Botanical name

Acacia ligulata Cunn. ex Benth., London J. Bot. 1: 362 (1842)

The botanical name is derived from the Latin *ligula* (a little tongue) and *-atus* (provided with), and refers to the strap-like ('oblong-linear') phyllodes found on the original specimens that Bentham described.

Common name

Sandhill Wattle, Dune Wattle, Small Cooba, Umbrella Wattle, and more (see Cunningham *et al.* 1981); for central Australian aboriginal names see Latz (1995).

Characteristic features

Dense rounded *shrubs* or *small trees*. *Phyllodes* somewhat thick and fleshy when fresh (drying +/- coarsely wrinkled), 1-nerved on each face, apices uncinate and with a small gland at the base of the oblique mucro. *Heads* arranged in short racemes, globular, deep golden, flowers sub-densely arranged within the heads. *Calyx* truncate. *Pods* woody, breaking readily at the constrictions between the seeds. Seed *aril* yellow-orange or red.

Description

Habit. Normally glabrous, dense, rounded, spreading *shrubs* or *small trees* (1-)1`.5-3(-5) m tall and 2-5(-8) m wide, dividing at ground level into 3 or more main stems.
Bark. Grey.
Branchlets. Light-brown, sometimes slightly scurfy and distinctly yellow-ribbed.
Phyllodes. Very variable in shape and size, usually linear to very narrowly elliptic, 5-7 cm long and 4-5 mm wide in the Kalannie region (but 3-7.5 cm long and 4-14 mm wide over the range of the species), commonly widely spreading, smooth and somewhat thick and fleshy when fresh, somewhat coarsely wrinkled when dry, not rigid, usually green to sub-glaucous; with 1 *longitudinal nerve* (midrib) on each face; *apices* often uncinate and ending in an oblique mucro, not pungent; *glands* commonly 3 along upper margin of phyllodes, lowermost gland situated 2-20 mm above the pulvinus, other glands smaller with one situated at the base of the apical mucro.
Heads. Arranged in 2-4(-6)-branched racemes which are normally 3-20 mm long, globular, deep golden, sub-densely 19-24 flowered; *flower buds* light green; *peduncles* 2-10(-15) mm long.
Flowers. 5-merous; *sepals* united into a truncate calyx.
Pods. Linear to sub-moniliform, breaking readily at the constrictions between the seeds, 5-12 cm long, 5-9 mm wide, spreading to erect, thick, woody, light brown with often a paler median stripe.
Seeds. Longitudinal in the pods, normally 4-6 mm long, 3-3.5 mm wide, shiny, dark greyish brown to black; *aril* yellow-orange or red.

Taxonomy

Related species. As discussed by Chapman and Maslin (1992) *A. ligulata* belongs to an Australia-wide group of 12 species which has its centre of diversity in Western Australia. The species is particularly closely related to *A. rostellifera* (which does not occur in the Kalannie region): see Chapman and Maslin 1992 for discussion. Apart from *A. ligulata* itself, the only other members of the *A. ligulata* group to occur in the Kalannie region is *A. tysonii* which is recognized by its minutely hairy branchlets, phyllodes, peduncles and pods, shorter and broader phyllodes, generally longer peduncles, broader pods and larger seeds.

Variants. *Acacia ligulata* shows little morphological variation within the Kalannie region. However, across its very extensive geographic range this species displays much variation (see Chapman and Maslin 1992 for discussion).

Distribution

This is one of the most widespread species of *Acacia* in Australia; it is common in central and southern arid Australia, and occurs in all mainland states.

Acacia ligulata is rare in the Kalannie region, this being at the south-eastern limit of its geographic range. Like very many acacias *A. ligulata* is a disturbance opportunist and in the Kalannie region it is sometimes the sole species surviving along very degraded roadverges.

Habitat

Over its geographic range this species is found on a variety of soils; in the Arid Zone it is commonly found on deep sandy soils and on sand dunes.

In the Kalannie region *A. ligulata* grows in slightly to moderately saline, red-brown sand on flats adjacent to salt lakes.

Recorded from the following Kalannie region Land Management Units. Colluvial Flat-Earth; Colluvial Flat-Solodic; Spillway Sand.

Conservation status

Although *A. ligulata* is rare within the Kalannie region in the broader context is not considered rare or endangered.

Flowering

Over its very extensive geographic range *A. ligulata* flowers mainly from August to October (although odd flowers can occur at other times of the year).

In the Kalannie region plants were in flower in September and October 1997.

Fruiting

Over its very extensive geographic range this species produces pods with mature seeds from December to January, or occasionally in November.

In early December 1996 pods on plants of *A. ligulata* in the Kalannie region contained semi-mature seed.

Mature seeds remain attached within the pods for several weeks following dehiscence. According to Latz (1995) the pods on plants of *A. ligulata* in Central Australia mature unevenly and consequently much effort is required to collect large amounts of seed. Although pods can be collected by hand it is more efficient to place a sheet on the ground beneath the plants and shake or gently beat the branches. The seeds can be dislodged from the pods by trampling over the collected material and sieving out clean seed.

Biological features

Growth characteristics. A fast growing species which, according to Elliot and Jones (1982), is frost hardy and drought resistant.
Response to grazing. According to Mitchell and Wilcox (1994) *A. ligulata* can be expected to increase rapidly in arid shrublands where historical overgrazing has occurred and pastures are in a recovery phase.

Weed potential. Fire stimulates the germination of seedlings and in central Australia *A. ligulata* is considered a fire weed.
Seed dispersal. Dispersed by both birds and ants (O'Dowd and Gill 1986).

Propagation

Propagate from seed. Pour very hot water over the seed, allow to cool, and sow at about 5 mm depth. According to Bonney (1994) seed can be sown through a machine tyne to 5 mm depth after opening rains, or covered with soil in scooped out hollows. For tube production Bonney recomends sowing from Autumn or late Spring.

Revegetation

According to Bonney (1994) *A. ligulata* is an excellent plant for revegetation work in arid lands and although it is not common in the Kalannie region it warrants investigation for use in revegetating areas of slight to moderate salinity. This species would be suitable for salinity and erosion control on colluvial earth soils and would be appropriate as a low windbreak. It regenerates rapidly under natural conditions (Cunningham *et al.* 1981).

Utilisation

Salinity control. See Revegetation above.
Soil stabilisation. Valued as a sand dune stabilizer in parts of western New South Wales (Cunningham *et al.* 1981); see also under Revegetation above.
Windbreak. Would make an effective low windbreak on account of its large, porous crown.
Shade, shelter and visual screen. On account of its large spreading crown this species has potential for providing shade and shelter for stock and would be good as a visual screen.
Wildlife refuge. In parts of western New South Wales *A. ligulata* provides a favoured resting place of Kangaroos (Cunningham *et al.* 1981).
Fodder. The foliage of this species is reported as not highly palatable to stock in Western Australia (Mitchell and Wilcox 1994) and central Australia (Chippendale and Jephcott 1963). However, in western New South Wales it is eaten in some areas and not touched in others (Cunningham *et al.* 1981).
Seed for human food. Although there are a number of reports of the seeds of this species having been consumed by traditional aborigines (see references cited in Maslin *et al.* 1998) *A. ligulata* is not one of the species highly recommended by Maslin *et al.* (1998) for trialling in southern Australia as a "human food".
Aboriginal useage. According to Latz (1995) *A. ligulata* is commonly used by traditional central Australian aborigines. Its seed and gum are consumed, along with grubs that are found in its roots. Its ash is favoured for use with pituri (*Duboisia hopwoodii*) as a narcotic. The smoke from its leaves is considered to have benefits for a range of illnesses and a decoction of its bark is used as a medicinal wash.

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