Aronia ×*prunifolia* 'Viking': Horticultural Enigma With Untapped Potential©

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Aronia, commonly known as chokeberry, is a group of deciduous, multi-stemmed, rosaceous shrubs native to eastern North America. Two primary species compose the genus, *A. arbutifolia* (L.) Pers., red chokeberry and *A. melanocarpa* (Michx.) Ell., black chokeberry. A growing consensus now considers *A.* ×*prunifolia* (Schneid.) Grabn., or purple chokeberry to be a unique, self-sustaining species of hybrid origin.

Aronia ×*prunifolia* 'Viking' (syn. *A. melanocarpa* 'Viking') is one of several cultivars that have been selected for their large fruits, robust habits, and cold hardiness. The cultivar and its relatives are a nearly homogenous group possessing a unique phenotype distinct from the wild North American species. 'Viking' was named as a cultivar in Finland in the early 1980s, but can trace its origins to Russian horticulturalist Ivan Michurin nearly a century before. Michurin built his reputation by hybridizing various pome-fruited genera including *Aronia*. After his death the notoriety surrounding his work lead to commercial cultivation of his *Aronia* taxa as a fruit crop within the Soviet Union. By the 1980s 'Viking'-type *Aronia* had become a major crop with 44 thousand acres in cultivation.

The earliest references for *Aronia* cultivation in Europe come from Ukraine in 1816, when it went by the name *Mespilus melanocarpa* (Robertson et al., 1991; Skvortsov, 1983). For the next seven decades references refer to it grown solely as an ornamental, and indistinguishable from wild North American types. By the 1890s, Michurin began working with the shrub, which he considered to be a black-fruited form of mountain-ash. With material he received from German nurseries, Michurin began hybridizing *Aronia* with various pome-fruited species including *Sorbus, Chaenomeles, Malus,* and *Mespilus*. Michurin found that *Aronia* hybridized fairly frequently with many native European *Sorbus*. However, the focus of Michurin's record keeping was primarily on morphological descriptions and less on nomenclature. Given the inconsistencies in his notes, the inclusion of *Aronia* with *Sorbus* in that period, and limited translations of his works, it is not clear Michurin's references to his "black-fruited mountain-ash," refer to one of his hybrid genotypes or to the germplasm he originally received for evaluation. After Michurin's death, his contemporaries, along with the Soviet state, began promoting Michurin's 'Viking'-type *Aronia* as a cold-hardy fruit crop, distributing seed to Siberia, Scandinavia, and other Eastern Bloc countries. Given Michurin's reputation for conducting wide crosses, the propensity for *Aronia* to hybridize with European *Sorbus* and 'Viking's' unique morphology, strong support exists for it to be considered a distinct species. Historically, 'Viking'-type *Aronia* plants have been referred to as *Aronia mitschurinii* Skvortsov et Maitulina.

Scientific interest in *A.* ×*prunifolia* 'Viking' has surged in recent years because of the polyphenols present in the fruits, in concentrations that are among the highest known (Szajdek and Borowska, 2008). Polyphenols (purple pigments) are potent antioxidants, playing a significant role in reducing oxidative stress in cells. Marketing campaigns highlighting the antioxidant qualities for related fruit juices such

grape, cranberry, and *Acai* have proven successful in increasing demand for these products. *Aronia*, with a century of reliable production in Europe, has the potential to be a major competitor in the North American market if it were to receive similar public exposure.

LITERATURE CITED

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