



Polyphenolic profiles and antioxidant and antiradical activity of Italian berries from *Vaccinium myrtillus* L. and *Vaccinium uliginosum* L. subsp. *gaultherioides* (Bigelow) S.B. Young



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ABSTRACT

Total soluble polyphenols (TSP), total monomeric anthocyanins (TMA), radical scavenging activity (RSA), ferric reducing antioxidant power (FRAP), and a number of anthocyanins, phenolic acids, coumarins, flavanols, dihydrochalcones and flavonols were investigated in Tuscan bilberry (i.e. *Vaccinium myrtillus*) and “false bilberry” (i.e. *Vaccinium uliginosum* subsp. *gaultherioides* Bigelow). *V. myrtillus* berries showed much higher TSP, TMA, RSA and FRAP values than *V. uliginosum* subsp. *gaultherioides* fruits. Moreover, very different profiles of individual phenolics were observed in the two species, being *V. myrtillus* mainly characterised by delphinidin and cyanidin glycosides, together with chlorogenic acid, and *V. uliginosum* subsp. *gaultherioides* dominated by malvidin derivatives and flavonols. Strong differences between the two species regarded also metabolites investigated herein for the first time, such as scopoletin, which was approximately two magnitude orders higher in *V. uliginosum* subsp. *gaultherioides* than in *V. myrtillus* berries. Very different abundances were also highlighted for cryptochlorogenic acid and quercetin-3-rhamnoside that were about ten-fold higher in bilberry than in “false bilberry”. When the anthocyanin composition pattern of Tuscan “false bilberry” was compared to those elsewhere reported for *V. uliginosum* fruits harvested in different world areas, some important differences were observed.