
Malus spectabilis

Scientific Name

Malus spectabilis (Aiton) Borkhausen

Origin/Distribution

Malus spectabilis is native to China.

Synonyms

Malus domestica Borkhausen var. *spectabilis* (Aiton) Likhonos, *Malus microcarpa* A. Savatier var. *spectabilis* (Aiton) Carrière, *Pyrus spectabilis* Aiton, *Malus domestica* var. *spectabilis* (Aiton) Likhonos, *Malus microcarpa* var. *spectabilis* (Aiton) Carrière.

Agroecology

In its native temperate habitat, it is found in plains and mountain regions at elevations of 500–2,000 m. It is frost hardy and thrives in full sun in well-drained mildly acidic to alkaline soils.

Family

Rosaceae

Edible Plant Parts and Uses

Crabapples can be eaten raw or cooked. It can be used in juicing to offset the sweeter apple or pear. Crabapples are an excellent source of pectin and their juice can be processed into a ruby coloured preserves with a spicy flavour and into jellies. Crabapples can be made into cider with an interesting flavour.

Common/English Names

Asiatic Apple, Chinese Crabapple, Chinese Flowering Apple, Crabapple, Doubleflower Chinese Crabapple, Riversii Chinese Crabapple.

Botany

Small deciduous tree, 3.5–8 m high. Branchlets reddish brown, terete, puberulous when young, glabrous when old. Stipules lanceolate and caducous. Leaves elliptic or narrowly elliptic,

Vernacular Names

Chinese: Hai Tang Hua;

German: Pracht-Apfel.



Plate 1 Immature fruit and leaves

5–8×2–3 cm, both surfaces sparsely pubescent when young becoming glabrate, base rounded to broadly cuneate, apex acuminate to obtuse, margin adpressed serrulate. Flowers, bisexual, 4–5 cm across, in 4–6 flowered sub-umbel corymb. Flower hypanthium campanulate; sepals deltoid-ovate; petals dark pink buds opening to single mid-pink, fading to white, ovate, 2–2.5 cm, base shortly clawed, apex rounded; stamens 20–25, unequal, yellow; ovary 4–5 locules with 2 ovules per locule, style 4–5. Pome, pale green with pinkish tinge becoming yellow when ripe, subglobose 3–5 cm diameter, not impressed at apex, convex at base, subglabrous with persistent sepals (Plate 1).

Nutritive/Medicinal Properties

The nutrient composition of raw crabapples per 100 g edible portion had been reported as: water 78.94 g, energy 76 kcal (318 kJ), protein 0.40 g,

total lipid (fat) 0.30 g, ash 0.42 g, carbohydrate 19.95 g, Ca 19 mg, Fe 0.36 mg, Mg 7 mg, P 15 mg, K 194 mg, Na 1 mg, Cu 0.067 mg, Mn 0.115 mg, vitamin C 8 mg, thiamine 0.030 mg, riboflavin 0.020 mg, niacin 0.1 mg, vitamin A 2 µg RAE, vitamin A 40 IU, total saturated fatty acids 0.048 g, 12:0 (lauric acid) 0.001 g, 14:0 (myristic acid) 0.001 g, 16:0 (palmitic acid) 0.040 g, 18:0 (stearic acid) 0.006 g, total monounsaturated fatty acids 0.012 g, 16:1 undifferentiated (palmitoleic acid) 0.001 g, 18:1 undifferentiated (oleic acid) 0.011 g, total polyunsaturated fatty acids 0.088 g, 18:2 undifferentiated (linoleic acid) 0.073 g, 18:3 undifferentiated (linolenic acid) 0.015 g, tryptophan 0.004 g, threonine 0.014 g, isoleucine 0.016 g, leucine 0.025 g, lysine 0.025 g, methionine 0.004 g, cystine 0.005 g, phenylalanine 0.011 g, tyrosine 0.008 g, valine 0.019 g, arginine 0.013 g, histidine 0.006 g, alanine 0.014 g, aspartic acid 0.070 g, glutamic acid 0.042 g, glycine 0.016 g, proline 0.014 g and serine 0.016 g (USDA 2011).

A total of 37 compounds comprising aldehydes, esters and alcohols as the major compounds were identified from the ripe fruits of six crabapple varieties (Red Splendor, Strawberry Parfait, Pink Spire, Radiant, Sparkler, and Flame) (Li et al. 2008). The main aroma compound was 2-hexenal the content of which was 45.37%, 21.98%, 33.56%, 32.21%, 38.60%, and 45.88% in the respective varieties. Other major aroma volatiles were 3-hexenal, hexanal, 2,4-hexadienal, benzaldehyde, and diethyl phthalate. The relative content of aldehydes and esters decreased as alcohols increased in the Red Splendor and Strawberry Parfait fruit as it ripened. For Red Splendor, the main volatile was still 2-hexenal, but the relative content decreased to 42.89%, and the relative content of alcohols increased by 13.86% and aldehydes and esters declined by 12.16% and 7.18%, respectively. For Strawberry Parfait, the main volatile was changed to cyclohexanol, and the relative content increased to 46.43%, while the relative content of alcohols increased by 49.03% as aldehydes and esters declined by 23.74% and 9.34%, respectively.

Other Uses

Crabapples are widely grown as ornamental trees, grown for their beautiful flowers or fruit, with numerous cultivars selected for these qualities and for resistance to fire-blight disease. They are also popular in bonsai culture.

Some crabapples are used as rootstocks for domestic apples to add beneficial characteristics such as cold hardiness. They are also valued as pollinisers in apple orchards.

Comments

Malus spectabilis is one of the most popular ornamental trees in China, widely cultivated in the eastern and northern regions. The cultivated var. *riversii* (G. Kirchner) Rehder has double, pink flowers, and the cultivated f. *albiplena* Schelle, has double, white flowers.

Selected References

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