Syllabus

THE MAMMARY GLAND OF DOMESTIC ANIMALS - 73813

Last update 23-02-2014

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: animal science- international program

Academic year: 1

Semester: 2nd Semester

Teaching Languages: english

Campus: Rehovot

Course/Module Coordinator: Dr. Sameer Mabjeesh

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Coordinator Office Hours: By appointment via Division for International Studies

Teaching Staff:
Dr. Sameer Mabjeesh
Dr. Avi Shamay
Course/Module description:
This course will deal with the mammary anatomy and milk production. Comparative anatomy and physiology of the mammary gland of different species will be discussed. Basic histology of parenchyma and cellular organization of the mammary epithelial cell. Mamogenesis and lactogenesis will studied in details and special emphasis will be addressed on milk and milk components synthesis and secretion. Milking parlors: mechanics and strategies will be discussed. The dry period, importance and dynamic of the lactation curve will be studied as well. Milking frequency i.e. 2, 3, and 4 times daily: What is the best for the farmer? Applications of Genetic Engineering. Mastitis control in intensive farming; Inflammation of the udder versus udder edema. Drying-off: A strategy or physiology?
Laboratory: will include udder anatomy and blood vessels of the bovine and caprine species.
Tour: Dairy cows farm: Agriculture Research organization the Volcany institute.
Heifers raising: replacements cows.
Israeli milking parlor tour.

Course/Module aims:
To learn on the mammary anatomy and milk production. Comparative anatomy and physiology of the mammary gland of different species will be discussed. To learn basic histology of parenchyma and cellular organization of the mammary epithelial cells. Mamogenesis and lactogenesis will studied in details and special emphasis will be addressed on milk and milk components synthesis and secretion. To learn on different aspect in milking. Applications of Genetic Engineering. The laboratory will include udder anatomy and blood vessels of the bovine and caprine species.
Tour: Dairy cows farm: Agriculture Research organization the Volcany institute.
Heifers raising: replacements cows.

Learning outcomes - On successful completion of this module, students should be able to:
- Describe mammary comparative anatomy and physiology of the mammary gland of different species.
- Point out basic histology of parenchyma and cellular organization of the mammary gland epithelial cells
- Describe mamogenesis and lactogenesis in dairy farm animals
- Describe the mechanics of common milk parlors
- Describe the importance and dynamics of dry period
- Outline differences between drying strategies
- Master the milk curve physiology
Point out what is the best for the farmer; profits and genetics engineering vs. animal welfare
Assess health problems and control mastitis

Attendance requirements(%):

100

Teaching arrangement and method of instruction: 11 × 2hr lectures, 2 × 2hr anatomy and practical, and 1 × 2hr tour.

Course/Module Content:

- Introduction to the mammary gland and milk production. Comparative anatomy and physiology of the mammary gland of different species.
- General anatomy of bovine and caprine udder. Blood supply and lymphatic network. Basic histology of parenchyma and cellular organization of the mammary epithelial cell.
- Mamogenesis: mammary gland development.
- Lactogenesis: Hormonal control.
- Milk components: synthesis and secretion: Fat
- The dry period, importance and dynamic. Different strategies and beliefs.
- Milking parlors: mechanics and strategies.
- Mastitis control in intensive farming. Inflammation of the udder versus udder edema.
- Milking frequency i.e. 2,3, and 4 times daily. What is the best for the farmer?? Lactation curve: Characteristics and factors affecting it. Applications of Genetic Engineering.
- Drying-off: A strategy or physiology? Is it normal and healthy management?? or natural phenomenon of milk withdraw. Comparative methods: natural or induced dry off management in intensive farming.
- Laboratory: Udder anatomy and blood vessels: bovine
- Laboratory: Udder anatomy and blood vessels: caprine
- Israeli milking parlor tour.

Required Reading:
Additional Reading Material:

Mastitis Control in Dairy Herds. 2nd edition. by Roger Blowey and Peter Edmondson. 2010.
Mastitis Control: From Science to Practice, Proceedings of International Conference 30 September - 2 October 2008 the Hague, the Netherlands T. J. G. M. Lam.


Course/Module evaluation:
End of year written/oral examination 100 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
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