ENTHEOGENESIS AUSTRALIS

Reference guide for common wattles: Acacia acuminata, A.floribunda and A. longifolia

entheogenesis.org

Acacia longifolia flower. Photo by Liam Engel.

There are many, many *Acacia* species, about 1400 in total. Almost 1000 of these *Acacia* species are native to Australia. *Acacia pycnantha* appears on Australia's floral emblem, and on September 1st, the entire country welcomes the sweet scent of blooming Acacia flowers with our celebration of National Wattle Day.

For First Nations people, the long-time custodians of these plants, Acacia have immense cultural significance, as well as many important applications such as fuel, food, medicine, and uses in the production of tools. In contemporary Australia, Acacia trees are used primarily as timber, although there is an emerging market for foods in which Acacia seeds are an ingredient. Acacia seeds are ground and sold as a flour substitute with increasing frequency.

Acacia seeds. Photo by Communacacian.

This guide focuses on three common Acacia species: *A. acuminata*, *A. floribunda*, and *A. longifolia*. In terms of visual identification, these three species are part of a group of Acacia that have simple phyllodes (rather than bipinnate leaves) and cylindrical flower spikes (as opposed to having flowers arranged in a ball-shape).

Acacia seedlings all start with bipinnate leaves and develop phyllodes as they age. Some of the seedlings pictured are starting to develop their first phyllodes. Photo by Communacacian.

Acacia cultriformis. Note the ball shaped flowers and triangular phyllodes. Photo by Liam Engel.

A number of Acacia species in this phyllode/flower spike group are reported as sources of the psychedelic tryptamine, dimethyltryptamine (DMT). DMT containing Acacia are vastly under-researched. Within some Acacia species, the concentration of DMT and the relative ratio of DMT to other alkaloids appears to be variable between individual plants and populations of the same species, and even between cloned plants. This variability suggests that besides genetics, environmental conditions such as season, climate, rainfall, and nutrient availability may all impact Acacia alkaloid profiles.

Some rare Acacia species are threatened by people harvesting material from the wild. Even the common species reviewed in this document could become threatened if people harvest wild plants. For the health of wild populations, and for the sustainability of our ecological relationships in general, it is best to preference cultivated Acacia over wild grown Acacia.

Acacia acuminata

Acacia acuminata Bentham.

Acacia acuminata. Note the tapered tip of the phyllodes and the deep yellow coloured inflorescence. Photo by Communacacian.

'Raspberry Jam Wattle'

The common name 'Raspberry Jam Wattle' refers to the smell of freshly cut *A. acuminata* wood, which has a sweet smell not unlike raspberry jam. In Latin, acuminata means to taper to a point, describing the end tip of an *A. acuminata* phyllode.

Several informal variants of *Acacia acuminata* are recognised and these are distinguished by differences in seed size and shape, and phyllode width.

Acacia acuminata variant 1 (wide phyllodes with large round seeds; plant on left) and small seed variant (wide phyllodes and small, compressed seeds; plant on right). Photo by JJ.

The typical variant has wide phyllodes and relatively flat seeds—named 'typical' because these reflect the type specimen used to name the species. Other variants include the small seed variant and the narrow phyllode variant.

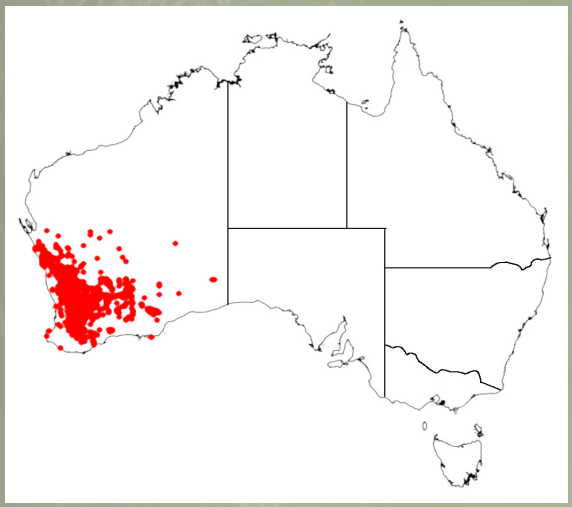
Acacia acuminata typical variant. Pendulous growth form in foreground, erect growth form in background. Photo by JJ.

Acacia acuminata typical variant seeds. Photo by JJ.

The species *Acacia burkittii* and *Acacia oldfieldii* have a similar appearance to *A. acuminata* but occur in different habitats and have different distributions. These trees have occasionally been mistaken for one another.

Habitat and distribution

Acacia acuminata occurs in the southwestern corner of Western Australia, in granitic loams in open woodlands and tall shrublands, on drainage lines and around granite outcrops.



Distribution of *Acacia acuminata*. Image from Atlas of Living Australia.

Species description

Branchlets: Angled upwards, rarely drooping down.

Phyllodes: Flat, margins fringed with tiny hairs on the margin, straight to shallowly incurved. 0.3-1 cm wide up to 18 cm long.

Inflorescences: Bright, lemon yellow flowers in spikes up to 3 cm long. Flowering in-situ July – October.

Pods: Flat and raised over seeds. Pods measure 0.25-0.7 cm wide and 3-8 cm long.

Pharmacology

Acacia acuminata (typical variant) stems and phyllodes have yielded 0.72% alkaloids (primarily a phenethylamine-like base). *A. acuminata* (typical variant) phyllodes have also been found to contain 0.6-0.8% DMT.

In contrast to the other Acacia species presented in this document, *A. floribunda* and *A. longifolia*, different *A. acuminata* populations, apart from the small-seed variant, are reported to be more consistently psychoactive.

Acacia floribunda

Acacia floribunda (Ventenat) Willdenow.

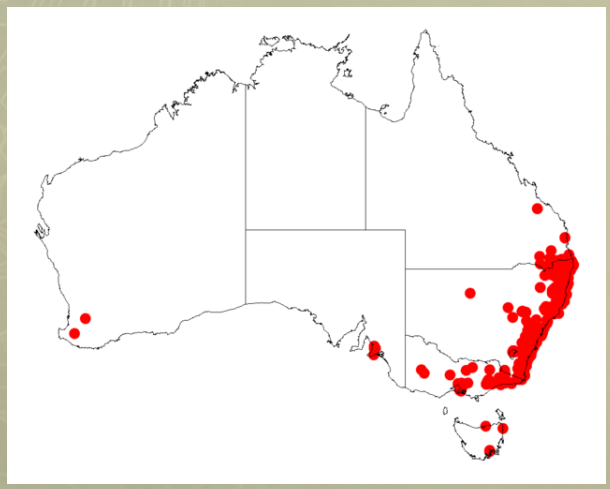
Acacia floribunda. Photo by Liam Engel.

'Gossamer Wattle'

In Latin, floribunda means many-flowering. True to its name, *A. floribunda* is renowned for its abundant floral display.

Habitat and distribution

Acacia floribunda is naturally distributed along the east coast of Australia, from southeast Queensland to eastern Victoria. *A. floribunda* is cultivated worldwide and has become widely naturalised within Australia and overseas. *A. floribunda* commonly occurs along riverbanks on sandy, alluvial soils.



Acacia floribunda distribution map. Image from Atlas of Living Australia.

Species description

Branchlets: Angled upwards, rarely drooping down. New growth covered in white hairs.

Phyllodes: Up to 19 cm long and 12 mm wide. One to three longitudinal veins prominent and anastomising. Small base gland.

Inflorescences: Cream or pale-yellow flowers in spikes up to 6 cm in length. In-situ flowering August – October.

Pods: Straight to curved, raised over seeds. Pods measure 6-13 cm long by 0.2-0.5 cm wide.

Pharmacology

Published studies of plant material from *A. floribunda* have reported mostly tryptamine and traces of phenethylamine but have not reported the occurrence of DMT, which is curious given anecdotal reports of *A. floribunda* being a popular DMT source. TLC/GCMS of *A. floribunda* found mostly (<0.1%) DMT in phyllodes, as well as n-methyltryptamine (NMT) and small amounts of tryptamine, harman and norharman. Reports suggest DMT content of *A. floribunda* varies substantially between populations, with some populations seeming to be entirely inactive.

Acacia longifolia

Acacia longifolia Andrews (Willdenow).

Acacia longifolia. Photo by Liam Engel.

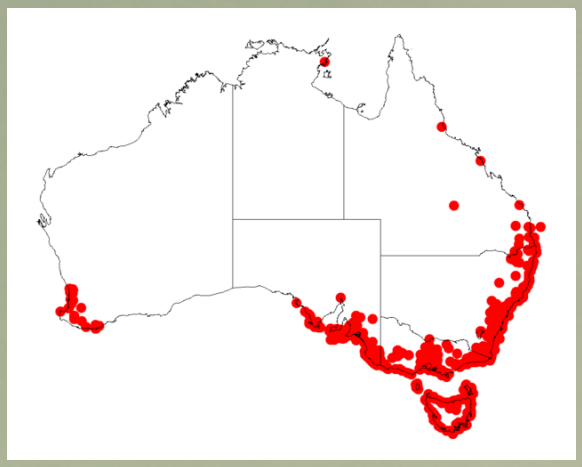
'Golden Wattle'

In Latin, the name 'longifolia' is a reference to long leaves, or in this case, long phyllodes.

Acacia longifolia appears to have hybridised quite widely in-situ. The species description below refers to *A. longifolia* ssp. *longifolia* (a taller tree with thinner phyllodes). While the pharmacology of *A. longifolia* ssp. *sophorae* (a shorter tree with wider phyllodes) also receives a mention, it is likely the diversity of plants within the *A. longifolia* species is far more complex than is portrayed by this document.

Habitat and distribution

The natural range of *A. longifolia* ssp. *longifolia* is thought to be from south-eastern NSW to eastern Victoria, but owing to widespread cultivation and naturalisation, this species is now widely distributed across southern Australia and overseas. Often grows in sclerophyll woodland or coastal heath.



Acacia longifolia distribution map. Image from Atlas of Living Australia.

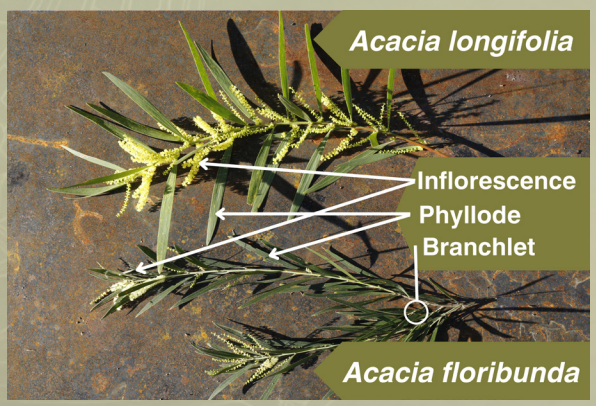
Species description

Branchlets: Angled upwards. New growth covered in white hairs.

Phyllodes: Straight to curved, raised over seeds. Pods measure 5-22 cm long by 0.04-0.2 cm wide.

Inflorescences: Bright yellow flower spikes 2-5 cm long, occasionally appearing lighter yellow in colour. Flowering in-situ June to October.

Pods: Straight to twisted, raised over seeds. Pods measure 4-19 cm long by 0.25-0.6 cm wide.



Acacia features for taxonomy. Image by Liam Engel.

Pharmacology

A small number of anecdotal reports suggest some populations of *A. longifolia* that are psychoactive, but there is limited data to support these claims. Analysis of bark from *A. longifolia* ssp. *longifolia* has identified N-methyl-tyramine, hordenine, NMT, N-formyl-NMT, N-methyl-tetrahydroharman as well as other compounds. Some, but not all analyses of *A. longifolia* ssp. *longifolia*, have identified DMT, up to 0.2%, with reports of greater DMT yields occurring during winter. Identification of DMT in *A. longifolia* ssp. *sophorae* has also been occasional, but inconsistent.

Conservation

Rare, threatened and common Acacia are routinely stripped of bark, cut and pulled from the ground. This kills Acacia trees. Even common Acacias may become threatened if this wild harvest continues. We can help protect Acacia by planting them in our own gardens. The Conseracacian Acacia conservation project also encourages the DMT industry to protect Acacia by;

1. Confirming the source and preferencing DMT products made sustainably, from cultivated material.
2. Avoiding wild Acacia. Discouraging making DMT products made from wild Acacia and other plants collected in habitat.
3. Mindful harvesting. If a DMT product has been made from wild Acacias, preference products made with fallen or dead material from common species. Do not support harvesting material from living trees or without landowner consent.

Many Acacia species can be obtained from native nurseries (or you can easily grow the tree from seed), and furthermore, illegal procurement and or harvesting is not desirable for the environment and sustainability of the trees.

An endangered Acacia, listed as rare and threatened. Photo by Jonathan Carmichael.

Safety and harm reduction

Tree identification should always be confirmed by an expert. There are reports of animals being poisoned after eating Acacia material containing cyanogenic glycosides, which can cause poisoning and death. Making a tea or 'brew' from Acacia will not remove cyanogenic glycosides; this removal requires more sophisticated chemistry techniques.

The veins observable on phyllodes are often used in Acacia identification. This magnified image shows one primary midvein on an Acacia phyllode. Image by Communacacian.

Modern use of DMT has been documented in Australia from the early 1990's. DMT is reported as being smoked in quantities between 15 and 60 milligrams. DMT Acacia extract effects last 5–20 minutes, with after-effects lasting 1–2 hours, seemingly longer than synthetic DMT. Changa effects last 15–60 minutes, with after-effects lasting 3+ hours. Ayahuasca effects last 4–8 hours, with after-effects lasting 8+ hours.

Harmalas (beta-carbolines) have powerful interactions with other drugs and prescription medications, including ecstasy (MDMA) and anti-depressants. To avoid death or illness, before taking DMT, changa or ayahuasca, you should research your intended combination, starting with the Entheogen Combination Matrix and PsychCombo.

To reduce negative effects, DMT, changa and ayahuasca consumers should be in a comfortable mental, physical and social environment. These consumers should also avoid consuming alone and fast for a short time beforehand.

Legal issues

Under the Environment Protection and Biodiversity Conservation Act 1999, the removal of any biological material from public land without a collection permit is illegal and may result in a fine.

There is the possibility of an additional offence if police are notified. Acacia that contain DMT are classified as Schedule 9 substances. Being found in possession of DMT-containing material is illegal in Australia and may lead to a fine and criminal conviction, with the possibility of jail time. Cultivation may be considered manufacture of a Schedule 9 substance.

Tubular Acacia flowers can be seen on the Australian $50 note. Photo by Communacacian.

Emergency assistance

If you experience an emergency in Australia, always phone 000. Information about poisoning can be accessed by phoning the national poisons hotline on 131 126.

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Glossary

Bipinnate leaves:	Leaflets grow in pairs on a secondary branchlet, branching off a middle vein.
Branchlets:	A small subdivision of a branch.
Cultivated:	Planted by humans, as opposed to occurring naturally in the wild.
Inflorescences:	All the parts of a flower.
In-situ:	Growing in habitat.
Phyllode:	A winged leaf stalk.
TLC/GCMS:	Thin Layer Chromotography/Gas Chromotography Mass Spetrometry; a chemistry technique for identifying chemical compounds in a plant.
Type specimen:	The collected and preserved plant specimen nominated by scientists to represent a species name.

Disclaimer

This document cannot cover all information regarding this diverse area of study. This document is only a starting point and should be used in conjunction with other evidence concerning ethnobotanical plants, fungi and related compounds.

Ethnobotanicals have risks and benefits and should always be treated with caution and respect. Some practices and ideas associated with the use of ethnobotanicals are embedded in cultural and religious traditions.

Research, due diligence, and caution are essential. Ensure to understand local laws, traditions, and sustainability before working with any ethnobotanicals.

Who we are

Entheogenesis Australis (EGA) is a charitable, educational organisation established in 2004. We provide opportunities for critical thinking and knowledge sharing on ethnobotanical plants, fungi, nature and sustainability.

We also encourage gardening and the conservation of plants, fungi and seeds that have a traditional relationship with humankind. We aim to celebrate culture, science, art, politics, and community around medicine plants through our events and educational resources.

entheogenesis.org **gardenstates.org**

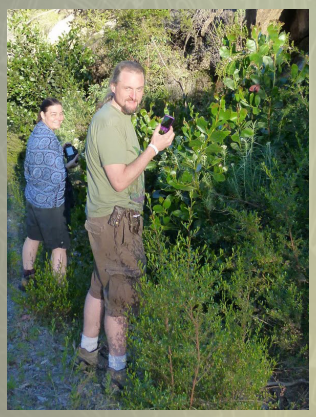
If you find this resource helpful, please consider supporting the work of EGA.

entheogenesis.org/support

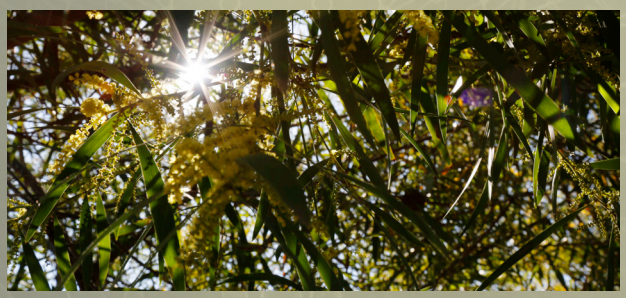
Reference images of Acacia

Putative *Acacia longifolia* x *Acacia oxycedrus* hybrid. Photo by JJ

Acacia acuminata. Photo by Communacacian.



EGA Acacia ID walk with Fire and Earth Erowid (L) and Dennis McKenna (R). Photo by Michael Bock.



Acacia longifolia. Photo by Liam Engel.

Acacia seedlings. Photo by Communacacian.

Root nodules forming on Acacia seedling. Photo by Communacacian.

Acacia acuminata. Photo by Communacacian.

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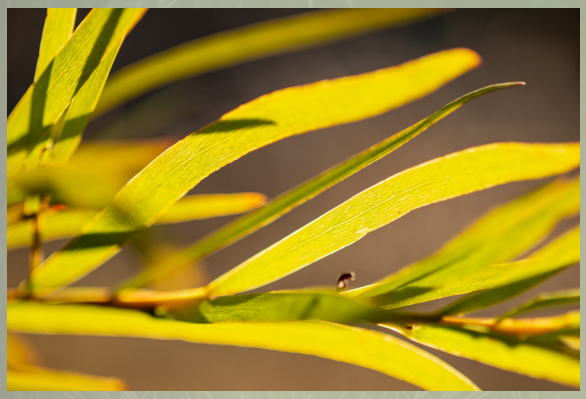
Acacia floribunda. Photo by Tony Daveys

An endangered Acacia, listed as rare and threatened. Photo by Jonathan Carmichael.



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