

| |
|---|
| Studyprogram: Agricultural Sciences |
| Type and level of study: Doctoral academic studies |
| Course Title: Biofarm – source of high value products |
| Teacher(s): Drazic M. Dragana, research fellow, Nikolic P. Olivera, associate professor, Jovanović B Ljubinko, full professor, Danka S. Radić, assistant professor, Slađan Rašić, assistant professor, Gordana Racić, assistant professor |
| Status: Elective 3, IV semester |
| ECTS 11 |
| Prerequisite: None |
| The goal of the course: Introduction to basic principles of organizing biofarm (ecological or organic farm) as comprehensive, unified and efficient cycle of circulation and renewal of matter and way of establishing ecological balance. |
| The outcome of the subject: Completing planned program, students will dispose of significant findings connected with establishment, harmonization and functioning of plant and livestock production, through individual biofarm system and use of renewable energy, biomass management and producing high value products. Performing research study, students will gain practical skills in this area. |
| Syllabus: <i>Theoretical study –</i> Principles of organic production at the farm level: use of various, environmental friendly, methods, techniques and technologies in the aim of yield increase. Plants and plant production. Soil fertility and biological activity. Organic and mineral fertilizers, green fertilizers and legumes, composting and mulch, microbiological preparations and other improvers and soil conditioners. Crops – soil covers: planting in the aim of weed, pest and disease control and soil quality improvement. Genetic variability: mixed crops, strips crops, different varieties of the same crop, different varieties of local crops, use of local originate seeds, seeds exchange among local producers. Crop rotation. Weed, disease and pest control. Plant protection products – substances of plant and animal originate, microorganisms applicable at biological plant protection, trapped or scattered applied substances and other substances traditionally applied. Rational use of local water sources, adding organic matter to soil in aim to improve its water hold capacity, use of mulch, water phytoremediation. Responsible use of energy and nature sources, maintenance of biodiversity and regional ecological balance. Eco corridors. Livestock production on the farm. General principles. Soil conversion and relation with livestock. Livestock conversion. Zoo techniques, transportation, identification of animal products, animal organic waste, free zones for animal moving and housing, keeping animals optimal density, protection of vegetation from overgrazing and general limits for animal housing. The basic preconditions for biofarm organizing: plan, infrastructure, crop rotation, documentation. General rules and basic postulates of biofarm organizing: relation between plant and livestock production, optimal animals number and diversity, minimum of (un)covered soil surface. The basic principles of biofarm functioning: individuality, self-sufficiency, restructuring, profitability, economic sustainable, ... Factors of systematic approach to business on the biofarm. Biofarm models. Multidisciplinary approach to biofarm organization. Specificity and qualitative traits of products obtained at the biofarm. Market, distribution and sale. International standards (The International Federation of Organic Agriculture Movements – IFOAM), national standards and regulations. <i>Practical classes –</i> Biofarm modeling. Visit biofarms. Actively participate in defining the objectives of a biofarm and considering the difficulties and potential, through research. |
| Literature: 1. https://www.ifoam.bio/en/organic-landmarks/principles-organic-agriculture 2. https://www.organicnet.co/info-center/resource/show/how-can-organic-farming-compete-with-conventional-farming 3. https://www.google.com/search?client=firefox-b&q=Next-gen+urban+farms%3A+10+innovative+projects+from+around+the+world+ 4. https://www.theguardian.com/sustainable-business/2014/jul/02/next-gen-urban-farms-10-innovative-projects-from-around-the-world |

| | | | | |
|--|--------------------|--------------------------|--------------------------|---------------|
| Number of lectures: | | | | Other Classes |
| Lectures: 4 | Practices: | Other forms of teaching: | Student research work: 7 | |
| Teaching methods: Theoretical teaching part is performed in teaching rooms, using computer tools, by processed and presented lectures. Student research work is performed as field and laboratory trials, in accordance with area specify and at biofarms. | | | | |
| Score for grading (maximal100 points) | | | | |
| Pre-commitments | Poens | The final exam | Poens | |
| Activity duringlectures | 10 | Written exam | | |
| Practical classes | 10 | Oral examination | 40 | |
| Colloquia | 2 x 10 = 20 | | | |
| Seminars | 20 | | | |
| <i>Total</i> | 60 | | 40 | |