Teaching program of subject entitled

UP-TO-DATE TECHNOLOGIES OF MEDICINAL PLANT PRODUCTION

for the academic year of 2018/2019 (1st (fall semester)

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

Date	Lectures
4th September	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
11th September	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.
18th September	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
25th September	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.)
2nd October	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.
9th October	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.
16th October	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).
23th October	National holiday
30th October	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.
6th November	9. Secondary processing of medicinal plant drugs. Final product manufacture. Up-to-date storage technologies and trading possibilities of medicinal plant products.
13th November	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.
20th November	11. Quality assurrance systems in medicinal plant sector (GAP, GACP, GMP, GLP, stb.). Further possibilities for quality certification
27th November	12. Oral presentation of projects prepared by students
4th December	13. Oral presentation of projects prepared by students

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.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, 28th August, 2017

dr. Zsuzsanna Pluhár
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course instructor