more attention be paid to issues such as veterinary public health, agricultural structures, risk analysis, population dynamics of infection and intoxication, principles and diagnostic applications of modern testing methods. Students must be able to carry out meat inspection by reinforcing practical training in the processing plant.
3. In more general terms, the team recommends that the “stable to table” or “farm to fork” approach to food safety be promoted throughout the various disciplines at several stages of the undergraduate students` education.

4. **Infectious Diseases seem to be incorrectly positioned in the list of disciplines.**
5. **The team addressed the Rector on their concern about the existing shortage of support staff which may adversely affect the quality of practical teaching and academic activities, delivery of services to students, veterinarians and the general public and also research opportunities in the Cordoba Veterinary Faculty.**
6. **The observation has been made, that the Dean has no influence on either the budget or the appointment of personnel and it is suggested that this situation be changed.**

**Despite the above listed suggestions, the Visiting Team did not identify any Category 1 Deficiencies and it will be recommending to ECOVE, the European Committee on Veterinary Education, which is the final decision-maker on Evaluations, that the Faculty of Veterinary Medicine in Cordoba should be added to the EAEVE/FVE "Approved" List.**

## Annex 1 Indicators

Ratio	Numerator/Denominator raw	1/Denominator	Established range of denominators	Notes
R1	139,75/1.154	1/8.26	8.85-10.42	
R2	142,94/1.154	1/8.07	8.75/12.54	
R3	123,52/1.154	1/9.34	10.62-12.62	
R4	123,52/158	1/1.28	4.91-7.21	Good staff ratio
R5	142,94/311	1/2.17	0.53-2.20	
R6	1.875/1.380	1/0.74	0.51-0.36	
R7	407,5/972,5	1/2.38	1.88-2.21	
R8	104/3.450	1/33.17	0.51-7.87	Lectures will reduce as e- learning develops
R9	295/3.450	1/11.69	Still open	
R10	295/30	1/0.10	Still open	
R11	158/310	1/1.96	2.47-1.73	
R12	158/6.513	1/36.04	0.51-7.87	Much external clinical work
R13	158/180	1/1.14	0.20-0.09	
R14	158/741	1/4.69	1.78-0.92	High horse numbers in VCH
R15	158/549	1/3.48	0.58-0.37	High number of cases
R16	158/1995	1/12.63	48.74-37.94	Set low, team found > 3,000 cases p.a.
R17	158/4	1/0.02	0.07-0.02	
R18	158/485	1/3.07	0.75-0.46	Good case load
R19	158/42	1/0.27	0.26-0.12	
R20	158/282	1/1.78	1.26-0.89	

## Annex 2

### Student member report

#### Organisation

The Faculty of Veterinary Medicine is situated on the Rabanales Campus, together with three other Faculties (Agriculture Engineering, Polytechnic Engineering and Science).

The infrastructures that are necessary for the Faculty of Veterinary Medicine are located in several places, sometimes far apart. The students of first and second years attend the lessons in the *Aulario* (the classroom building). The students of the last 3 years have to walk across the Campus to reach the classrooms and laboratories for practical activities which are located in the Department buildings. The *Aulario* is very easy to reach because it is only a few minutes' walk from the train station.

Even if classrooms are quite far from laboratories or other infrastructures, it is easy to get to these points by walking, taking a bike (free use for students) or using the shuttle service.

#### Admission and Enrolment

Students can attend the Faculty of Veterinary Medicine after having passed an examination, because the University has a fixed number of students that can be admitted. Candidates are required to achieve a minimum mark, made up of the Baccalaureate mark (40%) and of the mark of the Entrance Examination (60%).

Also foreign students (coming from other European countries or from other states) can attend the Faculty of Veterinary Medicine, but they have to pass a language examination first, in order to be able to understand correctly the theoretical and the practical lessons.

Obviously there are some exceptions to these rules, in order to guarantee the right to study also of those who have economic or family problems or of those who received a special distinction (students who got highest mark for any subject during the previous academic year).

The final number of students admitted is decided by the Andalusian Regional Government Department of Education and, for the moment, it is fixed at 150 places.

This is obviously a competitive situation for students that want to attend the courses in Veterinary Medicine. In addition to that, it is the only Faculty of Veterinary Medicine in the Andalusian Region.

All these restriction are necessary to select only the students who really want to study Veterinary Medicine and students themselves do not disapprove of the system of Entrance Examination.

#### Student Accommodation, Safety, Union Facilities, Social Programmes and Sports:

Rabanales Campus offers a lot of facilities to students:

- *Residence*: the Lucano Residence can house 250 students. The apartments are composed of 3 or 4 rooms, kitchen, 1 or 2 bathrooms and a closet. In addition to that, there also some garages to keep bicycles inside. As added comfort, it is possible to use washing and dryer machines. There are also a common hall to study and a cafeteria.

- *Sport facilities:* On the Rabanales Campus there are two swimming pools, football and rugby pitches, tennis, paddle tennis and basketball courts. To use these facilities, the students need to pay a small subscription. Teachers can also use these facilities. Students who practice a sport can participate in tournaments and competitions organised by the University of Cordoba, regionally, nationally or internationally.
- *Cafeterias:* in the Rabanales Campus there are 4 cafeterias.
- 
- *Train:* the University of Cordoba has reached an agreement with the national train service (*Renfe*) in order to offer a shuttle train service from the city centre to the Rabanales Campus, all day long till 9.20 PM. The trip takes only 7 minutes and the tickets are very cheap. Also the teachers can take advantage of this service and in this way they can go work without using their car. The University has been trying to promote the use of the train in order to have a less cars on the campus and to preserve the environment as well.
- *Bus:* in order to maintain a constant connection with the city centre there is also a bus service.
- Inside the *Aulario* building, there are a bank, a job placement point, a copy centre and a sports equipment shop.
- 
- *Wi-Fi connection:* Available in all campus building.
- 
- *Moodle platform:* It is the new software to organise the web page of the Faculties accommodated on the Rabanales campus. In addition to that, this computer platform is used to pick up the didactic material for students (Virtual Classroom). It is also useful and used for video conferences.

### **Teaching Methodology:**

The lessons are shared into:

- Theoretical sessions in the classrooms. All the material necessary to attend the lessons and to pass the examinations is on the web site of the Faculty (Virtual Classroom).
- Practical sessions in laboratories, teaching hospital and teaching farm.

Students seemed to be satisfied with the organisation of the teaching methods. They use daily the virtual classroom and they are satisfied also about the level of knowledge of the professors. They think that the practical sessions are very useful to prepare well to complete their aim to have a career as a good veterinarian. They think also that the basic sciences are very important in order to allow a better global knowledge that could be useful not only for the following years of University but also for their personal culture.

### **Teaching Quality and the Assessment Thereof:**

During the semester, students are examined on both theoretical and practical parts of the subject. They are examined 2 or 3 times (it depends on the subject) resulting from the continuous evaluation system. The percentage of success of examinations is very high (about 80%) at first time around because students have acquired adequate knowledge to pass the tests.

To evaluate the practical competences acquired by students, professors are able to submit students to a written examination (e.g.: multiple choice test) or to a practical examination (dealing with the procedures done previously in laboratory).

Thanks to the “informal” relationship between students and teachers, students can speak with teachers in order to improve lectures or organize seminars to improve discussion.

### **Clinical Learning and Hands-on Applications**

Clinical learning is undertaken in the University veterinary Teaching Hospital, which is situated on the Rabanales Campus. The hospital is open every day of the year, 24 hours a day. In this way it is possible for clients to make an appointment for a visit or examination or to bring the animal to the hospital in case of emergency.

The hospital is composed of a large number of visiting room and surgery rooms for dogs and cats but it also includes a dedicated wing for horses and cattle.

Students are involved daily in all hospital activities (visits, surgeries and emergencies) to complete their required practical training.

Students can also improve their practical abilities at the teaching farm and in the Equine Sports Medicine Centre.

Even if a calendar exists to guarantee the proper operation of the training programme, it is not possible to know the actual number of hours reached by students. This is due to the fact that the majority of students voluntarily attend the training activities even if they have just finished their compulsory training. They do that in order to be a good practitioner after graduation.

Amongst the hands-on applications is necessary to remember the didactical and training activities in the slaughterhouses, in order to obtain a professional preparation also in the food hygiene processes.

### **Library:**

The library of Rabanales Campus is situated in a massive building on 3 floors, near the *Aulario* building.

The facilities offered by the library are:

- *Use and rent of books*: the books are classified according to the Universal Decimal Classification. All materials classified under the number “6” are related to scientific subjects. There are a lot of copies of each book that students can take to study at home.
- *Electronic library service with over 150 computers*: Students can access this service using their personal identification cards. Using this facility, students can find books needed and some bibliography given by teachers to improve their preparation for the examinations.
- *Library web site*: This is a useful source of access to all databases and electronic resources.

Students can come to the library when they want, all day long. During the examinations period, to permit to students to have more time to study, the library has longer opening hours than during the rest of the year. They are satisfied by the services offered by the library and they are easily able to find the books they need.

The support staff is qualified and knowledgeable and are always available to help students.

### **Student member basic details**

*Name:* Dr. Cristina Vercelli  
*Date of birth:* 14<sup>th</sup> December 1984  
*University:* Faculty of Veterinary Medicine, University of Turin, Italy.  
*Graduation:* 16<sup>th</sup> July 2008  
*Graduation Grade:* 104/110

*Thesis title:*

Evaluation of the anti-inflammatory and anti-endotoxaemic effects of flunixin, meglumine and ketoprofene in dairy cows, an ex-vivo experiment.

*Actual employment:*

1<sup>st</sup> year PhD student, School of Veterinary Clinical Science, Section of Pharmacology and Toxicology, University of Veterinary Medicine of Turin – Italy-.

*PhD project:*

Study of the endovanilloid system in the breast tumour cancer cells of women and dogs.