

Agricultural conservative systems (2nd YEAR, 1st SEMESTER)

Credit value (ECTS) 3

Course category

Domain (Imposed)

Optional

Course holder:

Prof. PhD. Costică AILINCĂI

Objectives / competencies:

The discipline “Conservative Systems of Agriculture”, in accordance with the analytical program, has the following objectives:

- Formation of practical knowledge regarding the establishment of indices for enhancing the production capacity of agricultural lands;
- Knowledge of measures to increase the productive potential of low productive and unproductive soils, improving soil tillage systems for different climatic conditions, differentiated agricultural technique.

Content (syllabus)

Course (chapters / subchapters)
1. Objectives and role of conservative agriculture systems 1.1. Sustainable agriculture system 1.2. Precision farming system
The impact of conservative agricultural systems on soil fertility 2.1. The main indicators for assessing soil fertility and their importance in agricultural technological systems 2.2. Dynamics of the main physical and chemical properties of the soil due to the application of technological systems 2.3. Soil quality status and land suitability for conservation systems and other conditions necessary for their implementation at farm level
Conditions that are necessary for the adoption and introduction of conservative agriculture 3.1. General ecopedological requirements for the application of conservative systems 3.2. Agricultural machinery and equipment, soil characteristics, integrated control of diseases, pests and weeds 3.3. Plant residue management and weed, disease and pest control in the conservation agriculture system
Cultivation methods used in conservative agriculture systems 4.1. Reduced tillage system and direct sowing in stubble 4.2. Organization of the territory and crop rotations 4.3. Soil fertilization systems
The impact of conservative agriculture systems on production, climate change, water and soil fertility 5.1. The impact of agriculture on climate change 5.2. The impact of different systems of conservative agriculture on soil fertility in different

climatic conditions
5.3. The effect of soil works and plant residue management on agricultural production
The impact of different systems of conservative agriculture on soil fertility on lands affected by various forms of degradation
6.1. Intensity of soil erosion processes in different agricultural systems
6.2. Peculiarities of the application of conservative agriculture systems in areas affected by drought
Use of pedological information and computer systems to extend the surfaces suitable for conservative technologies
7.1 Use of geographic information systems (GIS) technology in conservative agriculture systems
7.2. The role of the soil information system (SIS) in constantly updating the quality status and for the development of soil protection strategies.

Practical works
Aprecierea calității terenurilor și analiza factorilor limitativi și restrictivi pentru stabilirea cerințelor ameliorative Examination and interpretation of pedological and agrochemical maps. Assessment of land quality and analysis of limiting and restrictive factors for establishing improvement requirements
Technological characterization of an agricultural territory, analysis of agrochemical properties of soils, working methods, data interpretation and preparation of fertilization plans
Presentation and discussion of erosion processes and other forms of soil degradation. Studying the general characteristics regarding the zonal, climatic and vegetation factors (relief, climate, vegetation, soil, water)
Use of information systems on the suitability of land for conservative technologies Knowledge of soil surface mapping methods, data analysis and interpretation
Establishing the technical elements for the ameliorating fertilization of the degraded lands
Establishment of indices for enhancing the production capacity of agricultural lands
Final colloquium of knowledge evaluation

Bibliography

1. Gerard Jităreanu, Costică Ailincăi, Simion Alda, Ileana Bogdan, Costică Ciontu, Dan Manea, Aurelian Penescu, Mihai Rurac, Teodor Rusu, Denis Țopa, Paula Ioana Moraru, Adrian Ioan Pop, Marian Dobre, Anca-Elena Calistru - 2020 -Tratat de Agrotehnică, Editura “Ion Ionescu de la Brad”, Iași, 1240 pagini, (p. 1219-1233), ISBN 978-973-147-353-6.
2. Gerard Jităreanu, Costică Ailincăi, 2016 – *Agrotehnica*, Ed. “Ion Ionescu de la Brad” Iași, ISBN: 978-973-147-183-9.
3. Ailincăi Costică, Jităreanu Gerard, Lucian Raus, Țopa Denis- 2013 - *Tehnologii de cultură și metode de protecție a solului - Crop technologies and methods for soil protection*, Editura “Ion Ionescu de la Brad”, Iași, 2013, 212 p, ISBN 978-973-147-121-1.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Final Exam	Oral examination	50%
Labs Colloquium	Oral examination	10%
Partial exam	Written assessment	30%
Evaluation during the semester	Oral examination	10%

Contact

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