Acacia auriculiformis A. Cunn. ex Benth

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FABACEAE (BEAN FAMILY)

No synonyms

Ear form acacia, ear leaf wattle, kasia, northern black wattle

Acacia auriculiformis is native to the savannas of Papua New Guinea and Irian Jaya, the islands of the Torres Strait, and northern Australia (National Academy of Sciences 1980, Turnbull 1986). The tree has been extensively planted in moist habitats throughout the tropics and in many subtropical areas.

Acacia auriculiformis is a fast-growing, medium-sized tree that has phyllodes—modified petioles that look like simple, lanceolate, parallel-veined leaves. The tree may reach 30 m in height and 60 cm d.b.h. in the most favorable environments and has a crooked trunk that is often forked and has reddish brown or gray-brown bark (National Academy of Sciences 1980). The crown is formed of relatively few robust limbs and does not cast a dense shade. In its native habitat, *A. auriculiformis* grows between sea level and 400 m where mean annual rainfall varies from 900 to 2000 mm in a monsoonal pattern (Turnbull 1986) and mean annual temperatures range from 26 °C to more than 30 °C (National Academy of Sciences 1980). The tree will grow in a wide variety of soils including oxisols, soils with sand or clay texture, salty soils, and soils with pH ranging from 3.0 to 9.5 (National Academy of Sciences 1980). *Acacia auriculiformis* grows best in humid, deep, medium-textured, alluvial soils.

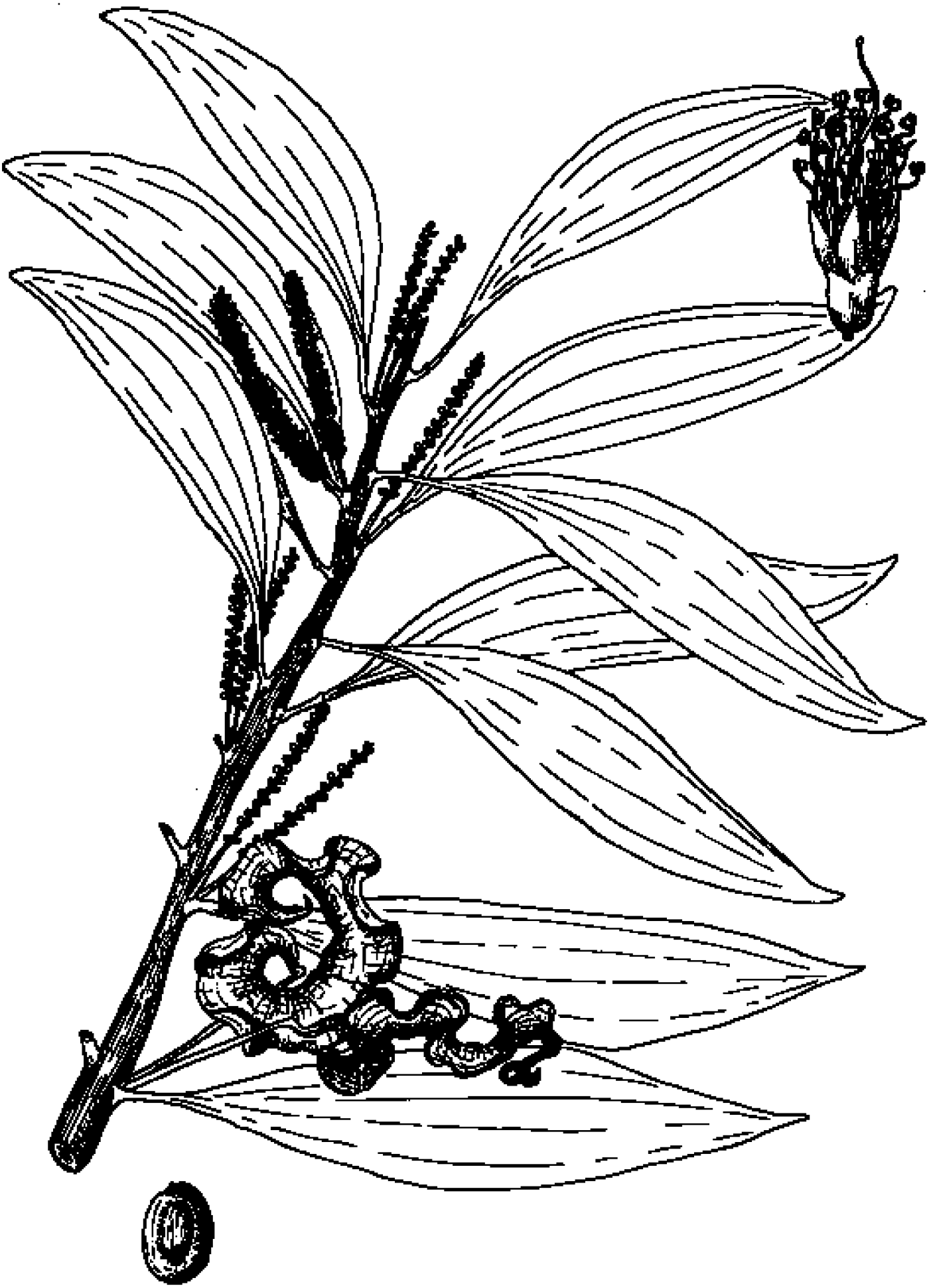
Genetic variation among provenances of *A. auriculiformis* is probably high with considerable potential for genetic improvement, stem form being the major selection criterion (Gavinlertvatana and others 1987). Hybrids of *A. auriculiformis* and *A. mangium* frequently arise when the two species grow adjacent in plantations or natural stands (Turnbull 1986). *Acacia auriculiformis* is a diploid species with 26 chromosomes (Brewbaker and others 1983).

Acacia auriculiformis is cultivated widely for fuelwood and charcoal. It has a relatively high specific gravity (0.60 to 0.75) and caloric value (4,800 to 4,900 kcal per kg), and the wood burns well (National Academy of Sciences 1980). The species is favored for revegetating mine spoils and other degraded lands (Turnbull 1986) and is planted extensively as a shade and ornamental tree (Barrett 1956). The wood is used to a limited extent for pulp (National Academy of Sciences 1980).

Tiny, 3-mm flowers, with both male and female parts (Little 1983), appear June through July in Australia (Turnbull 1986) and February through April in Puerto Rico (Parrotta 1997). They are borne on spikes up to 8 cm long in pairs on the leaf axils (Turnbull 1986). Seed pods are flat, twisted, and undulating when ripe, 2 to 4 months after flowering. The small black seeds, 4 to 6 mm long and 3 to 4 mm wide, are encircled by a long red or orange funicle (string) from which they are suspended after the pods open. Each pod contains up to 15 seeds (Parrotta 1997).

Pods can be clipped from the trees with pruning poles after they turn dark brown or after they open. After air drying, small quantities of seed can be separated by hand. Larger seed lots should be hammermilled and separated by shaking and blowing. The process is difficult because the funicle tangles with debris and screens. The seeds, numbering about 30,000 to 62,000 per kg (Turnbull 1986, Wiersum and Ramlan 1982), may be stored at ambient temperatures in air-tight containers for 18 months (Wiersum and Ramlan 1982).

Pregermination treatments are required for good germination. At least two methods have given good results: immersing in boiling water followed by cooling and soaking for 24 hours (National Academy of Sciences 1980) and soaking in warm water for 24 hours, then sowing in full light (Wiersum and Ramlan 1982). In tests conducted in Puerto Rico, germination of fresh seeds without pretreatment was 4 percent, while hot water pretreatment increased germination to between 47 and 65 percent (Parrotta 1997). Germination starts in about 6 days (Wiersum and Ramlan 1982).

Seeds should be sowed under full light in germination

trays or beds filled with loose, well-drained soil at depths of 0.6 to 1.2 cm (Parrotta 1997). Seeds can also be sowed directly into containers and thinned later. Seedlings first develop true pinnately compound leaves. When the narrow phyllodes develop, the seedlings can be pricked into pots or nursery bags. Seedlings can be outplanted into prepared sites in about 3 months, when they reach 15 to 30 cm in height; larger seedlings should be used where severe competition from weeds or grass is expected (Turnbull 1986). Seedlings 1 to 2 m in height grown in 4- to 12-liter pots are used for shade or ornamental trees. On most sites, periodic control of weeds, grass, and vines will be necessary for 1 to 2 years after planting.