Module title: Farm Animals Diseases

Polish Translation: Choroby zwierząt gospodarskich

Faculty: Faculty of Veterinary Medicine

Person in charge of the module: Prof. dr hab. Zdzisław Gajewski

Teachers responsible for laboratory classes, workshops and seminars: Staff and PhD students of the Department of Large Animal Diseases with Clinic

Unit responsible for the module: Department of Large Animal Diseases with Clinic

Module status: a) mandatory / elective
b) stage JM year 4
c) intramural

Teaching cycle: Semester: winter / summer

Module language: English

Objectives of the module:
Program includes lectures and practical exercises from farm animal reproduction, surgery, internal and infectious diseases. During the course students gain knowledge and practical abilities from all four disciplines. Program of the course includes presentation and use of diagnostics and treatment methods of most common internal, surgical, infectious, reproductive tract diseases and disorders. The aim is to provide knowledge on the aetiology and pathogenesis of farm animal diseases requiring surgical, internal or obstetrical treatment, perform clinical diagnosis and examination and apply proper therapeutical procedures.

Teaching forms and number of hours:

- a) Lectures: 105 h
- b) Practicals: 129 h
- c) Field exercises: 21 h

Teaching methods:
Oral presentation with audio-visual techniques e.g. videos, 3D animated visualization or other multimedia presentations with practical training on isolated organs and phantoms, training in the diagnosis and therapy of diseases in slaughter-houses and clinics, flocks and studs, on university owned teaching mares, clinical patients and production animals. Part of the course is conducted with the use of multimedia techniques, e.g. computer programs, videos and computer presentations.

Detailed module description:

LECTURES

Reproduction:
4. Physiology and pathology of parturition. Endocrine profile of the last days of pregnancy and parturition in domestic animals. Species differences that may change the type of therapy during this period. Overview of the progesterone block theory and adrenergic participation in the course of parturition. Effect of stimulation and blocking of alpha and beta receptors of this system and clinical aspects of drug’s action on the adrenergic system in clinical practice. Pharmacological actions to prevent preterm birth. The most frequent delivery obstacles from the mother, foetus, foetal membranes and umbilical cord. Pathophysiology and therapy of reproductive system’s damage during parturition. Principles of surgical and pharmacological treatment of these problems.
5. Pathology of postpartum period. Changes in the endocrine profile in the course of post-natal period. Mechanism, process and abnormal involution of uterus in the postnatal period. Observation of changes occurring in the ovaries in the course of postnatal period as one of the methods to assess endocrine changes. Methods of prevention and metaphylactly used in domestic animals. Clinical evaluation of changes occurring and the completion of postnatal period.
Determination of mating period.
7. Fertility disorders in cows (abnormal reproductive function), uterus, ovaries and fallopian tubes disease.
8. Rhythm and intensity disorders of the oestrous cycle.
10. Infectious causes of infertility. Effect of nutrition on farm animals’ fertility.
12. Resistance of mammary gland in domestic animals. Humoral and cellular immunity. The importance of immunological factors in the prevention of mastitis. Discussion of the differences in levels of immunoglobulin’s in colostrum and milk in various animal species.

Infectious Diseases:
4. Aujeszky disease, porcine enteroviral encephalomyelitis - aetiology, pathogenesis, epidemiology, diagnosis and control.
5. Porcine pleuropneumonia, streptococcosis, porcine reproductive & respiratory syndrome (PRRS), paroviroisis, SMEDI (stillbirth, mummification, embryonic death, and infertility) syndrome – aetiology, pathogenesis, epidemiology, diagnosis and control.
6. Tuberculosis in cattle and other animal species – aetiology, pathogenesis, epidemiology, diagnosis and control. Tuberculosis as a zoonotic disease.
9. Food and mouth disease in cattle and other animal species – aetiology, pathogenesis, epidemiology, diagnosis and control.
11. Clostridial diseases in sheep, listeriosis in sheep and other animal species – aetiology, pathogenesis, epidemiology, diagnosis and control. Listeriosis as a zoonotic disease, Maedi-Visna disease, ovine pulmonary adenomatosis, border disease – aetiology, pathogenesis, epidemiology, diagnosis and control.
12. Chloramphenicol chloramphenicol in animals, looping-ill, Q fever – aetiology, pathogenesis, epidemiology, diagnosis and control. Foot-rot in sheep, poxvirus infections in animals and bovine viral mummilitis - aetiology, pathogenesis, epidemiology, diagnosis and control.
13. Main diseases in goats: aetiology, pathogenesis, epidemiology, diagnosis and control.

Surgery:
1. General information about the subject
2. History of the farm animals
3. Restraint techniques
4. Elements of anaesthesia
5. Castration
6. Dehorning and disbudding
7. Claw trimming
8. Lameness in cattle (2 lectures)
9. Displacement of abomasum (2 lectures)
10. Reticuloperitonitis
11. Rumenotomy
12. Oesophagus obstruction

Internal medicine:
1. Dermatology (2 lectures)
2. Diseases of respiratory system
3. Diseases of gastrointestinal system (3 lectures)
4. Cardiology
5. Diseases of urinary system
6. Diseases of nervous system (2 lectures)
7. Metabolic diseases (4 lectures)
8. Paediatrics

PRACTICALS

Reproduction:
1. Morphological assessment of the reproductive organs in the non-pregnant and pregnant farm animals’ females. The reproductive organs in farm animals – clinical examination techniques, e.g. rectal palpation, vaginal examination. The reproductive organs in farm animals – the clinical examination techniques in practice. Isolated reproductive tract – clinical examination techniques in practice.
4. Propaedeutic and Reproduction Physiology. Uncomplicated parturition progress, i.e. delivery stages, intra-uterine location of the foetus. The fundamental principles of parturition assistance in farm animals. Obstetric manoeuvres, retropulsion, extension, traction, rotation.
5. The complicated birth in cows and its clinical diagnosis. The assisted parturition with the wrong position and proportion of the foetus. Basic equipment required to complete an assisted parturition. The practical presentation on dummies. The fundamental principles of assisted parturition per vaginam in farm animals. Obstetrical equipment. Total and partial foetotomy. Movie demonstration of foetotomy and caesarean section in cattle.
10. The postpartum period disorders – diagnosis and treatment in different farm animal species. Reproductive health programs for dairy herds. Analysis of records for assessment of reproductive performance – computer software in clinical practice, the analysis of fertility in the herds based on selected requirements, work organization for veterinary doctors involved in herd reproduction.
11. Basic gynaecological procedures and reproductive tract examination in different farm animal species – practical class.
12. Udder and mammary gland morphology and its suitability for mechanical milking, preparation of cows and udder for mechanical milking, milking hygiene. Mechanical milking machines –
construction details, principles of operation. Mechanical milking procedures, mamma affects and mammary gland diseases. Inflammatory diseases and infections of the udder and their laboratory detection methods (milk samples, their storage and transport, microbial cultures management, identification and antibiotic sensitivity). Diagnostic kits management in clinical practice. Inflammatory disorders of the udder and their laboratory detection (passive inflammation indicators, including determination of somatic cells proportion, milk pH, serum albumin, lactose, chloride, electric conductivity, activity of N-acetyl-beta-D-glukosaminidase).


14. Basic surgical procedures on the udder in cattle and small ruminants – different surgical techniques, udder amputation, surgical treatment methods for mammas. The mastitis treatment methods and techniques in cows and helves during the perinatal period.

**Infectious Diseases:**
2. Erisipelas, pasteurellosis, infectious diseases of gastrointestinal tract, infectious diseases of skin and diseases causing motion disruption – diagnosis and management.
3. Infectious diseases of respiratory tract – diagnosis and management.
4. Infectious diseases causing reproduction disorders – diagnosis and management.
5. Aujeszky disease and other infectious neurologic diseases – diagnosis and management.
7. Tuberculosis test.
8. Diagnosis and control of bovine brucellosis.
9. Enzootic bronchopneumonia and IBR/IPV, alimentary tract infectious diseases in cattle, enzootic bovine leukaemia, foot and mouth disease, neurological infectious diseases in cattle.
10. Differential diagnosis and control of clostridia diseases in small ruminants.
12. Diagnosis and control of listeriosis in small ruminants.
13. Differential diagnosis and control of other neurological diseases and respiratory tract infectious diseases in small ruminants.
14. Differential diagnosis and control of contagious ecthyma, foot-rot, other diseases causing lameness and infectious abortions in small ruminants.

**Surgery:**
1. Castration of the ruminants and pigs
2. Common surgical procedures of the bovine foot.
3. Claw diseases
4. Dehorning and disbudding
5. Displacement of abomasum (video)

**Internal Medicine:**
Block No 1
1.1. Dermatology – diagnosis and treatment of selected non-infectious and allergic diseases
1.2. Differential diagnosis and therapy of diseases of upper and lower respiratory tract in farm animals
1.3. Cardiology – diagnosis and treatment of selected non-infectious and allergic diseases
Block No 2
2.1. Diseases of gastrointestinal tract diagnosis and therapy of selected diseases in farm animals.
2.2. Influence of nutrition on milk quality
Block No 3
3.1. Metabolic diseases – diagnosis and therapy of selected diseases in farm animals.
Block No 4
4.1. Urinary tract diseases – diagnosis and therapy of selected diseases in farm animals.
4.2. Nervous system diseases – diagnosis and therapy of selected diseases in farm animals.
4.3. Neonatology

**Formal prerequisites**
Animal physiology modules 1-2, Animal anatomy modules 1-2, Histology and embryology modules 1-2, Veterinary pharmacology modules 1-2, Pathomorphology modules 1-2, Diagnostic imaging, Clinical and laboratory diagnostics modules 1-2, General surgery and anesthesiology, Veterinary epidemiology, Parasitology and invasiology modules 1-2, Immunology, Biochemistry modules 1-2, Veterinary microbiology modules 1-2

**Initial requirements**
Student should have holistic knowledge and ability to connect and extrapolate previously learned topics into coherent ideas regarding prevention, diagnosis, therapy and management of animal conditions
Quantitative summary of the module:

<table>
<thead>
<tr>
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<tr>
<td>01 - executes anamnesis with the aim of gathering detailed information about single animal, stud and their environment</td>
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<td>02 - executes clinical examination with the focus on reproductive tract, musculoskeletal system, digestive tract, urogenital system, respiratory system both manually and with the use of appropriate additional methods e.g. instruments and utensils</td>
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<td>03 - knows proper methods and instruments to diagnose infectious diseases, reproductive tract disorders, internal diseases, and disorders requiring surgical intervention</td>
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Assessment methods:

- Practicals: oral/written, theory/practice tests from classes.
- Lectures: oral/written exam and practical exam.

Formal documentation of the learning outcome:

- Signed test and exam papers, student’s assessment record, grade in eHMS.

Elements impelling final grade:

- Practicals: written tests 50%, oral test: 50%. Lectures: practical exam 20%, theoretical exam: 80%.

Teaching base:

- The didactic part of the classes and workshops will be conducted in classrooms of the Department of Large Animal Diseases in the Clinic in Wolica and in classrooms of the Faculty of Veterinary Medicine, practical courses in the management of farm animal reproduction and reproductive disorders are conducted in the Equine Clinic (Campus Wolica) and during field trips off campus.

Obligatory and supportive materials:

- Textbooks:
- Journals:

Annotations:

- Estimated number of work hours per student (contact and self-study) essential to achieve presumed learning outcomes of the module - base for quantifying ECTS:
  - 375 h

Total ECTS points, accumulated by students during contact learning:

- 10 ECTS

Total ECTS points, accumulated by student during practical classes (laboratories, projects, seminars, etc.):

- 6 ECTS

Learning outcomes of the module relative to the learning outcomes of the subject:

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<td>W_NK3, W_NK4, W_NK7</td>
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<td>04</td>
<td>WW_NP10, WW_NP12, U_OUZ3, U_PUZ10</td>
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<td>05</td>
<td>prepares evidence and documentation; uses existing files correlated with heard health, animal welfare and herd productivity</td>
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<td>creates clear documentation of clinical cases according to current legal regulations in the form that can be easily understood by other veterinarians or owners</td>
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<td>07</td>
<td>knows procedures in case of infectious diseases outbreak and when animal is suspected of notifiable infectious disease</td>
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