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(P10) Removal of ochratoxin a from contaminated white and red wines using oenological fining agents

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Mycotoxins are toxic secondary metabolites produced by certain moulds, being ochratoxin A (OTA) one of the most relevant. Its chemical structure is a dihydro-isocoumarin connected at the 7-carboxy group to a molecule of L-β-phenylalanine via an amide bond. OTA contamination of wines might be a risk to consumer health, thus requiring treatments to achieve acceptable standards for human consumption [1]. According to the Regulation No. 1881/2006 of the European Commission, the maximum limit for OTA in wine is 2 μg/kg [2]. Therefore, the aim of this work was to know the effect of different fining agents on OTA removal, as well as their impact on white and red wine physicochemical characteristics. To evaluate their efficiency, 11 commercial fining agents (mineral, synthetic, animal and vegetable proteins) were used to get new approaches on OTA removal from white and red wines. Trials were performed in wines artificially supplemented (at a final concentration of 10 μg/L) with OTA. The most effective fining agent in removing OTA (80%) from white wine was a commercial formulation that contains gelatine, bentonite and activated carbon. Removals between 10-30% were obtained with potassium caseinate, yeast cell walls and pea protein. With bentonites, carboxymethylcellulose, polyvinylpolypyrrolidone and chitosan no considerable OTA removal was verified. In red wine, removals between 6-19% were obtained with egg albumin, yeast cell walls, pea protein, isinglass, gelatine, polyvinylpolypyrrolidone and chitosan. The

most effective fining agents in removing OTA from red wine were an activated carbon (66%) followed again by the commercial formulation (55%), being activated carbon a well-known adsorbent of mycotoxins. These results may provide useful information for winemakers, namely for the selection of the most appropriate oenological product for OTA removal, reducing wine toxicity and simultaneously enhancing food safety and wine quality.

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