RESOLUTION OENO 2/2003

STOPS IN ALCOHOLIC FERMENTATION

THE GENERAL ASSEMBLY,

UPON THE PROPOSAL of Commission II Oenology,

GIVEN the work concerning stops in fermentation that were presented in the “Wine Microbiology” Experts Group meeting and the O.I.V International Congress, that highlight the frequency of stops in fermentation in all the vitivinicultural countries in the world,

CONSIDERING the existence of different factors that can cause a stop in alcoholic fermentation such as:

- The frequency in musts of:
  - Nitrogen deficiency
  - Lipid deficiency linked to too intense clarification and a bad mastering of aeration during fermentation
  - Thiamine deficiency due to a bad mastering of pre-fermentation operations and the development of indigenous yeasts
- The usage of selected yeasts which are non-resistant to prolonged anaerobic conditions and to high concentrations of alcohol
- Too high percentage of alcohol; prolonged anaerobia
- The presence of antifungal residues in must which may inhibit metabolic activity in yeasts
- Excess sugar (musts derived from raisined or over matured grapes)
- Fermentation temperatures which are too high or too low
- The presence of large quantities of octanoic and decanoic acids
- The lactic needle hole due to Lactobacillus sp. or Pediococcus sp.
- The maloalcoholic fermentation due to Schizosaccharomyces sp.
- The low capacity of certain strains to ferment fructose at the end of the fermentation process

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UNDERLINES the real importance of prevention factors which are summarised below:

- To ensure that the usage of selected yeasts that are resistant to stress situations encountered during alcoholic fermentation, within the wine making conditions used such as high levels of alcohol, high osmotic pressure, absence of oxygen, and fluctuations in temperature
- To ensure a sufficient level of assimilated nitrogen
- To ensure a sufficient level of lipids (unsaturated fatty acids and sterols) in particular during fermentation off skins by limiting excessive clarifications and by providing oxygen to wines in fermentation
- To ensure a sufficient level of thiamine by the mastering of pre-fermentation operations and the supplementation of thiamine in musts
- To decrease the rate of octanoic and decanoic acids produced by yeast during fermentation, with the addition of yeast cell walls, during a big slow down in fermentation or before carrying out a secondary fermentation to completely transform residual sugars or for bottle fermentation.

RECOMMENDS the need to maintain the selected resistant yeasts in the conditions of alcoholic fermentation in appropriate collections by using multiplication and storage methodologies which guarantee the stability of the specific characteristics of each strain for a period of time,

CONSIDERS NECESSARY that producers of active dried yeasts adopt production conditions adapted to oenological needs. Prolonged aerobiosis conditions that favour an overwhelming number of mutants not resistant to high percentages of alcohol and prolonged anaerobiosis, should be avoided,

REQUESTS that scientific knowledge be deepened on all factors that favour arrests in fermentation, the resistance to stress of selected yeasts, as well as preventing this phenomenon and the means to remedying the situation.

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