Assessment of fruit quality and antioxidant capacity of some *Vaccinium* berries

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Abstract

This study characterizes the fruit quality attributes and illustrates the differ-ences in biometrical characteristics, taste- and health-related compounds present in wild bilberry (*V. myrtillus*) and two commercial blueberry cultivars of *V. corymbosum* ('Berkeley' and 'Bluecrop'). Fully ripened berries were evaluated for their biometrical characteristics (fruit weight, size, and index of fruit shape), taste compounds (sugars, sweetness index and total acids), and health-beneficial properties (total phenolic content and total antioxidant capacity). *V. myrtillus* exhibited significantly lower values of fruit weight and size in comparison to blueberry cultivars (0.47 g, 8.6 mm and 9.2 mm, respectively). Cultivar 'Berkeley' yielded the highest glucose and fructose contents (70.8 and 88.8 mg/g FW, respectively), and the sweetness index expressed similar trend achieving the highest value for this cultivar (279.2). Conversely, *V. myrtillus* contained abundant quantities of total organic acids as an important attribute of nutritional fruit quality (0.35 mg/g FW). *Vaccinium* species differ greatly in their total phenolic content and a very high value of total phenolics obtained in *V. myrtillus* (3.87 mg GAE/g FW) was 2-fold greater than those of cultivated blueberries. Total antioxidant capacity showed the greatest level for *V. myrtillus* (6.16 mg asc/g FW), probably reflecting similar expressed total phenolic content. Correlation coefficients between total phenolics and total antioxidant capacity ranged from r=0.89 ('Bluecrop') to r=0.95 (*V. myrtillus* and 'Berkeley').