Evaluation of Virgin Olive Oil Bitterness by Total Phenol Content Analysis

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Bitterness is an important sensory attribute of virgin olive oil. It is usually assessed by tasting that is time-consuming method and needs trained tasters available. Bitterness is related to the phenolic compounds and can be estimated by the measurement of the specific absorbance at 225 nm (K_{225}). This paper proposes to evaluate oil bitterness intensity as estimated from the K_{225} values measuring the phenol content. Significant relationship between phenol content and K_{225} has been obtained, and a prediction model for bitterness intensity estimation from the phenol content was obtained. Classification of oil bitterness has been proposed by the phenol content. Furthermore when 12 VOO samples were classified by their bitterness intensities as estimated by the prediction model and by sensory analysis, more than 92% of oil samples were correctly classified. Therefore measuring phenol content can be estimated the bitterness intensity and oils can be classified by their bitterness. This model may represent an easy method to evaluate the bitterness intensity without any sensory assessment.