RESOLUTION ECO 3/2004

BASIC LEVEL REQUIRED FOR PROFESSIONALS INVOLVED IN OENOLOGICAL PRACTICES

THE GENERAL ASSEMBLY,

UPON THE PROPOSAL by Commission III "Economy", based on the works of the experts group "Training",

CONSIDERING the resolution ECO 1/2004 taking into account OENO 2/91 relating to the training of oenologists, upper training level and Resolution OENO 1/99 which defines the field of activity for wine professionals and which implies an explanation of each sector activity,

CONSIDERING that these competencies can only be acquired by guaranteeing basic training,

CONSIDERING that it is desirable to establish a general framework which each country can adapt to its particular situation,

RECOMMENDS TO MEMBER STATES that they take into consideration the following elements for developing training programmes for professionals involved in oenological practices.

Theory

A. Oenology

I. Composition and development of wine. Microbiology and biochemistry of wine.

II. Work and treatment of wine

III. Oenological engineering

IV. Analysis and control of must and wine

V. Products and co-products derived from vine and wine

B. Law and vitivinicultural legislation

C. Food safety

D. Wine and vine products in the human environment

Tutorials and seminars

Sensory analysis

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Detailed programme

The detailed programme given below is the minimum programme.

Theory

A. Oenology

I. Composition and development of wine.

1.1. Composition of wine.

Alcohols. Sugars. Organic acids. Mineral constituents. Phenolic compounds. Nitrogen compounds. Neutral polysaccharides. Volatile compounds.

Aromatic compounds, other compounds, etc.

Comparison between the composition of must and wine.

Relation between the composition and sensory characteristics.

1.2. Acidity and pH.

State of acids in the wine, acidimetric balances.

1.3. Oxidation-reduction phenomena.

Oxidation-reducing systems for wine.

Dissolution of oxygen in wines. Oxidisable substances in wine – mechanism of oxidation of wine constituents.

Application to oenology of the concept of oxidation-reduction potential. Determination of this potential.

1.4. Macromolecules and colloidal phenomena in wines.

Real solutions and colloidal state.

Stability factors of macromolecules and colloidal suspensions.

Flocculation. Sedimentation. Adsorption.

Concept of protective colloids. Natural wine macromolecules.

Colloids of accidental formation in wines.

1.5. Precipitations of physico-chemical origins in wines.

Tartaric precipitations.

Ferric precipitations. Chemical and physico-chemical phenomena of “ferric casse”.

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Influence of pH and organic acids.
Formation of ferric complexes.
Cupric precipitations or “cuprous casse”.
Coagulation of proteins or “protein casse”.
Precipitation of colouring matter.
Precipitation of oxidasic origin.
Characteristics and predicting cloudiness and deposits.

1.6. Microbial alterations.

1.6.1. Microbial alterations.
1.6.2. Alterations of yeast origin, fleur
1.6.3. Alterations of bacterial origin

1.6.1.1. Lactic bacteria.

Degradation of pentoses.
Degradation of citric acid.
Degradation of tartaric acid: tourne.
Degradation of glycerol: bitterness, “graisse disease”.

1.6.1.2. Acetic bacteria.

Formation of acetic acid and ethyl acetate.

II. Working and treatment of wine.

2.1. Knowledge and quality of products used in oenology.

O.I.V. International Oenological Codex
International Code of Oenological Practices.

2.2. Hygiene.

Hygiene of premises, materiel and facilities.
Hygiene of wine. Prevention of microbial and physico-chemical accidents.

2.3. Fining of wines.

Fining theory. Coagulation of proteins in wine. Physico-chemical phenomena in play. Over-fining. Fining practices and main fining agents used.
Lees from fining.

2.4. Filtration of wines.

Filtration theory. The mechanisms of filtration: straining and adsorption.
Frontal and tangential flow. Rate and clogging of filtering surfaces. Filtrating material:

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cellulose, diatomaceous earth, perlite, membranes, etc.

Filtration techniques. Choice of a filtration process. Filterability tests.

Comparison of fining and filtration effects.

2.5. Centrifugation of wines.

Centrifugation theory. Material principle.

2.6. Physical treatments.

Biological stabilisation of wines by heat: pasteurisation.

Stabilisation and concentration by cold.

Various processes.

2.7. Physico-chemical and chemical treatments.

Theory and practice of treatments.

Use of mentioned products according to the O.I.V. International Code of Oenological Practices and products authorised for experimentation.

Sulphurous acid in wines: role, state and techniques for use.

Inert gases in oenology.

2.8. Storing wine.

Manipulation. Blending. Topping. Racking.

Storing with inert gases.

2.9. Winemaking.

In wood. In vats. In bottles and other techniques.

2.10. Packaging.

Blending. Technical control of wine (stability and filterability).

Material, packaging processes and sealing methods.

III. Oenological engineering.

Machines and apparatus.

Oenological practices (stirring up, racking, treatments, concentration, clarification, etc.).

Storing wines in bulk and bottled.

Bottling lines.

I. Analysis and control of must and wine.

Sensory analysis.

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General presentation on the wine tasting.
Sensory organs. Physiology of taste.
Relation between the composition of wines and their sensory characteristics.
Vocabulary for wine tasting.
Knowledge and recognition of primary tastes.
Concept of balance and harmony.
Initiation to wine tasting, spirit beverages of vitivinicultural origin and other products.
Determination of sensibility thresholds and differentiation of odours.
Search for defects and alterations.
Tasting wines from various vine varieties, various technologies and various vineyards.
Tasting panel.

I. Products and co-products derived from vine and wine.

5.1. Table grapes and raisins.

5.2. Mutated musts, concentrated musts, rectified concentrated musts, grape juice.

Stabilisation methods (storage, packaging).

5.3. Drinks made from grapes with little or no alcohol.

5.4. Aromatised wines, liqueur wines and other wine-based drinks.

5.5. Spirit beverages of vitivinicultural origin.

Brandies.
Marc brandy and lees.
Grape and raisin brandies.
Distillation and rectification processes.
Composition, storage and ageing of spirit beverages of vitivinicultural origin.
Preparation for marketing.

5.6. Confectionary products.

Jams. Low calorie products.
Making and storage.

5.7. Wine vinegar.

5.8. Other derived products.

Tartaric acid, grape seed oil, piquettes.
Anthocyanic pigments, compost and other products, etc.

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B. Law and vitivinicultural legislation

I. General regional, national and international aspects.

II. Legislation concerning foodstuffs. Applied to viticultural products and spirit beverages.

III. Labour law. Economic law. Commercial law. Tax law. Expertise, etc.

IV. Rights and responsibilities of the oenologist.

C. Food safety

D. Wine and vine products in the human environment.

I. Harmful effects and the environment: impact of cultivation practices, treatments of vines, from winemaking and other waste from vinicultural facilities.

II. Impacts of the consumption of wine and other vine products on human health.

Seminars

Sensory analysis.

Tutorials on the field and in the laboratory

Sensory analysis.

Training period

A field work internship is highly recommended.

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