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ASSESSMENT OF GRAPEVINE STEMS AS SOURCE OF PHENOLICS WITH ANTIOXIDANT PROPERTIES

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Winemaking industry generates considerable amounts of bunch stems that are usually wasted despite their potential value as source of bioactive compounds. Phenolic profiles and antioxidant activities (AA) of bunch stem extracts from eight grape varieties of *Vitis vinifera* L. were determined. Sixteen phenolic compounds (PC) were quantified by high performance-liquid chromatography-diode array detection (HPLC-DAD). The maximum concentrations corresponded to the flavanols (+)-catechin (6462 $\mu\text{g g}^{-1}$ DW), followed by the hydroxycinnamic acid caftaric acid (2967 $\mu\text{g g}^{-1}$ DW) and procyanidin B1 (1987 $\mu\text{g g}^{-1}$ DW). Naringin, myricetin and OH-tyrosol were identified for the first time in grape bunch stems. Total phenolic content (TPC) of extracts assessed as gallic acid equivalents (GAE) ranged between 47 and 125 mg GAE g^{-1} DW. The AA of extracts was appraised by ORAC, ABTS and DPPH assays, with a good correlation between TPC and AA when measured by ABTS and DPPH ($r \geq 0.92$), while for ORAC the correlation was lower ($r \leq 0.41$). Samples of cv. Malbec, the most representative variety of Argentina, presented the highest contents in PC, particularly flavanols. The results showed that grape bunch stems may be an inexpensive, sustainable and high value source of bioactive compounds as functional ingredients.