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Phenolic content and antioxidant potential evaluation of unexploited byproducts from *Vitis vinifera* L.

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Vitis vinifera L. (Vitaceae family) is a popular woody perennial plant commonly used in the winemaking. Unfortunately, viticulture generates huge amounts of residues (i.e. leaves, twigs, seeds, skins), which can cause environmental issues when discarded in open areas. It is therefore extremely important to evaluate the potential reuse of these matrices, to reduce the amount of waste at landfill sites [1,2]. Among the main grapevine by-products, no data on the green pruning residues (GPRs) produced by the annual spring pruning have been reported. Thus, the aim of this work was the analysis and valorization of GPRs from 16 red and white *V. vinifera* cultivars from Piedmont (Italy), by comparing the results with those obtained from the leaves of the same cultivars. An experimental design optimization was performed and the obtained hydroalcoholic extracts were then qualitatively and quantitatively analyzed by HPLC-PDA-MS/MS, with similar polyphenolic profiles for both GPRs and leaves. Quercetin 3-O-glucuronide, caftaric acid and quercetin 3-O-glucoside were the main components of the investigated matrices, although in variable proportions. Considering the prevalent presence of polyphenols in the analyzed extracts their antioxidant activity was evaluated with colorimetric *in-vitro* assays, off-line combined with HPLC-PDA analysis. In this way the contribution of each compound to the antioxidant activity, in terms of radical scavenging abilities, was determined.

These findings could suggest GPRs as a potential source of natural compounds, and therefore promote their use in the food field, as food supplements, which could increase their economic value together with a positive effect on the environment.

[1] Rondeau, P., Gambier, F., Jolibert, F., Brosse, N. Compositions and chemical variability of grape pomaces from French vineyard. *Ind Crops Prod* 2013, 43: 251-254.

[2] Kammerer, D. R., Kammerer, J., Valet, R., Carle, R. Recovery of polyphenols from the by-products of plant food processing and application as valuable food ingredients. *Food Res Int* 2014, 65: 2-12