

***Gynerium sagittatum* (Aubl.) Beauv.**
POACEAE

wild cane

Synonyms: *Saccharum sagittatum* Aubl.
Arundo saccharoides Poir.
Airo gigantea Steud.



General Description.—Wild cane, also known as bitter cane, uva grass, and caña brava, is a tall shrub with a grass-like habit. Its culms are usually 5 or 6 m in height and 2 or 3 cm in diameter but may reach 10 m in height and 4 cm in diameter in Puerto Rico. The species varies from 5 to 14 m in height in the western Amazon Basin (Kalliola and others 1992). The culms arise from underground rhizomes which also produce weak and flexible lateral roots, mostly 1 mm or less in diameter. The culms have closely imbricated woody sheaths around a hard, woody exterior, and a fibrous interior. They are usually unbranched and taper little except near the top. The older leaves are shed, leaving a plainer, fan-like group near the apex. The leaf blades are 1 to 2 m long and have sharp serrulate margins. The clonal groups of plants are dioecious. The grayish-white plume-like terminal panicles are large, up to 2 m long. The male and female inflorescences are similar in appearance, but pistillate plants have a slightly fuzzy appearance because of hairy lemmas. The fruits are brown and about 1 mm long (Croat 1978, Howard 1979, Pohl 1983, Stevens and others 2001).

Range.—Wild cane is native to the West Indies except the Bahamas, and from Mexico through

Central America and South America to Paraguay (Howard 1979). It is not known to have naturalized elsewhere. Two types coexist in the western Amazon Basin: a “small” and a “large” type that differ considerably in physical form and mode of reproduction (Kalliola and others 1992). The distinction is not reported elsewhere.

Ecology.—Wild cane grows on sites with moist soils, usually high in organic matter, often with the water table near the surface. These sites are seasonally flooded areas such as lake shores, swamps, river flood planes, or sand bars. The species grows at elevations from 10 to 1,600 m above sea level in Costa Rica (Instituto Nacional de Biodiversidad 2002). Wild cane resists damage from moderate flooding and sprouts after being covered with sediment. “Large type” stands in the western Amazon region vary in density from 0.6 to 2.6 culms/m². Forest edges “shade out” portions of wild cane stands, and occasional trees grow up through stands and eventually suppress culms growing under their crowns. The species affects the course of forest succession (Kalliola and others 1991). Apparently, disturbance that creates bare, wet soil is necessary for seedling establishment.

Reproduction.—In some environments flowering occurs throughout the year (Croat 1978); in others it occurs near the end of the low water period (Kalliola and others 1992). The species is apparently wind pollinated (Pohl 1983). There are 1.67 million seeds/kg, and they can be expected to germinate between 3 and 7 days following sowing at temperatures between 20 and 30 °C (Association of Official Seed Analysis 2002). Almost all the seeds of the “short” type from the Amazon Basin germinated within 3 weeks, and 0 to 2 percent of the “large” type germinated (Kalliola and others 1992). Seeds are dispersed by wind and water (Kalliola and others 1992). Vegetative propagation is also important, both for expanding colonies and establishing new ones. Horizontal runners or rhizomes, surface or underground, are constantly active and establish new plants or clumps as far as 20 m from the

parent plants (Pohl 1983). Segments of culm or rhizome, carried by floodwaters and covered with soil or debris, sprout and start new colonies.

Growth and Management.—Growth of wild cane is rapid. Nursery seedlings reached 20, 30, and 50 cm after 1, 2, and 4 months (Kalliola and others 1992). How long seedlings take to reach maturity and how rapidly suckers grow is unknown. Theoretically, barring catastrophes and invasion and shading by trees, clones can endure indefinitely. Culms of Amazon Basin plants produced close to 200 leaves during their lifetimes, having from 19 to 28 living leaves at a time (Kalliola and others 1992). Unbranched culms die after flowering, but only the branches of branched culms die. If not controlled, wild cane slowly invades wet bottomland pastures and eliminates forage plants. Periodic mowing appears to be adequate for control of advancing clumps.

Benefits.—Wild cane provides cover for wildlife and protects stream banks from erosion (Kalliola and others 1992). Its culms lack the strength and toughness of hardwoods and bamboo but still are used in rude construction, drying racks, vegetable stakes and fruit props, and for weaving mats, baskets, and hats (Kalliola and others 1992). In the Amazon area, arrow shafts are made from the dried culms (Russo 2002). Plumes are used for dry floral arrangements.

References

- Association of Official Seed Analysis. 2002. Reference base. <http://www.aosaseed.com/species/speciesG.pdf>. [not paged].
- Croat, T.B. 1978. Flora of Barro Colorado Island. Stanford University Press, Stanford, CA. 943 p.
- Howard, R.A. 1979. Flora of the Lesser Antilles, Leeward and Windward Islands. Vol. 3. Arnold Arboretum, Harvard University, Jamaica Plain, MA. 586 p.
- Instituto Nacional de Biodiversidad. 2002. Jerarquía taxonómica: Lista de especímenes de *Gynerium sagittatum*. <http://www.inbio.ac.cr/bims/k03/p13/c046/00159/f01382/g008647/s027308.htm>. 2 p.
- Kalliola, R., M. Puhakka, and J. Salo. 1992. Interspecific variation, and the distribution and ecology of *Gynerium sagittatum* (Poaceae) in the western Amazon. *Flora* 186(3-4): 153-167.

Kalliola, R., J. Salo, M. Puhakka, and M. Rajasilta. 1991. New site formation and colonizing vegetation in primary succession on the western Amazon floodplains. *Journal of Ecology* 79(4): 877-901.

Pohl, R.W. 1983. *Gynerium sagittatum* (caña brava, cane). In: D.H. Janzen, ed. Costa Rican natural history. University of Chicago Press, Chicago and London. p. 248-249.

Russo, E.B. 2002. Village life of the Machiguenga. <http://montana.com/manu/village.html>. 4 p.

Stevens, W.D., C. Ulloa-U., A. Pool, O.M. Montiel, eds. 2001. Flora de Nicaragua. Monographs in Systematic Botany Vol. 85, No. 3. Missouri Botanic Garden Press, St. Louis, MO. p. 1,911-2,666.

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