

VASOACTIVITY OF MANTONICO AND PECORELLO GRAPE POMACES ON RAT AORTA RINGS: AN INSIGHT INTO NUTRACEUTICAL DEVELOPMENT

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The valorization of agrochemical wastes has become a low cost and sustainable tendency for the development of functional food. In particular, these enriched products seem to be enjoyable tools to treat metabolic disorders.

In this field, Calabrian autochthonous white grape pomaces (Mantonico and Pecorello cultivar) were firstly investigated for their vasoactive properties.

Skin and seed extracts, obtained by ultra-sound-assisted method in green conditions and characterized by NMR spectroscopy, revealed the presence of numerous vasoactive compounds. Pecorello seed extract showed the most interesting chemical composition due to an exciting amino-acidic component, including GABA and tryptophan and considerable amounts of catechin and organic acids, in particular p-coumaric and gallic acids.

The effects of extracts were analyzed in *in vitro* experiments on rat aorta rings (with and without endothelium), contracted by phenylephrine or KCl. Seeds extracts showed, differently from skins, an appreciable endothelium-dependent, eNOS-mediated vasodilation in the range 1–100 $\mu\text{g/mL}$. In endothelium-denuded rings, myorelaxant activity occurred at higher concentrations as compared to endothelium-intact specimens.

For food marketing purpose, all the extracts were enclosed into a pectin polymer matrix by means of a free-radical grafting procedure.

In the same experimental conditions, the polymers demonstrated the persistence of vasodilator activity only for Pecorello seed extract, which presented the most rich chemical profile.

In conclusion, skin and seed waste represents a source of potentially vasoactive compounds, while the conjugation with pectin to improve their delivery seems not an avenue worth to be paved.