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Horticultural Science

Relationship between antiradical activity, polyphenolic antioxidants and free *trans*-resveratrol in grapes (*Vitis vinifera* L.)

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[fulltext]

Contents of polyphenolic antioxidants as total polyphenols (TP), free *trans*-resveratrol (R) and their antiradical activity (ARA) in grape skins and seeds of grape varieties and TP in grape musts originating from 5 wine-growing Czech areas from the harvest 2003 were determined. TP content was determined spectrophotometrically with phenol Folin-

Ciocalteau ' s reagent, R content by HPLC method, and ARA employing the 1,1-diphenyl-2-picrylhydrazyl stable free radical (DPPH ·). Obtained results were evaluated statistically by Statistica programme. TP did not show any statistically significant differences between the analysed varieties ($p < 0.05$) in grape seeds and skins, but regarding wine-growing regions a significant difference in TP ($p < 0.10$) in grape skins was found. ARA ($p < 0.05$) was not significant either for grape seeds or for grape skins in relation to wine-growing regions and varieties. The highest TP contents were found in grape seeds (536.6 mg/g DM), whereas R contents were higher in the skins (av. 1.67 μg/kg DM). Blue grape varieties showed a higher TP content in grape skins and also in must as compared with white grape varieties. The assessment of ARA of extracts of model constituents of grapes tannin (T) and gallic acid (GA) revealed their higher antiradical activity in comparison with ascorbic acid (AA).

Keywords:

vine; must; skins; seeds; polyphenolic antioxidants; *trans*-resveratrol; antiradical activity; varieties; wine-growing areas

[fulltext]