



AcaciaSearch

Evaluation of *Acacia* as a woody crop option for southern Australia

by B.R. Maslin and M.W. McDonald

RIRDC Publication No. 03/017

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Acacia is a diverse and enormous genus with almost 1000 species currently recognized for Australia. There are 462 Acacia species (comprising 538 taxa) that occur naturally within the target area for this study, which encompasses Western Australia, South Australia, Victoria and New South Wales. This report identifies, evaluates and provides detailed information for Acacia species considered prospective as new woody crop plants in the agricultural region of southern Australia (within the 250–650 mm rainfall zone). Large-scale commercial plantings with perennial plants are in demand as a treatment for salinity control in these regions, and species were evaluated for their potential suitability as feedstocks for selected products.

Acacia murrayana F. Muell. ex Benth.

Common Names

Colony Wattle, Murray's Wattle, Sandplain Wattle, Powder Bark Wattle, Fire Wattle.

Habit

Large shrubs or trees 2–6 (–8) m, single- or multi-stemmed from the base, main stems straight or sometimes rather crooked and with dbh to about 10–20 cm (note: few measurements made therefore needs confirming), commonly suckering to form clonal thickets; crowns bushy and often wide-spreading 3–8 m across. Bark smooth becoming fissured on trunks and main branches with age, grey or brown with a distinctive powdery white bloom (pruinose) at least when young.

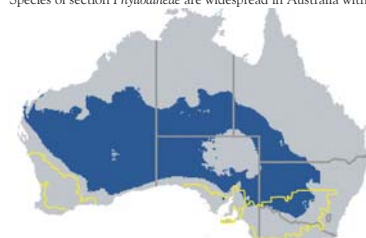
Botanical descriptions and illustrations/photographs are provided by Cunningham *et al.* (1981), Turnbull (1986), Whibley & Symon (1992), Tame (1992), Mitchell & Wilcox (1994), Doran & Turnbull (1997), Maslin *et al.* (1998), Maslin (2001 & 2001a) and Kodala (2002); see also descriptions by Pedley (1980).

Taxonomy

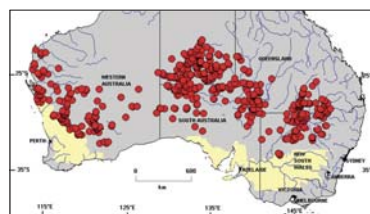
Acacia murrayana is referable to *Acacia* section *Phyllodineae*, a diverse, and probably artificial, group of about 408 species (Maslin 2001) which are characterized by having '1-nerved' phyllodes and flowers arranged in globular heads (see Maslin & Stirton 1998 and Maslin 2001 for discussion). Species of section *Phyllodineae* are widespread in Australia with the main centres of richness located in temperate and adjacent semiarid areas of eastern, southeastern and southwestern Australia; species number greatly decline in the arid zone and in northern tropical/subtropical areas (Hnatiuk & Maslin 1988 and Maslin & Pedley 1988).

Acacia murrayana, together with four close relatives (*A. gelasina*, *A. pachyacta*, *A. praelongata* and *A. subrigida*) comprise the informal '*Acacia murrayana* group' (see Maslin 1995 for discussion); only *A. murrayana* itself is included in this report. This species is not far removed taxonomically from *A. victoriae* (see species profile below).

Within *A. murrayana* there is marked variation in phyllode size and colour between plants from different areas and future studies may show the need to recognize new taxa to accommodate at least the two main phyllode forms (i.e. plants with narrow, green phyllodes are common in Queensland; elsewhere phyllodes are normally wider and pruinose). According to Maslin *et al.* (1998)



Map 44. Predicted area (blue) where *A. murrayana* is climatically suited for cultivation; this area is derived from a bioclimatic analysis of the natural distribution (red circles, Map 43), see also Table 5. Target area shown in yellow.



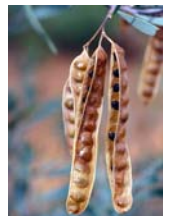
Map 43. Distribution of *A. murrayana*.



A – Adult plants in Flinders Range, S.A. (Photo: Anonymous, ex herb. Adelaide)



B – Young stems (white pruinose). (Photo: J. Simmons)



C – Mature (papery) pods. (Photo: B.R. Maslin)



D – Adolescent plant showing bushy growth habit. (Photo: B.R. Maslin)



E – Branch showing golden heads (in racemes). (Photo: B.R. Maslin)



F – 2-year old plants in trials at Morawa, W.A. (Photo: J. Carlisle)