

ENTHEOGENESIS AUSTRALIS

San Pedro Lookalikes: Identifying *Trichocereus* imposters

entheogenesis.org

San Pedro, also known as Huachuma or *Trichocereus* species, have an ancient cultural history and are the most sustainable mescaline cacti. San Pedro also have a more recent history amongst growers and gardeners. Some of the first Australian San Pedro were imported by Ralph Field in the 1930s.

These plants have columnar bodies that are green to blue-grey in colour, with a tendency to grow new columns from their base. Spines are tapered and can vary in size, number and colour. Some San Pedro have spines so small they're impossible to see.

San Pedro have hairy flower tubes that always have white petals, except for the pink flower of one San Pedro species (*Trichocereus talhuayacensis*). To the untrained eye, flowers are the easiest way to distinguish San Pedro from lookalike cacti, but these cacti tend to flower infrequently.



San Pedro in bloom. Image by Liam Engel.

San Pedro names

All San Pedro species are likely related, and some have argued all San Pedro should be considered a single species. *Trichocereus macrogonus* is the earliest name attributed to San Pedro, and if San Pedro are all the same species, the rules of taxonomy would require us to label all San Pedro as *T. macrogonus*.

Patrick Noll (2016) recognises twenty species within the San Pedro Group:

Trichocereus pachanoi, *T. peruvianus*, *T. bridgesii*, *T. macrogonus*, *T. cuzcoensis*, *T. scopulicola*, *T. huanucoensis*, *T. pallarensis*, *T. crassicostratus*, *T. knuthianus*, *T. tarmaensis*, *T. riomizquensis*, *T. santaensis*, *T. puquiensis*, *T. schoenii*, *T. uyupampensis*, *T. chalaensis*, *T. glaucus*, *T. talhuayacensis*, and *T. cephalomacrostitas*.



Three typical San Pedro species. From left to right - *T. pachanoi*, *T. peruvianus* and *T. bridgesii*. Image by Liam Engel.

While extensive DNA testing is needed to resolve these species debates, horticulturalists are much less strict with naming conventions than botanists. You might have heard of the classic San Pedro 'PC' - also known as *Trichocereus pachanoi* 'Predominant Cultivar'. This name is more relevant to horticulturalists than to botanists. For horticulturalists, plants are more like people. From this perspective, all San Pedro have unique and individual characteristics, just like we all have different faces and different names.

Arguments over names isn't limited to San Pedro - people disagree over the names of San Pedro lookalikes too, as well as the names of other plants, animals and everything else. The lookalike named in this guide as *Lophocereus marginatus* may also be known by the name *Marginatocereus marginatus*, *Pachycereus marginatus*, *Stenocereus marginatus*, *Lemaireocereus marginatus*,

as Mexican fence post, organ pipe or by one of many other names. Taxonomy is always a work in progress and this guide exists simply to help people learn to better distinguish San Pedro cacti from their lookalikes. The names of many of the cacti pictured will be debated well into the future.

Other relevant *Trichocereus* species

The genus *Trichocereus* contains several other species that may be of interest to people hoping to identify San Pedro.



T. spachianus. Powerful graft stock, prolific flowering, very spiny, contains hordenine. Image by Krzysztof Ziarnek.



T. terscheckii. Much thicker than San Pedro, slow growing, contains mescaline. Image by Liam Engel.



T. validus. Likely a *T. terscheckii* hybrid. Image from Trichocereus.net.

San Pedro lookalike genera

This guide recognises more than 60 species of common San Pedro lookalikes across almost 20 different genera: *Borzicactus*, *Browningia*, *Carnegiea*, *Cereus*, *Cleistocactus*, *Haageocereus*, *Harrisia*, *Leucosteles*, *Lophocereus*, *Loxanthocereus*, *Myrtillocactus*, *Neobuxbaumia*, *Oreocereus*, *Pachycereus*, *Pilosocereus*, *Polaskia*, *Rauhocereus*, *Stenocereus* and *Stetsonia*.

Each of the following sections lists species within these genera that may be misidentified as San Pedro. Identifying features useful for distinguishing lookalikes from San Pedro are provided.

Borzicactus spp.

Lookalikes include *Borzicactus fieldianus*, *B. hystrix*, *B. plagiotoma* and *B. sepium*.

Identifying features and alkaloids:

- Wavy ribs
- Content not yet analysed



Borzicactus fieldianus. Image by Ben Kamm.

***Browningia* spp.**

Lookalikes include *Browningia amstutziae*, *B. hertlingiana*, and *B. pilleifera*.

Identifying features and alkaloids:

- Wavy ribs
- Potential non-mescaline-related psychoactivity



Browningia hertlingiana. Image by Keeper Trout.

***Carnegiea* spp.**

Lookalikes include *Carnegiea gigantea*, *C. mezcalaensis* and *C. polylopha*.

Identifying features and alkaloids:

- Many ribs
- Slow growing
- Potential non-mescaline-related psychoactivity
- Fruits fermented by Papago people for navai't cider



Carnegiea gigantea. Image by CK Kelly.

Cleistocactus spp.

Lookalikes include *Cleistocactus fieldianus*, *C. morawetzianus* and *C. serpens*.

Identifying features and alkaloids:

- Wavy ribs
- Contains unidentified alkaloids



Cleistocactus fieldianus. Image by Patrick Noll.

Cereus spp.

Lookalikes include *Cereus aethiops*, *C. forbesii*, *C. fricii*, *C. hexagonus*, *C. hildmannianus*, *C. jamacaru*, *C. lanosus*, *C. peruvianus*, *C. stenogonus* and *C. vargasianus*.

Identifying features and alkaloids:

- Thin ribs
- Branching columns
- No mescaline



Cereus jamacaru. Image by Liam Engel.

Haagocereus spp.

Lookalikes include *Haageocereus acranthus*, *H. chosicensis*, *H. olowinskianus* and *H. pseudoacranthus*.

Identifying features and alkaloids:

- Swollen, woolly areoles
- Reports suggest mescaline but no supporting evidence



Haagocereus species. Image by Ben Kamm.

***Harrisia* spp.**

Lookalikes include *Harrisia adscendens*, *H. aboriginum*, *H. fragrans*, *H. jusbertii*, *H. portoricensis*, *H. simpsonii* and *H. tortuosa*.

Identifying features and alkaloids:

- Thin columns
- Thin ribs
- No mescaline
- Caffeine in seeds



Harrisia aboriginum. Image by James St. John.

***Leucoste*le spp.**

Lookalikes include *Leucoste*le *chiloensis*, *L. deserticola* and *L. litoralis*.

Identifying features and alkaloids:

- Wavy ribs
- Contents unanalysed



Harrisia aboriginum. Image by James St. John.

Lophocereus spp.

Lookalikes include *Lophocereus marginatus* and *L. schottii*.

Identifying features and alkaloids:

- Conjoined areoles/white spine lines
- Potential non-mescaline-related psychoactivity



Lophocereus marginatus. Image by Guven Yilmaz.

Loxanthocereus spp.

Lookalikes include *Loxanthocereus ferrugineus* and *L. pullatus*.

Identifying features and alkaloids:

- Wavy ribs
- Contents unanalysed



Loxanthocereus hybrid. Image by Patrick Noll.

Myrtillocactus spp.

Lookalikes include *Myrtillocactus cochal*, *M. eichlamii*, *M. geometrizans* and *M. schenckii*.

Identifying features and alkaloids:

- Triangular spines
- Branching columns
- No mescaline



Myrtillocactus geometrizans. Image by Christer Johansson.

Neobuxbaumia spp.

Lookalikes include *Neobuxbaumia euphorbioides*, *N. multiareolata*, *N. polylopha* and *N. scoparia*.

Identifying features and alkaloids:

- Thin spines
- Potential non-mescaline-related psychoactivity



Neobuxbaumia euphorbioides. Image by Burkhard Mücke.

Oreocereus spp.

Lookalikes include *Oreocereus celsianus*, *O. doelzianus*, *O. hendriksenianus*, *O. leucotrichus* and *O. varicolor*.

Identifying features and alkaloids:

- Very spiny
- Very hairy
- Contents unanalysed



Oreocereus doelzianus. Image by Frank Vincentz.

Pachycereus spp.

Lookalikes include *Pachycereus fulviceps*, *P. grandis*, *P. lepidanthus*, *P. militaris*, *P. pecten-aboriginum* and *P. pringlei*.

Identifying features and alkaloids:

- Potential non-mescaline-related psychoactivity



Pachycereus pringlei. Image by Tangopaso.

Pilosocereus spp.

Lookalikes include *Pilosocereus azulensis*, *P. azureus*, *P. arrabidae*, *P. floccosus*, *P. fulvilanatus*, *P. magnificus*, *P. pachycladus* and *P. robinii*.

Identifying features and alkaloids:

- Thin, yellow spines evenly dispersed on areole
- Hairy areoles
- No mescaline



Pilosocereus pachycladus. Image by Salicyna.

Polaskia spp.

Lookalikes include *Polaskia chichi* and *P. chende*.

Identifying features and alkaloids:

- Acutely angled ribs and spines
- White/silver/grey growth patterns
- Branching columns
- Traces of mescaline



Polaskia chende. Image by Keeper Trout.

Rauhocereus riosaniensis

Rauhocereus riosaniensis is the only species in the *Rauhocereus* genus.

Identifying features and alkaloids:

- Wavy ribs
- Contents unanalysed



Rauhocereus riosaniensis. Image by Peter Mansfeld.

Stenocereus spp.

Lookalikes include *Stenocereus griseus*, *S. stellatus*, *S. treleasei*, *S. eichlamii*, *S. beneckeii*, and *S. hystrix*.

Identifying features and alkaloids:

- Acutely angled ribs
- White/silver/grey growth patterns
- Branching columns
- Traces of mescaline



Stenocereus stellatus. Image by Keeper Trout.

Stetsonia coryne

Stetsonia coryne is the only species in the *Stetsonia* genus.

Identifying features and alkaloids:

- Oval areoles
- Typically one longer spine on each areole
- Spines yellow/black/brown when fresh, quickly turning grey/white
- Branching columns
- Traces of mescaline



Stetsonia coryne. Image by Keeper Trout.

Harm reduction

It is recommended that people avoid consuming monoamine oxidase inhibitors (MAOIs) alongside mescaline. Ayahuasca and changa both contain MAOIs, so caution should be taken before combining these substances with mescaline. Selective serotonin reuptake inhibitors (SSRIs) should also be avoided for similar reasons, although in some cases they will simply prevent or reduce mescaline effects. To avoid death or illness, before taking mescaline alongside other substances, research your combination. Combination charts (Engel, 2022; Tripsit, 2019) are a good starting point for reviewing mescaline combination risks.

Like all psychedelics, people consuming mescaline should be in a comfortable mental, physical, and social environment. Avoid consuming alone and fast for a short time before consumption. Mescaline has a reputation for inducing nausea and vomiting. Be prepared for this possibility.

Different San Pedro contain different concentrations of mescaline, and varying preparations produce different forms of mescaline with different dosages. A common dosage of mescaline hydrochloride is between 200-300 milligrams. While a relatively weak San Pedro might be dosed at 100 grams dried/1 kilogram fresh, some San Pedro are much stronger. A harm reduction approach to San Pedro is to start with a very low dose, spacing out experiences over time, slowly working up to a dose that elicits the desired effects.

Legal issues

People who consume or process San Pedro for consumption are likely to receive harsher treatment by law enforcement than gardeners simply growing these plants. Importing San Pedro plants and seeds into Australia is complex as there are strict quarantine rules to follow

In South Australia, the Northern Territory, Western Australia, Queensland and Tasmania, San Pedro may be considered illegal due to container/admixture laws. In South Australia and Western Australia, legislation specifically refers to 'all mescaline-containing cacti.' Reports suggest it is only in Queensland and Western Australia where San Pedro restrictions are actively enforced. Law enforcement in these latter areas receive San Pedro identification training.

The legal context of San Pedro species may be different in your country, and typically differs between states. Before buying, selling, growing or consuming these plants, ensure to review the local laws relevant to you.

Emergency assistance

In Australia, you should always call 000 in the case of an emergency. If you think someone has taken an overdose, made an error with medicine or been poisoned, call the Poisons Information Centre on 131 126.

References

Engel, L. (2022). The Entheogen Combination Matrix. Entheogenesis Australis. Australia. <https://www.entheogenesis.org/entheogen-combination-matrix>

Noll, P. (2016). The San Pedro Group. Trichocereus.net. Germany.

Tripsit (2019). Guide to Drug Combinations. https://wiki.tripsit.me/wiki/Drug_combinations

Trout, K. & Friends (2015). *Sacred Cacti: Botany, Chemistry, Cultivation & Utilization* (4th ed.). Better Days Publishing. United States. <https://troutsnotes.com/sacred-cacti/>

Trout, K. & Friends (2006). *San Pedro & related Trichocereus species*. United States. Mydriatic Productions. United States. <https://sacredcacti.com/san-pedro/>

Further reading

Noll, P. (2018). *San Pedro Hybrids*, Engel, L. (ed.). Trichocereus.net. Germany.

Noll, P. (2022). *Trichocereus culture*, Engel, L. (ed.). Cactus Jerk. Germany.

Engel, L. (2022). *The San Pedro Appreciation Guide*. Tzanetis, S. (ed.). The Mescaline Garden. Australia.

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 conferences, workshops and resources.

entheogenesis.org gardenstates.org

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

entheogenesis.org/support