

**Topics and References for the position No. 3 from Staff Establishment of the
Department of Environmental Engineering for the year 2022 - 2023**

Bonitation and technological characterization of agricultural lands - course

1. The notion of fertility and quality of land / soils – Natural, cultural and economical fertility
2. Bonitation of agricultural land
3. Bonitation index for natural conditions
4. Calculation of bonitation score
5. The practical importance of agricultural land bonitation

References

1. Budoï, Gh 1990, *The basics of agricultural ecology*, Housepublishing of the Agronomic Institute “Nicolae Bălcescu”, Bucharest
2. Budoï, Gh& Penescu, A 1996, *Agrotehnics*, Publishing house Ceres, Bucharest.
3. Canarache, A 1990, *The physics of agricultural soils*, Publishing house Ceres, Bucharest.
4. Guș, P, Rusu, T& Bogdan, I 2004, *Agrotehnics*, Publishing house Risoprint, Cluj-Napoca
5. Păcurar, I& Buta, M 2010, *Pedology and bonitation of agricultural land: practical guidance*, Publishing house Risoprint, Cluj-Napoca
6. Teaci, D 1980, *Bonitation and technological characterization of agricultural lands*, Publishing house Ceres, Bucharest
7. Țărău D 2009, *Bonitation and evaluation of land with elements of pedological foundation*, Publishing house Agroprint, Timișoara

Bonitation and technological characterization of agricultural lands - practical guidance

1. Soil mapping stages
2. Soil profile - horizons and diagnostic properties, diagnostic parent materials
3. Collection of soil samples for current pedological studies
4. Soils evaluation
5. Qualitative evaluation and value of land, price of land

References

1. Domuța, C& Sabău, N 2000, *Agrotehnics – practical guidance*, part I, Publishing house of Oradea University.
2. Florea, N, Bălăceanu, V, Răuță, C& Canarache, A 1987, *Methodology for the development of pedological studies*, Part I. *Collection and systematization of pedological data*, Research Institute for Pedology and Agrochemistry, Bucharest
3. Țărău, D., 2006, *Mapping, soil bonitation and land evaluation*, Publishing House Eurobit, Timișoara.
4. Răuță, C, Canarache, A& Nițu I 1995, *Guide regarding agro-pedo improvement works*, ICPA Bucharest, Bucharest
5. Sabău N.C., and colab. – 1999 – *Genesis, degradation and soil pollution, part I. The genesis of the soil*. Publishing house of Oradea University.
6. Spânchez, Gh., 2009, *Mapping and bonitation of agricultural and forestry land*, Publishing house Transilvania University, Brașov

Restoration and protection technologies of soils I - course

1. Introduction about technologies for restoration and recultivation of polluted and degraded lands
2. Technologies for the soils protection affected by moisture deficit
3. Technologies for protection and restoration of the productive capacity of soils affected by excess moisture
4. Pedo-ameliorative technologies for soils affected by acidity
5. Technologies to restore saline soils.

References

1. Bandici Gheorghe Emil, Borza Ioana Maria, Ardelean Ileana, 2020- *Ecological agriculture*, Publishing house of Oradea University
2. Domuța C., Sabau N.C., - 2001 – *Agrotehnics*. Publishing house of Oradea University
3. Nițu, I., Răuță, C., Dracea, M. - *Agro-pedo-ameliorative technologies*, Publishing house Ceres, Timișoara, 1996
7. Miclăuș, V 1991, *Ameliorative pedology*, Publishing house Dacia, Cluj-Napoca.
4. Mihai, Gh& Ionescu, V 1986, *Guide to control soil erosion*, Agroforestry Publishing house, Bucharest
5. Neag Gh. 1997, *Soil and groundwater depollution*. Publishing House of the Book of Science Cluj-Napoca
6. Oanea, N&Rogobete, Gh 1977, *General and ameliorative pedology*, Didactic and Pedagogical Publishing, Bucharest
7. Păcurar I., 2005 - *Ecopedology*, Academicpress Publishing House
8. Zăhan, P& Bandici, Gh 1999, *Agrotehnics of acid soils from the North-West of Romania*, Publishing house of Oradea University

Restoration and protection technologies of soils II- course

1. Technologies for the improvement of sloping lands affected by erosion
2. Rehabilitation and restoration of polluted and degraded soils from mining operations
3. Technologies for restoring and protecting lands polluted with oil and salt water
4. Restoring the lands occupied by household warehouses
5. Rehabilitation of polluted soils using tolerant, protective and ameliorating crops

References

1. Borza, I 1997, *Soil improvement and protection*, Mirton Publishing house, Timișoara.
2. Dirja M, Budiu V, Tripon D, Păcurar I, Neag V., 2002, *Hydro erosion and the impact on the environment*, Risoprint Publishing house, Cluj-Napoca.
3. Mihai, Gh& Ionescu, V 1986, *Guide for control of soils erosion*, Agroforestry Publishing house, Bucharest
4. Neamțu, T 1996, *Ecology, erosion and anti-erosion agrotehnics*. Ceres, Publishing house, Bucharest
5. Nițu, I, Răuță C., and Drăcea, M 1988, *Agro-pedo-ameliorative technologies*, Ceres, Publishing house, Bucharest
6. Oros V 2002, *Ecological rehabilitation of industrial degraded sites*. Publishing house Transilvania University, Brașov
7. Sabău, N, Domuța, C& Berchez, O 2002, *The genesis, degradation and pollution of the soil, Part II. Degradation and pollution of the soil*. Publishing house of Oradea University

Restoration and protection technologies of soils I – practical guidance

1. Situation plan, specific graphic representations of remedial technologies, the creation of longitudinal and transversal profiles
2. Calculation of irrigation rate and return times for territories affected by moisture deficit
3. Determination of soil humidity
4. Horizontal drainage is the method of ecological reconstruction of lands affected by moisture excess
5. Calculation of irrigation rate used to improve saline soils

References

1. Ciobanu Gh., 2002 – *Agrochemical methods of analysis, interpretation and improvement of soil fertility* . Publishing house of Oradea University
2. Domuța, C& Sabău, N 2000, *Agrotehnics – practical guidance, part I*. Publishing house of Oradea University
3. Florea, N., Bălăceanu, V., Răuță, C., Canarache, A., (1986), *Methodology for the development of pedological studies part I and part II*, Research Institute for Pedology and Agrochemistry, Bucharest
4. Rusu, T și colab. 2007, *Physics, hydrophysics, chemistry and respiration of the soil: research methods* . Risoprint Publishing house, Cluj-Napoca.
5. Rusu, T și colab. 2009, *Soil and plant methods researches*, Risoprint Publishing house, Cluj-Napoca

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