

DISTILLATES TECHNOLOGY: TECHNOLOGY AND QUALITY CONTROL OF BEVERAGES, 2ND YEAR, 3RD SEMESTER

Credit value (ECTS):8

Course category: mandatory

Course holder: University assistant TUDOSE-SANDU-VILLE Ștefan

Discipline objectives (course and practical works)

The course "Distillates technology" aims to provide the master students with up-to-date information on the different distilled alcoholic beverages obtained both locally and internationally, regarding the raw materials used (agricultural and horticultural), the different technological flows applied, the requirements of hygiene, the physical and chemical processes that take place to obtain spirits, as well as the sensory and physico-chemical methods of evaluating both the quality and the diseases and defects that may occur in these products. It also aims to transmit information regarding the authorized technological practices, stabilization, conditioning and aging of distilled alcoholic beverages, Romanian and European legislation, as well as other information to help the professional training of the future specialist engineer in this field.

Contents (syllabus)

Course (chapters/subchapters)
1. Overview. Brief history of alcohol distillation and spirits production worldwide and in Romania. Motivation of alcohol consumption and its implications on human health.
2. Food hygiene rules used in the technologies for obtaining distilled alcoholic beverages.
3. Raw materials of agricultural origin used in the technology for obtaining distilled alcoholic beverages
4. Raw materials of horticultural origin used in the technology for obtaining distilled alcoholic beverages.
5. Processing and fermentation of raw materials. Quality standards.
6. Technological operation of distillation. Technological variants of distillation of fermented materials of agricultural and horticultural origin.
7. Stabilization and conditioning treatments for distilled alcoholic beverages.
8. Aging of distilled alcoholic beverages.

9. The Romanian assortment of distilled alcoholic beverages. Classification, technological specifications for obtaining, sensory descriptors for identification and evaluation
10. The international assortment of distilled alcoholic beverages. Classification, technological specifications for obtaining, sensory descriptors for identification and evaluation.
11. Legislation for the production and marketing of distilled alcoholic beverages in Romania, the European Union and in the non-EU area
12. Preparation of distilled beverages in artisanal regime.
13. Quality management systems in the industry of distilled alcoholic beverages.

Practical works
1. Norms of labor protection and PSI in the Laboratory of Distillate Technology. Description of the laboratory, equipment and utensils used in the analysis of raw materials, semi-finished products and finished products. Presentation of the experimental wine cellar.
2. Methods of taking the average analysis samples. Determination of the soluble dry matter content of the raw materials by refractometric and areometric methods.
3. Evaluation of the degree of ripening of the fruits and the optimum moment of harvesting for processing to obtain the fermentations destined for distillation.
4. Determination of the total acidity of raw materials, semi-finished products and finished products by colorimetric and potentiometric methods. Determination of pH.
5. Methods of preparing the yeast fermentation base for starting the alcoholic fermentation of the raw materials of horticultural origin.
6. Use of exogenous enzymes in maceration of fruit marks.
7. The use of flavorings in the technology of obtaining distilled alcoholic beverages. Infusions and macerates from plants and fruits.
8. Determination of alcohol concentration of alcoholic beverages distilled by areometric methods.
9. Determination of volatile acidity of alcoholic beverages distilled by titrimetric method.
10. Determination of reducing sugars from alcoholic beverages distilled by the Luff-Schoorl chemical method.
11. Stabilization treatments for distilled alcoholic beverages
12. Determination of the aromatic profile of distilled alcoholic beverages by sensory analysis (tasting).

13. Identification of diseases and defects of distilled alcoholic beverages by sensory analysis (tasting).

Bibliography

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20. ***OIV – Compendium of International Methods of Analysis – OIV, 18, rue D'Aguesseau - 75008 Paris, 2016.
21. ***OIV – International Oenological Codex – OIV, 18, rue D'Aguesseau - 75008 Paris, 2016.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Course	Exam	50%
	Presence	10%
Practical works	Tests	40%

Contact

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