RESOLUTION OIV-OENO 490-2012

DETERMINATION OF GALACTANASE ACTIVITY IN ENZYMATIC PREPARATIONS - REVISION OF THE MONOGRAPH OIV/OENO 313/2009

The GENERAL ASSEMBLY,

In view of article 2, paragraph 2 iv of the Agreement of 3 April 2001 establishing the International Organisation of Vine and Wine was founded,

Taking note of the works of the "Specification of Oenological Products" expert group,

CONSIDERING the resolution OIV-OENO 313-2009 adopted by theOIV

DECIDES on the proposal of Commission II "Oenology" to modify resolution OIV-OENO 313-2009 published in the International Oenological Codex according to the following marked modification:

Determination of galactanase activity in enzymatic preparations endo – (1.4) – β-galactanase

(EC 3.2.1.89 – CAS no. 58182-40-4)

(OIV/OENO 313/2009)

These enzymes are generally present among other activities, within an enzyme complex. Unless otherwise stipulated, the specifications must comply with resolution Oeno 365–2009 concerning the general specifications for enzymatic preparations" included in the International Oenological Codex.

1. Origin

Reference is made to paragraph 5 "Source of enzyme and fermentation environment" of the general monography on enzymatic preparation

The enzymatic preparations containing galactananase activities are produced by directed fermentations, for example, of Aspergillus niger Disporotrichum dimorphosporum, Penicillium sp. or Talaromyces emersonii.

2. Scope/Applications

Reference is made to the International Code of Oenological Practices, OENO 11/04;

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12/04; 13/04; 14/04 and 15/04.

Galactanases are catalysing the hydrolysis of rhamnogalacturonan I galactan type-I (RG-I galactan). They are useful for the maceration of grapes. This activity can be estimated by the hydrolysis of potato galactan.

3. Principle

The galactanases cut the galactan chains (eg. potato galactan), thereby releasing the reducing ends of the constitutive sugars. Measurement of the galactanase activity is based on determination the galactose according to the NELSON method (1994). In an alkaline medium, the pseudoaldehydic group of sugars reduces the cupric ions Cu^{2+}. The latter react with the arsenomolybdic reagent producing a blue colour, whose absorbance, measured at 520 nm, varies linearly with the concentration in starch hydrolysates (between 0 and 400 µg/mL). The determination method was developed using a commercially available endo-(1.4)-β- galactanase.

The following points are unchanged

4. Apparatus
5. Reagents and products
6. Solutions
7. Preparation of the standard range of galactose
8. Preparation of the sample
9. Procedure
10. Calculations
11. Characteristics of the method

Point 12 is modified as follow

12. Bibliography

- NELSON N, A photometric adaptation of the SOMOGYI method for the determination of glucose. The May Institute for medical research of the Jewish hospital, 1944. p 375-380.

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