G45
EFFECT OF GAMMA RADIATION PROCESSING ON THE ANTIOXIDANT ACTIVITY OF GINGER

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Biological activity of ginger, especially antioxidant activity, has been associated to their bioactive compounds, gingerols, mainly 6-gingerol. Foods have some key compounds, which regulate their taste, aroma and nutritional profile, even if they are present in low concentration. These compounds used to be sensitive to irradiation in high doses. The aim of this study was to evaluate the effectiveness of gamma irradiation from ^{60}Co at doses 0, 5, 10, 15 and 20 kGy on ginger (*ZINGIBER officinalle* Roscoe), particularly about its antioxidant activity. The quantification of phenolic compounds was performed by Folin-Ciocalteu method and assessing the potential of antioxidant activity by the free radical [2,2 difenil-1-pricril-hidrazil (DPPH•)] scavenging and by Rancimat® method. The 6-gingerol quantification was performed by High Performance Liquid Chromatography (HPLC). There were no significant differences of total phenolic compounds in the irradiated samples compared to control ($p>0,05$). Eventhough, no irradiated extract showed higher ability on free radical scavenging. The Rancimat® method showed that antioxidant activity index (AAI) was not significant different ($p>0,05$) between analyzed extracts, as well as 6-gingerol quantification. It could be concluded that gamma radiation processing may be a feasible alternative for ginger because it does not significantly alter its major phenolic compounds or its significant antioxidant potential.

Keywords: *food irradiation, biocompounds, ZINGIBER officinalle roscoe*

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G46
USING ELEMENTAL ANALYSIS FOR DISCRIMINATION OF PINOT NOIR WINES FROM SIX DIFFERENT DISTRICTS IN AN AVA

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The application of multi-element profiling of macro, micro and trace elements in wine has been proposed as a means of establishing authenticity and typicity. Previous studies have considered the differences between countries and wine regions but there is very limited information for wines made from grapes grown within the same wine region, let alone single cultivar wines from within a wine district. Twenty-five Pinot noir wines from 6 districts within a Californian AVA were analyzed for 49 elements using a combination of inductively coupled plasma-mass spectrometry (ICP-MS) and microwave plasma atomic emission spectroscopy (MP-AES) instrumentation. All wines were from the 2016 vintage and analysis at approximately 6 months of age, with little or no barrel contact and not fined or treated for physical instabilities. Canonical variance mapping using the single elements and various ratios of elements revealed complete separation of the wines into 5 groups based on the district and tight clustering of the wines from each district within its group. The complete resolution is achieved with the first two factors which together account for 87% of the total variance. The separation between the district groups is between 3 and 5 times the dimension of the district groups. The method has potential applications in tracing authenticity and understanding the contributions of site to wine elemental composition.