

# Blue agave

*Agave tequilana*



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# Summary

*A. tequilana* (blue agave) is native to the arid highlands of Mexico, where it is cultivated to produce tequila. More recently, there has been some interest in the potential to produce ethanol (“biofuel”) from this plant.

This study was unable to find evidence that *A. tequilana* was a weed anywhere in the world. However, at least 10 congeners have been listed as weeds elsewhere, with three species listed as weeds in southeast Queensland: *A. americana* (century plant), *A. vivipara* and *A. sisalana* (sisal hemp, sisal).

Suitable habitats in Queensland appear to be limited to sandy soils in arid and semi-arid subtropical areas.

Based on the evidence collected in this preliminary study, *Agave tequilana* appears to pose a low weed risk.

## Identity and taxonomy

**Species:** *Agave tequilana* FAC Weber (includes commercial var. “azul”)

**Other synonyms:**

*Agave palmaris* Trel.

*Agave pedrosana* Trel.

*Agave pes-mulae* Trel.

*Agave pseudotequilana* Trel.

*Agave subtilise* Trel.

**Common names:**

“blue agave”, “Weber’s blue agave” or “tequila weed”

**Family:** Agavaceae

## Description

Like other *Agave* species, *A. tequilana* grows as a large rosette of thick, fleshy leaves, each ending in a sharp point (see cover photo).

## Native range and global distribution

*A. tequilana* is native to the central western highlands of Mexico (Jalisco, Oaxaca and Puebla) (USDA 2009).

## Preferred habitat and climate

Within its native range, *A. tequilana* favours sandy soils in arid or semi-arid areas. While Mexico and Central America lie in the tropics, *A. tequilana* grows at altitudes of more than 1,500 metres (m), where climate is considerably cooler than lowland areas.

## Reproduction and dispersal

Each plant is monocarpic, flowering only once (at about five years old). During flowering, a “mast” (stem), up to five metres tall, grows from the centre of the plant and bears a large number of tubular, yellow flowers.

Within its native range, *A. tequilana* is pollinated by a locally native bat (*Leptonycteris nivalis*) and produce several thousand seeds per plant. The plant then dies.

*Agave* species do not appear to produce seeds in Australia, perhaps due to an absence of suitable pollinators. Reproduction of *Agave* species in Australia is believed to be restricted to vegetative reproduction.

Specimens have been recorded to live for 50 years in gardens.

## History as a weed overseas

*A. tequilana* is listed as “introduced” by Randall (2002), but not naturalised or weedy. However, Randall listed 10 congeners: *A. americana*, *A. angustifolia*, *A. attenuata*, *A. decipiens*, *A. desmettiana*, *A. lecheguilla*, *A. schottii*, *A. sisalana*, *A. vivipara* and *A. weberi* as either naturalised or weedy.

Holm et al. (1979) listed *A. lecheguilla* and *A. sisalana* as weeds.

*A. americana* (century plant), *A. vivipara* and *A. sisalana* (sisal hemp, sisal) are naturalised in southeast Queensland (Queensland Herbarium 2007). Perhaps the most problematic species are *A. americana* and *A. sisalana*, which form small clumps close to where they were originally planted. Such clumps are sometimes impenetrable due to their strong thorns. Control is sometimes undertaken within conservation reserves (eg. some island national parks in north Queensland).

## Use

*A. tequilana* var. “azul” is the base ingredient of tequila, a popular alcoholic drink, and an important economic product of Mexico where some 800,000 ton is processed annually (Ballinas et al. 2008). Some 200 million specimens are cultivated in the western central highlands of Mexico.

Tequila is produced by removing the heart of the plant in its twelfth year, normally weighing between 35–90 kg. This heart is stripped of leaves and heated to remove the sap, which is fermented and distilled. Other beverages like mezcal and pulque are also produced from blue and other agaves by different methods (though still using the sap) and are regarded as more traditional.

More recently, there has been some interest in the potential to grow *A. tequilana* as a source of biofuel (ethanol).

## Current distribution and impact in Queensland

*A. tequilana* is not listed as naturalised in Queensland (Queensland Herbarium 2007). However, it is cultivated as an ornamental.

## Potential distribution and impact in Queensland

This study was unable to find evidence that *A. tequilana* was a weed anywhere in the world. However, at least 10 congeners have been listed as weeds elsewhere, with three species listed as weeds in southeast Queensland. The latter species are generally considered to be minor weeds, despite being capable of forming dense, localised thickets (spread is slow, due probably to the absence of viable seeds).

*A. tequilana* is perhaps best suited to sandy soils in arid and semi-arid subtropical areas.

## References

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