



Thesis title: **Intereferents in condensed tannins quantification by the vanillin assay**

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Tribunal members (name/position):

- Olga Laureano, Investigadora Coordinadora, UTL/ISA
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Date & location of the oral examination:

3-12-12 3:00 PM on Instituto Superior de Agronomia

Confidential: Yes No

Abstract (max 300 words)

Different methods have been established in order to perform accurately the quantification of the condensed tannins in various plant products and beverages. The method of reaction in acid medium has been widely used for the quantification of condensed tannins. This method is based on the reaction of vanillin with the phenolic rings of condensed tannins and more specifically with the fusel aromatic rings of their flavan-3-ol units. In a previous study (Sun et al., 1998), several parameters that can affect the accuracy of the determination of condensed tannins have been examined by this method, and among them the influence of phenolic compounds other than tannins, in particular non-flavonoids such as phenolic acids (cinnamic acid, *p*-hydroxybenzoic acid, caffeic acid, gallic acid, *p*-coumaric acid, syringic acid), but also flavonols (quercetin dihydrate, kaempferol, myricetin, rutin) and the anthocyanin malvidin-3-glucoside; that may interfere the reaction of proanthocyanidins with vanillin assay. According to this analytical procedure proposed by Sun et al. (1998), other phenolic compounds of oenological interest not tested so far were analyzed to assess their possible interference with the reaction of proanthocyanidins in its quantification by the vanillin assay. In details, the phenolic compounds that have been studied were flavonols and flavones, stilbenes, various volatile phenols, and other phenols from wood such as ellagitannins, coumarins, aldehydes and still other compounds such as tyrosol and 2-phenylethanol. The chemical compounds examined at different concentrations did not produce any reaction with the vanillin. Therefore, the modified vanillin assay can be interpreted as a method for quantification of condensed tannins in grape and wine samples without any important analytical interference from other compounds not condensed tannins.

Keywords (5): *Proanthocyanidins; Interference substances; Phenols; Vanillin assay*

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