

Preservation and capitalization of ornamental flora biodiversity (Specialization Environmental engineering, IInd Year of study, IIIrd semester)

Credit value (ECTS): 6

Course category: mandatory

Course holder:

Assoc. Prof. PhD Elena Liliana CHELARIU

Discipline objectives (course and practical works)

- correct knowing and utilisation of the specific terms and notions;
- adequate knowing and utilisation of terms regarding biodiversity;
- understanding of the theoretical base regarding role of biodiversity and possibilities of its preservation, with special reference at ornamental plants;
- understanding and explanation of some physiological and biochemical processes specific for ornamental plants;
- knowing of utilization possibilities of ornamental plants in environment protection strategies;
- achievement of knowledge regarding producing of seedling material at ornamental plants in the conditions of „*ex situ*” preservation.
- knowing of some capitalization methods and techniques of the products and by-products from ornamental flora, aiming to improve the qualities of environment

Contents (syllabus)

Course (chapters/subchapters)
1. Importance of preservation and capitalization of ornamental flora biodiversity
2. Notions regarding biodiversity of plants
2.1. Structural elements and factors which influence biodiversity.
2.2. Types of biodiversity.
2.3. Causes of biodiversity erosion.
2.4. Preservation of biodiversity at the level of population, species, and biological community.
2.5. Biodiversity of ornamental flora.
3. Plants' classification in ecological and decorative context
3.1. Classification in according with biological particularities and relation with ecological factors (place of origin, biological cycle, cropping place).
3.2. Classification in according with ornamental value and utilisation way.
3.3. Classification in according with the behaviour face to polluting factors.
4. General notions regarding plants ecology
4.1. Relations with main vegetation factors (light, water, temperature, soil/substrate).
4.2. Reaction of plants at disruptive factors.
5. Biological, technological and economical basis of „in situ” and „ex situ” preservation of plants with ornamental potential
6. Capitalization of plants with ornamental potential aiming to improve the quality of environment.
7. Reaction of ornamental plants at polluting factors: physical, chemical and biological.
8. Utilisation of ornamental plants in bio-remediation actions: phytoextraction, phytostabilization, phytotransformation, phytovolatilization, rhizofiltration.
Practical works
Identification and gathering of biological material from spontaneous and cultivated flora, for “ex situ” preservation.
Conditioning and keeping of biological material utilised in „ex situ” preservation.

Verification of seeds quality (genetic analysis, physical analysis, physiological analysis, analysis of health state).
Categories of biological material utilised for plants' vegetative multiplication.
Multiplication „in vivo” and „in vitro” of the plants with ornamental potential.
Establishing and maintenance of crops for “ex situ” preservation and ecological reconstruction.
Documentary thematic visits at remarkable objectives.
Characterization of the main ornamental plants with role in bio-remediation and which are cultivated in unprotected field.
Characterization of the main ornamental plants with role in bio-remediation and which are cultivated in protected field..
Species from spontaneous flora with ornamental value and their role in bio-remediation.

Bibliography

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- Chelariu Elena Liliana, Brînz Maria, 2019** – *Conservarea i valorificarea biodiversit ii florei ornamentale – îndrum tor de lucr ri practice*. Ed. Ion Ionescu de la Brad, Ia i.
- Chelariu Elena Liliana, 2015** – *Floricultur – plante de apartament*. Ed. Ion Ionescu de la Brad, Ia i.
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- Vîntu V., 2000** – *Ecologie i protec ia mediului*. Ed. Ion Ionescu de la Brad, Ia i.
- Volf Irina, 2005** - *Ecotehnologii, ecoproduse, ecoservicii*. Ed. Ecozone, Ia i.
- Xingli G., Corey J.A. Bradshaw, Hugh T.W. Tan, Navjot S. Sodhi, 2010** - *Future habitat loss and the conservation of plant biodiversity*. Biological Conservation 143:1594–1602, <http://www.elsevier.com/locate/biocon>

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Course	Exam	60 %
	Monitoring of attendance	10 %
Practical works	Presentation of a case study	30 %

Contact

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