Family: Malvaceae

Sterculia – named after Sterculius, the Roman God of odour
quadrifida – from Latin meaning split into 4 parts, referring to the fruit

Common names: Peanut tree, red-fruited kurrajong, balkpalk (Yolngu)

Illustrations by K. Dilaj ©

Description: A soft-wooded tree of medium height (to 15m) and spreading habit, forming a dense crown. The simple leaves are oval-shaped, alternately arranged, slightly hairy underneath, and up to 15cm in length. Leaves have a distinctive venation pattern. As with members of the related kurrajong (*Brachychiton)* genus, the trees may lose some or most of its leaves in the spring, pre-flowering. Greenish, lemon-scented flowers grow in racemes, followed by the spectacular fruit, in the form of bright red, hard follicles containing up to 8 smooth black seeds. This distinguishes them from true kurrajongs which have hairy bristles surrounding the seeds.

Photo by Andrew Pengelly

Distribution: From Broken Head in northern NSW up to Cape York, N.T., New Guinea and SE Asia. It is usually found in or near coastal rainforests and vine thickets. The species is a commonly seen around Brisbane - both wild and cultivated.

Edibility: Seeds may be eaten raw (sparingly) or cooked, they do have a peanut-like flavour. There is a thin papery covering, this is ok to eat or may be discarded. Seeds are usually harvested in the early summer, they may be collected from the ground after dropping. Roots of young trees can be eaten raw or roasted.

The seeds are a good source of protein, fat, carbohydrates and minerals—notably potassium, calcium and magnesium.

Medicinal uses: An infusion made from the leaves and bark, or juice squeezed from the inner bark has traditionally been used to relieve sore eyes, while crushed leaves have been used for treatment of wounds and skin complaints. Aborigines also use the heated leaves for relief of bites of insects, stringrays and stonefish. In Indonesia and other parts of SE Asia, the bark, roots and leaves of the species are used for a wide range of conditions, including treatment of typhus, ulcers, diabetes, hepatitis, anaemia and rheumatoid arthritis as well as to increase stamina and reduce fatigue. Traditional preparations include bark decoctions, and an instant tea made from ground bark with added ginger.

Different plant parts of *S. quadrifida* have undergone scientific investigations resulting in findings of antioxidant, antimicrobial, antiviral (hepatitis C), immunomodulatory and cytotoxic (against breast cancer cells) actions.

Phytochemistry: Alkaloids, flavonoids, terpenoids, steroids and triterpenoids have been reported. High concentrations of the condensed tannin epicatechin, (an active constituent of green tea), has been isolated from the stem bark. The seed oil contains cyclopropenoid fatty acids such as sterculic acid.

Safety: *S. quadrifida* seeds have long been used as a food source, with no reported toxicity. However, due to the presence of cyclopropenoid fatty acids in the seed oil, it would be preferable to bake them before eating. Sterculic acid may disrupt cell membrane function. Acute toxicity studies on ethanol bark extracts using Wistar rats found no evidence of toxicity (Noviyanah et al. 2021)

Other species: Other *Sterculia* species have edible and medicinal properties. *S. urens*, a species native to India, produces an exudate known as kayara gum, an ingredient in pharmaceutical, food and industrial products with similar uses to guar and tragacanth gums.

Cultivation: Trees of *S. quadrifida* prefer open, sunny well-drained sites. They do not require any specific soil type, performing well in rocky soils and sandy loams. Only light applications of fertiliser should be applied. The species performs best in tropical and sub-tropical frost-free regions, but it is also successfully cultivated in Perth, WA., which has a Mediterranean climate. It may be pruned annually for better accessibility to the fruit.

Trees may be propagated from fresh seed, scarifying and soaking the seeds overnight assists germination. Optimal temperature is 20-30°C. Stem cuttings have yielded low strike rates.

Role in agroecology: This tree is not widely cultivated as a crop, and there is little agronomic research published. While it may not be suitable for plantation-style cropping, an occasional group of trees between crop rows or scattered around pastures, could enhance overall productivity. *S. quadrifida* is a desirable shade tree with multiple uses that should be considered for any relatively frost-free agroecological system or urban environment. Such benefits include attracting birds, bees and other pollinators. A strong fibre obtained from the bark is used for making twine, nets and fishing lines. With multiple medicinal uses, the tree also contributes to medicinal sovereignty for the local community.

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