

Teaching program of subject entitled  
**UP-TO-DATE TECHNOLOGIES OF MEDICINAL PLANT PRODUCTION**

for the academic year of 2017/2018 (1<sup>st</sup> (fall semester))

**Place and time of lectures: on Tuesdays; Building G, 2nd floor, room G8, 8.00-10.00 h**

Date	Lectures	Lecturer
<b>5th September</b>	1. Basic terms of medicinal plant production. The most important medicinal and aromatic plant crops of the world. Significance of medicinal plant production in national and international level. Main herb producing regions. Logistic tasks of small and large scale production. Legal regulation forms of production and distribution of medicinal plants. Variety use in medicinal plant production. Morphological and production biological characterization of some important herb	Éva Zámoriné Németh
<b>12th September</b>	- ISEO Conference: no lecture	-
<b>19th September</b>	2. Significance of growing area in medicinal plant production (soil type, location, exposure, direction of wind, duration of sunshine, precipitation, etc.). Fitting of ecological demands of herbs to the environmental conditions of the growing site. Soil tillage technologies and machines applied in medicinal plant production during soil preparation and plant care.	Beáta Gosztola
<b>26th September</b>	3. Introduction and discussion on project tasks (homeworks): presentation of the medicinal plant sector of the countries, where the students come from. Propagation technologies applied in herb production. Quality requirements and standards of medicinal plant propagation materials. Propagation media, plant growing structures and plant care activities used during raising young plantsIntroduction	Zsuzsanna Pluhár
<b>3rd October</b>	4. Methods for establishing herb fields. The role of planting scheme and plant density in drug yield and quality. Plant care procedures during and after establishing fields (thinning, supplementig, pruning, mulching, intercropping, etc.)	Zsuzsanna Pluhár
<b>10th October</b>	5. Modern methods and equipments of plant protection and weed control in integrated cropping systems of medicinal plant production as well as in organic farming. The most important pests and diseases appearing in medicinal plant cultures. Evaluation of medicinal plant based crop enhancing agents.	Péter Radácsi
<b>17th October</b>	6. Nutrient supply applied in annual, biennial and perennial cultures. Significance of the soil nutrient capacity and role of certain elements in rising yields and improving drug quality. Forecrop fertilizing, soil improving crops, basic, starter and crop fertilizing sytems. Chemical fertilizers, manures and other crop enhancement agents. Irrigation technics, timing (phenological phases) and equipments.	Éva Zámoriné Németh
<b>24th October</b>	7. Modern technologies and machines of medicinal plant harvest. Aspects of choosing harvesters (growing scale, cropping technology, morphology of plant organs harvested, ripening stages, phenology). Effects of harvesting method on the quality of the fresh crop and the drug.	Péter Radácsi Zsuzsanna Pluhár
<b>31st October</b>	8. Modern post harvest technologies (drying, cooling, freezing, freeze-drying, etc.). Special treatment of harvested medicinal plant crops. Evaluation of new primary processing methods. Influence of post harvest procedures on the quality of end product.	Krisztina Szabó
<b>7th November</b>	9. Secondary processing of medicinal plant drugs. Final product manufacture. Up-to-date storage technologies and trading possibilities of medicinal plant products.	Krisztina Szabó
<b>14th November</b>	10. Traditional and modern industrial scale extraction technologies of medicinal plants (pressing, solvent extraction, SFE, distillation, etc.). The effect of extraction method on the quality of final product.	Zsuzsanna Pluhár
<b>21st November</b>	11. Quality assurance systems in medicinal plant sector (GAP, GACP, GMP, GLP, stb.). Further possibilities for quality certification	Zsuzsanna Pluhár
<b>28th November</b>	12. Oral presentation of projects prepared by students	Zsuzsanna Pluhár
<b>5th December</b>	13. Oral presentation of projects prepared by students	Zsuzsanna Pluhár

**Literature recommended**

- Hornok, L. (ed): Cultivation and processing of medicinal and aromatic plants. Academic Publisher, Budapest, 1991.
- handouts of lectures (distributed in pdf)
- e-book ([www.kertesztananyag.hu](http://www.kertesztananyag.hu))
- [http://www.tankonyvtar.hu/hu/tartalom/tamop412A/2011-0028\\_up\\_to\\_date\\_technologies/up\\_to\\_date\\_technologies\\_of\\_medicinal\\_plant\\_production\\_1\\_1.html](http://www.tankonyvtar.hu/hu/tartalom/tamop412A/2011-0028_up_to_date_technologies/up_to_date_technologies_of_medicinal_plant_production_1_1.html)

**Requirements (terms to fulfill before exam):**

- Class attendance is compulsory, the maximum of 3 absence (25%) is accepted
- Preparation and oral presentation of the homework

**Exam:**

- written

Budapest, 29th August, 2016

**dr. Zsuzsanna Pluhár**  
associate professor  
course instructor