Sveučilište u Zagrebu Agronomski fakultet
Svetošimunska cesta 25, 10000 Zagreb
Telefon: +385 (0)1 2393 777
E-mail: dekanat@agr.hr
Web: www.agr.unizg.hr

Cattle using and breeding (296562)

Nositelj kolegija

prof. dr. sc. Ante Ivanković

Opis kolegija

This course will give insight into economic value of cattle breeding in Europe and Croatia. Briefly will be mentioned evolution and domestication of cattle and insight into some breeds of cattle will be given. Separate chapter will cover cattle physiology, anatomy and myology with special overview on digestion, growth and milk synthesis. Special attention will be given to dairy cattle breeds, beef breeds and autochthonous breeds. In separate section will be emphasized reproductive characteristics of cattle. One chapter will cover technology of milk production, emphasizing nutrition, housing and management of dairy farms. Attention will be given to metabolic disorders that often occur in intensive dairy and beef production systems. In a separate teaching unit will be clarified basic technology of beef production. Also, a technology of traditional and organic production of cow's milk and beef meat will be presented to students. Lastly, the course will cover some basic terms considering selection in cattle breeding (progeny and performance test), breeding methods and programs. During this course students will visit two farms within field work.

ECTS: **6.00**

Sati nastave: 60
Predavanja: 34
Vježbe u praktikumu: 18
Seminar: 4
Terenske vježbe: 4

Izvođač predavanja

- izv. prof. dr. sc. Nikolina Kelava Ugarković

Izvođač vježbi

- prof. dr. sc. Jelena Ramljak

Ocjenjivanje

Dovoljan (2): 60-69 %
Dobar (3): 70-79 %
Vrlo dobar (4): 80-89 %
Izvrstan (5): 90-100 %

Vrsta kolegija

- Undergraduate studies / BS Courses taught in English (Izborni kolegij, 2. semestar, 1. godina)

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Opće kompetencije

Upon successful completion of the course students will be able to independently conduct management of cattle production, have knowledge about anatomic and physiologic features of cattle, be able to adequately chose cattle breed in regard to production orientation, can lead breeding (selection) process in cattle herds. They will be qualified to use modern production technologies and methods of cattle breeding, acquire leadership skills for management in milk and beef farms in conventional and organic production. Also, students will be able to integrate new theoretical and practical knowledge's in the aim of raising the level of efficiency in cattle production. Also, they will get knowledge about animal welfare and environmental protection.

Oblici nastave

- Lectures
  (theme - economic, social and environmental position of cattle production in Croatia, in the Europe and in the world / anatomy of cattle (skeleton, muscles, digestive system, udder, behavior of cattle) / anatomy and physiology of cattle growth / domestication of cattle / breeds of cattle (milk, beef, autochthonous, exotic) / reproduction of cattle (reproduction system, methodology, insemination, pregnancy, calving, breeding of young animals) / technologies of milk production / technologies of beef production / feeding of cattle / housing of cattle / law and welfare standards in cattle production / management of milk and beef farm)
- Auditory Exercises
  (theme - recognition and description of cattle breeds / linear scoring of milk, beef and autochthonous cattle breeds / method for calculating reproduction efficiency in the herd / model for calculating the ratio of cows and young animals in milking herds / model for calculating the ratio of animals in beef herds / organization of milk or beef farm (buildings and equipment) / breeding value of cows and bulls in breeding strategy.
- Seminars
  (theme – current situation in milk and beef production sector, breeds for milk and meat production, comparison of production technologies in different European countries).

Ishodi učenja i način provjere

Ishod učenja	Način provjere
Be able to identify and explain specificities, economic and environmental position of dairy and beef farming in agricultural production	Discussions, colloquium , written and oral exam, seminar work
Be able to identify and describe the most important cattle breeds in Europe and World	Discussions, colloquium , written and oral exam, seminar work
Be able to explain the anatomical and physiological characteristics of cattle as ruminants, milking animals, process of tissue and body growth	Discussions, colloquium , written and oral exam, seminar work
Be able to manage work related to improving of cattle reproduction	Discussions, colloquium , written and oral exam, seminar work
Be able to identify and explain the modern technology of dairy and beef production	Discussions, colloquium , written and oral exam, seminar work
Be able to independently organize and lead work on modern, traditional or organic dairy farms	Discussions, colloquium , written and oral exam, seminar work
Be able to independently organize and lead work on modern, traditional or organic beef farms	Discussions, colloquium , written and oral exam, seminar work
Be able to recognize and explain technology, welfare standards, health and other requirements in sustainable (effective) cattle production, identify production indicators, limitations and risk.	Discussions, colloquium , written and oral exam, seminar work

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Način rada

Obveze nastavnika

Present intended program of lectures in a simple and understandable way. Carry out the planned program of field exercises. Assign themes of seminars and assist students in their preparation. Assess the extent to which students have adopted educational objectives and achieve the learning outcomes and therefore grade students combining written and oral assessment (grades from insufficient (1) to excellent (5).

Obveze studenta

Attend a planned program of lectures and adopt intended knowledge by program. Actively participate in the discussion during lectures, exercises, seiner papers. Prepare and present the assigned topics of seminar papers. Take the partial exams or a final written exam as a condition for taking the oral final exam.

Polaganje ispita

Elementi praćenja	Maksimalno bodova ili udio u ocjeni	Bodovna skala ocjena	Ocjena	Broj sati izravne nastave	Ukupni broj sati rada prosječnog studenta	ECTS bodovi
Lectures				34	34	1.2
Exercises				22	22	0.8
Seminar	10 %			4	16	0.4
Written Test 1	25 %	0-59 % 60-70 % 71-80 % 81-90 % 91-100 %	Nedovoljan (1) Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)		30	1.1
Written Test 2	25 %	0-59 % 60-70 % 71-80 % 81-90 % 91-100 %	Nedovoljan (1) Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)		30	1.1
Final oral exam	30 %	0-59 % 60-70 % 71-80 % 81-90 % 91-100 %	Nedovoljan (1) Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)		48	1.2
Total	100 %			60	180	6

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Elementi praćenja	Opis	Rok	Nadoknada
Seminar	Subjective estimation of teacher		
Written Test 2	The second written test includes material from the second part of teaching (technologies of beef production; nutrition of cattle; buildings and equipment on farm; management on farm; animal welfare).	15th week	Enabled one correction of negative mark through additional test.
Final oral exam	Is consisted from 10 to 15 questions from each chapter.	Examination dates	

Tjedni plan nastave

1. Actual status and trends in milk and beef cattle production in Croatia, Europe and the world / special features of cattle as species and ruminants, cattle and related species.
2. Autochthonous breeds of cattle / milk breeds of cattle / beef breeds of cattle / dual-purpose breeds of cattle / choosing of adequate breeds for milk, beef, organic or other type of production.
3. Anatomy and physiology of cattle / development and growth of cattle / digestion tract – rumination / anatomy and physiology of udder / body conformation scoring.
4. Cattle reproduction / anatomy of reproduction system / insemination / pregnancy / calving / breeding of young animals / breeding strategy in herds / breeding programs.
5. Breeding of calf and heifers for milk production / breeding calf for beef production / breeding programs.
6. Technologies of milk production / milk and milk synthesis in udder / milking of cattle / persistency of lactation / control of quantity and quality milk production.
7. Dry period of milking cows / feeding of milking cows / health care of milking cows / mastitis and metabolic disorders / organic milk production / calculating of indicators of milk production efficiency.
8. Technologies of beef production / fattening of calf / fattening of heifers / fattening of bulls / fattening of cattle / fattening of oxen / ‘’cow-calf’’ system of production.
9. Efficiency indicators of beef production / scoring of live beef animals / carcasses scoring on the line in slaughterhouse / indicators of beef quality.
10. Cattle nutrition / milking farm / beef farm / daily (weekly, monthly, yearly) requirements of cattle on feed / composing of food ratio for different cattle category regarding age and sex / voluminous roughage and concentrate.
11. Buildings of milking farm / equipment on milking farm/ buildings of beef farm / equipment on beef farm/ organization of farm.
12. Management of milk farms / conventional milk production / organic milk production / traditional milk production.
13. Management of beef farms / conventional beef production / organic beef production / traditional beef production.
14. Welfare of cattle on milk and beef farm / milk and beef safety and traceability / environment protection / protection of humans and animals in everyday interaction.
15. Selected topics (chapters) from cattle using and breeding / seminar presentation / discussion on topic themes.

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Obvezna literatura

1. Cunningham M., Latour M.A., Acker D. (2005): Animal Science and Industry. Pearson
2. Phillips C.J.C. (2000): Principles of Cattle Production. CABI Publishing
3. Perry T.W., Cecava M.J. (1995): Beef Cattle feeding and nutrition. Academic Press INC.
4. Allen D., Kilkenny B. (1980): Planed Beef Production. Granada Publishing
5. Brand A., Noordhuizen J.P.T.M., Schukken Y.H. (2001): Heard health and Production management in Dairy Practice. Wageningen Pers, The Netherlands
6. Ivanković A. (2015): Presentation prepared for these courses

Preporučena literatura

1. Chamberlain A.T., Wilkinson J.M. (1996): Feeding the Dairy Cow. Chalcombe Publications.
2. Albright J.L. Arave C.W. (1997): The Behaviour of Cattle. CAB International
3. Hiemstra S.J., De Haas Y., Mäki-Tanila A., Gandini G. (2010): Local cattle breeds in Europe. Wageningen Academic Publishers, The Netherlands.
4. Group of authors (2011): Green book of Indigenous breeds of Croatia.

Sličan kolegij na srodnim sveučilištima

- Cattle Production; Agriculture - Animal Production; Biotehniška fakulteta Univerze u Ljubljani
- Milchwirtschaft; Universität für Bodenkultur Wien

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