POST-HARVEST TECHNOLOGY OF HORTICULTURAL CROPS - Ist part

(IVth year of study, VIIth Semester)

Credit value (ECTS) 4

Course category
Mandatory discipline

Course holder:
PhD Associate Professor Liviu Mihai IRIMIA
Practical works:
PhD Assist Prof Tudose Sandu-Ville

Discipline objectives:
Acquisition and understanding of the theoretical basis specific to post-harvest technology of horticultural crops, acquisition the abilities of practical application of theoretical knowledge, as well as aquiring the abilities to autonomously observe, analyze, interpret and offer solutions to the problems in the field of vegetables and fruits post-harvest technology.
Specific objectives: knowledge of the technological peculiarities of vegetables and fruits; knowledge of post-harvest biological processes of vegetables and fruits; knowledge of technologies for storage, packaging and preparation for consumption of fruits and vegetables; knowledge of food risck factors affectig fruits and vegetables.

Contents

Course (Chapers)
1. Technological characterization of fruits and vegetables.
2. Chemical composition of fruits and vegetables.
3. Post-harvest biological processes at fruits and vegetables.
4. Flow capitalisions particularites on fruit and vegetable.
5. The factors that determine the fruits and vegetables quality.
6. Depreciation and post hatvest spoilage of fruit and vegetables.
7. The quality analysis of fruit and vegetables.
8. Food safety risk factors for fruit and vegetables.
9. Food safety management systems for fruits and vegetables.

Practical works
The analysis of the authenticity and quality characteristics of vegetables and fruits.
The assessing of fruits maturation degree by iodine test.
Determination of textural firmness of fruits and vegetables.
Sensory analysis of fresh fruits and vegetables.
Determination of soluble dry substance by refractometry method.
Determination of titratable acidity of fruits and vegetables.

References

1. Bartz J., , Brecht J.K., 2002. *Postharvest Physiology and Pathology of Vegetables*. CRC Press.
2. Beceanu D., 2010. *Tehnologia produselor horticole* (Post-harvest technology of horticultural crops). Partea a-I-a. Ed. PIM, Iaşi.
3. Irimia L., 2013. *Controlul şi expertiza calităţii legumelor, fructelor şi produselor derivate* (Quality control of fruits, vegetables and processed products from fruits and vegetables). Ed. "Ion Ionescu de la Brad", Iaşi.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Written assessment.	80%
Activity during the semester	Written assessment during the semester, verification tests and final laboratory colloquium.	20%

Contact

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POST-HARVEST TECHNOLOGY OF HORTICULTURAL CROPS – IInd part (IVth year of study, VIIIth Semester)

Credit value (ECTS) 5

Course category
Mandatory discipline

Course holder:
PhD Associate Professor Liviu Mihai IRIMIA
Practical works:
PhD Assist Prof Tudose Sandu-Ville

Discipline objectives:

Acquisition and understanding of the theoretical basis specific to post-harvest technology of horticultural crops, acquisition the abilities of practical application of theoretical knowledge, as well as aquiring the abilities to autonomously observe, analyze, interpret and offer solutions to the problems in the field of vegetables and fruits post-harvest technology.

Specific objectives: knowledge of post-harvest technological flow of pomaceous and drupaceous fruits; knowledge of post-harvest technological flow of strawberries, grapes and nuts; knowledge of post-harvest technological flow of strawberries, grapes and nuts; knowledge of post-harvest technological flow of tomatoes, potatoes, onions, cucumbers, peppers; knowledge of processing principles and technologies for semi-processed products from fruits and vegetables; knowledge of processing technologies for concentrates, dyhadrated, salted and thermo-sterilised products.

Contents

Chapters
1. Post-harvest technology of pomaceous fruits.
2. Post-harvest technology of drupaceous fruits.
3. Post-harvest technology of strawberries, grapes and nuts.
4. Post-harvest technology of tomatoes, potatoes, roots and onion.
5. Raw and auxiliary materials and processes for processing and preserving vegetables and fruits.
6. Technology of semi-industrialized fruit and vegetable products.
7. Technologies of concentration, dehydration and thermosterilization of vegetables and fruits.
8. Auxiliary materials and processes for processing and preserving vegetables and fruits.
9. Food safety management systems for fruits and vegetables.

Practical works

Themes
1. Analysis of quality standards in carrots, potatoes, onions.
2. Analysis of quality standards in apples, plums and grapes.
3. Analysis of physico-chemical parameters of apples at two different times during storage.
4. Analysis of auxiliary materials: salt and sugar.
5. Analysis of auxiliary materials: drinking water and vinegar.

6. Determining the presence of biological risks on fresh vegetables and fruits, using microbiological tests (*Listeria, Escherichia, Salmonella*).
7. Analysis of quality indices of thermo-sterilized products from vegetables (peas, beans, pods).
8. Analysis of the quality indices of the thermo-sterilized fruit products.
9. Sensory analysis and determination of the composition parameters of tomato paste.

References

1. Irimia L., 2013. *Controlul şi expertiza calităţii legumelor, fructelor şi produselor derivate* (Quality control of fruits, vegetables and processed products from fruits and vegetables). Ed. "Ion Ionescu de la Brad", Iaşi.
2. Beceanu D., Chira A., 2011. *Tehnologia produselor horticole. Valorificare în stare proaspătă* (Fresh fruits and vegetables valorisation), Ed. PIM, Iaşi.
3. Beceanu D., 2010. *Tehnologia prelucrării legumelor şi fructelor* (Fruits and vegetables processing). Ed. PIM, Iaşi.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Written assessment.	80%
Activity during the semester	Written assessment during the semester, verification tests and final laboratory colloquium.	20%

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