

Davidson's Plum

Davidsonia pruriens

Davidson's Plum, *Davidsonia pruriens*, is one of the few Australian native trees widely cultivated, not only as an ornamental tree, but also for its edible dark blue plum-like fruits with sour, dark red flesh. The flowers and fruit are curious, referred to as *cauliflorous* as they are produced directly from the tree trunk or from thick branches, rather than from smaller, more slender branches. The flowers also have no petals, only rather conspicuous pink sepals and eye-catching stamens.

Davidson's Plum is a native of tropical rainforests of north-eastern Queensland where it grows from sea level to up to 1000 m altitude, from Cardwell to Cooktown. Altogether there are three *Davidsonia* species. The other two species, *D. jerseyana* and *D. johnsonii* both occur in south-eastern



Queensland and north-eastern NSW. *Davidsonia* belongs in the plant family Cunoniaceae, so is related to our Sydney Christmas Bush (*Ceratopetalum gummiferum*) and Coachwood (*Ceratopetalum apetalum*).



The fruit is highly nutritious, containing high levels of vitamin C, vitamin E, calcium, magnesium, potassium, zinc, lutein and folate. Unsurprisingly, given the intense colour of skin and flesh, the fruit also contains high levels of anthocyanins, naturally occurring pigments that are antioxidants.



Anthocyanins, from the Greek *ánthos* (άνθος) – a flower, *kyanós* (κυανός) – blue, are water soluble plant pigments, pink, red, blue or purple. They occur in the tissues of fruits, flower petals, vegetables and some grains, such as black rice, but are most abundant in fruit. In food, the concentration of anthocyanins is usually proportional to the intensity of colour, and this increases as the fruit ripens. Anthocyanin colour is dependent on pH, red in acidic conditions, blue in basic, although other factors, such as light and temperature can also affect anthocyanin colour. There are associated health benefits from the antioxidative and antimicrobial effects of anthocyanins.



In recent years, *D. pruriens* has moved from being wild harvested to a plantation crop, and production estimates have risen from 10 tonnes in 2012 to 15 tonnes in 2016, with one boutique yoghurt maker alone using 2.6 tonnes in one year. In 2011, the



volume of commercially grown Davidson's plums exceeded market requirements. However, the brilliant red colour suggested that the fruit could be processed as an anthocyanin-based food colourant. It's important for food colouring agents to be stable in treatments involving high temperatures and although its stability exceeded that of mulberry, it could not match that of red cabbage and purple sweet potato. However, the addition of a co-pigment, chlorogenic acid from the Tasmania Pepper Leaf plant (*Tasmannia lanceolata*) resulted in a lasting increase

in colour intensity, demonstrating that extract from the Davidson's Plum can prove to be a useful natural source of food colouring.



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