

PHENOLICS IN RED WINE POMACE AND THEIR POTENTIAL APPLICATION IN ANIMAL AND HUMAN HEALTH

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ABSTRACT

Grape pomace by-products, from wine-making, have some beneficial antioxidant compounds left in them after vinification and could be a cheap source of these compounds for value added products. One of the most common antioxidant groups found in grapes are the phenols. These antioxidants have the potential to reduce cardiovascular disease, prevent some cancers, have chemoprotective roles, reduce signs of skin aging, aid in glucose transport, and prevent other diseases such as iron storage disease (ISD).

In this research, five Missouri red wine pomace samples were evaluated; Chambourcin, Grenache, Michigan, Norton and Vincent varieties. They were analyzed for total phenolic content using the Folin-Ciocalteu assay, total condensed tannin content using the Vanillin-HCl assay, procyanidin degree of polymerization using normal-phase HPLC, iron-binding potential using the iron-binding phenolic capacity assay, and antioxidant activity using the ABTS and ORAC assays.

The results showed that the vinification method applied to the grape variety greatly affected the pomace properties and composition. Red wine pomace, produced from lightly pressed grapes, has higher phenolic and antioxidant activities. This type of pomace has the greatest potential for applications that will benefit animal and human health.