Sveučilište u Zagrebu Agronomski fakultet
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Forage Crops (152066)

Nositelj predmeta

prof. dr. sc. Dubravko Maćešić

Opis predmeta

Module Forage Crops acquire knowledge of most important forages grown on plough-fields: tuber-rooted plants, cereals, annual and perennial forage legumes, grasses and their mixtures, brassicas etc., their morphology and botanical characteristics and importance in agriculture production. Students will have sufficient knowledge in forage crop establishment, protection, fertilisation, production, utilisation in different agro ecological conditions and equipped potentials, finding different ways to satisfy farmer needs on herbage, hay, silage and grains. The emphasise is on forage quantity and quality. High quality forages are the most economical source of the essential nutrients for cattle and other domestic animals. High quality forage is one that is palatable, (consumed in large amounts), digestible (capable of supplying large amounts of nutrients) and contains the proper balance of needed.

ECTS: **6.00**

E-učenje: **R1**

Sati nastave: 60
Predavanja: 26
Vježbe u praktikumu: 28
Seminar: 6

Izvođač predavanja

- prof. dr. sc. Dubravko Maćešić
- prof. dr. sc. Darko Uher
- prof. dr. sc. Željko Jukić

Izvođač vježbi

- prof. dr. sc. Dubravko Maćešić
- prof. dr. sc. Darko Uher

Ocjenjivanje

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

Vrsta predmeta

- Graduate studies / MS Courses taught in English (Izborni predmet, 1. semestar, 1. godina)

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Oblici nastave

- Lectures
- Practicum
- Field work
- Seminars

Tjedni plan nastave

1. Modern concepts for forage crop management and various programs of forage production L - Managing forage resources, differences in the level of forage production, efficiency and profitability of forage production for the various categories of domestic animals.
2. Physiology of forage production. Forage crops for meat and dairy cattle, horses, sheep, goats L - Climatic conditions largely determine the adaptation of different forage crops in the different land areas of production, which is important for the yield formation. The influence of light, temperature, water content, carbohydrates and hormones on dry matter yield. Contemporary models of forage production for meat and dairy cattle, horses, sheep and goats.
3. Short-term forage crops, Root and Tuber Crops L - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of fodder beet, kohlrabi and fodder carrot.
4. Winter and spring cereals and legumes. Mixtures of cereals and grain legumes for forage L, P - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of cereals and legumes (barley, rye, triticale, wheat, oats, peas, vetch and their mixtures).
5. Winter, spring and subsequent crops of the family of grasses and forage crops from other families P - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of ryegrass, fescue, meadow grass, sorghum, Sudan grass, forage brassicas, fodder kale.
6. Small grain legumes. Forages and the environment . L - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of alfalfa, red, white, clover, hybrid, strawberry, crimson clover, birdsfoot trefoil. Influence of forage on air quality, soil improvement, energy inputs, enhancement of wildlife, soil conservation and water quality.
7. Clover-grass mixtures on arable land P - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of clover-grass mixtures on arable land.
8. Clover-grass mixtures on arable land. Testing of soil and the basic factors of soil fertility, and seed quality. Inoculation of legume seeds. P - Basic cultural practices farming (crop rotation, tillage, seeding, fertilization, crop maintenance, protection from diseases, pests and weeds) and utilization of clover-grass mixtures on arable land. Periodically testing soils and recommendations for improving soil fertility may increase forage production. Seed quality traits. Inoculation of legume seeds.
9. Testing of soil and the basic factors of soil fertility, and seed quality. Inoculation of legume seeds. Forage quality. P - Periodically testing soils and recommendations for improving soil fertility may increase forage production. Seed quality traits. Inoculation of legume seeds. Palatability, digestibility, feed composition, protein, energy. Factors affecting the quality of forage (plant species, plant parts, stage of maturity, etc.) Measurement methods of forage quality.
10. Field work T - Visiting experimental plots with different forages at the Faculty of Agriculture University of Zagreb “Maksimir” and “Sljeme” experimental stations.
11. Minimizing stored feed requirements L - Reduction of losses and storage costs of forage.

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12. Minimizing stored feed requirements. Hay storage, silage production and feeding. L - Reduction of losses and storage costs of forage. Imporatant factors in hay storage, silage production and feeding.
13. Hay storage, silage production and feeding. Seminar: Modern methods of production and forage management for various purposes. L, S - Imporatant factors in hay storage, silage production and feeding. Each student will have to make a seminar with project solutions in production of high-quality biomass in the form of green mass, hay, haylage, silage and concentrates.
14. Seminar: Modern methods of production and forage management for various purposes S - Each student will have to make a seminar with project solutions in production of high-quality biomass in the form of green mass, hay, haylage, silage and concentrates.
15. Field work T - Visiting experimental plots with different forages at the Faculty of Agriculture University of Zagreb “Maksimir” and “Sljeme” experimental stations.

Obvezna literatura

1. Ball. D., Hoveland, C. and Lacefield, G. 2002. Southern forages. PPI. USA
2. Ball, D.1999. Practical forage concepts. Alabama. USA.
3. Carlier, L., Puia, I. and Rotar, I. 1998. For a better grass production.Cluj-Napoca. Ro.
4. Fahey, G. (urednik) 1994. Forage quality, evaluation and utilisation. ASA. USA.
5. Hanson, A.A. et.al. 1988 Alfalfa and alfalfa Improvement. ASA, CSSA and SSSA.

Preporučena literatura

1. ACS journal
2. Grass and Forage Science Journal – official journal of BGS and EGF.
3. Crop Science journal
4. Agronomy Journal