

***Datura innoxia* P. Mill.**  
SOLANACEAE

devil's trumpet

Synonyms: *Datura metel* auct. non L.  
*Datura fastuosa* sensu Griseb. non L.



Drawing source: Missouri Botanic Garden 2003

**General Description.**—Devil's trumpet is also known as angel's trumpet, thorn apple, Indian apple, purple datura, garden datura, horn-of-plenty, David bush, chaico blanco, buenas tardes, concombres zombi, cornicopio, trompette du jugement, and pomme épineuse. It is a shrub or woody herb to 2 m in height that is often grown as an annual in temperate zones. The stems are semiwoody and suffruticose in the moist tropics. In drier environments, it dies to the ground annually. The alternate leaves have petioles 3 to 7 cm long and ovate to elliptic blades 6 to 15 cm long with sinuate to irregularly toothed edges. The tubular flowers are axillary and usually solitary. They are erect or nodding, have a five-toothed calyx 5 to 7 cm long and a white, purple, or yellow corolla 8 to 20 cm long, often double in

horticultural varieties. The ovoid capsule is nodding, about 3 cm in diameter and covered with stout, soft prickles 2 to 4 mm long. The capsules remain on the plant for a long period. The yellowish-brown seeds are flat, kidney-shaped, about 5 mm long, and have a small fleshy aril. *Datura* species normally have 12 pairs of chromosomes (Bonde 2001, Burkill 2000, Howard 1989, Liogier 1995, Stevens and others 2001).

**Range.**—The native range of devil's trumpet appears to have been Mexico and the U.S. Southwest (Schultes and Hofmann 1992), the Caribbean Islands (Howard 1989), India, and China (Schultes and Hofmann 1992). There are related species in all these areas and ancient traditions of its use (Bonde 2001, Schultes and Hofmann 1992). The species apparently naturalized in Africa hundreds of years ago (Burkill 2000). Today, devil's trumpet grows throughout the Tropics.

**Ecology.**—Devil's trumpet grows naturally in disturbed areas such as eroded sites, old fields, vacant lots, overgrazed pastures and rangeland, roadsides and abandoned roadbeds, and fencerows. Apparently, disturbance and reduced competition are required for the plant to become established and grow. A wide variety of well-drained soils on both igneous and sedimentary parent materials are suitable. In Puerto Rico, the species grows naturally in areas that receive from 750 to about 1000 mm of mean annual precipitation from near sea level to about 400 m. Devil's trumpet grows on sites up to 900 m in elevation in Nicaragua (Stevens and others 2001)

**Reproduction.**—Devil's trumpet flowers and fruits throughout the year in some environments, but in India principally from July to September (Parrotta 2001), and from September through November in Nicaragua (Stevens and others 2001). Hummingbirds sometimes visit the flowers, but are affected by the alkaloids in the nectar and must limit their consumption. Honeybees are apparently unaffected. The flowers have an intense

night fragrance (Annie's Annuals 2002), which perhaps helps attract night-flying moths. The seeds are distributed by ants and some species of birds that are resistant to the chemicals they contain (Bonde 2001). Seeds germinate in less than 2 weeks at soil temperatures of 27 °C (Hardy Plants 2002). Devil's trumpet is normally propagated with seeds.

**Growth and Management.**—In dry environments, devil's trumpet reaches a maximum height of about 0.5 m in one growing season. In moist areas, it can reach two to four times this height although it is not clear whether it does so in a single season. New stands can be established by cultivation and planting. Although control information has not been published, weedy plants can probably be reduced or eliminated without difficulty by cultivation or spraying with broadleaf herbicides.

**Benefits and Detriments.**—Devil's trumpet is grown in all but the coldest climates as a flowering ornamental. Beautiful white, purple, and yellow varieties with large, single and double blossoms are available. From ancient times continuing to the present, the taking of *Datura* spp. tissues, particularly the seeds, was used in shamanistic rituals as a path to enlightenment (Schultes and Hofmann 1992). Today, people frequently experiment with it for the hallucinogenic effect, but the results are so unpleasant (dark visions, disorientation, amnesia, blurred vision, dry mouth, and incontinence) that they seldom recommend the experience (Erowid 2002). Overdoses can result in death. The plant has been used to treat impotence, asthma, diarrhea, as an analgesic, to control fever, kill parasites, and as a drug for criminal purposes (Bonde 2001, Parrotta 2001). Devil's trumpet contains a host of phytoactive chemicals including atropine, hyoscyamine, hyoscine, scopolamine, norscopolamine, meteloidine, hydroxy-6-hyoscyamine, tiglic esters of dihydroxytropine, and a number of withanolides (Gupta and others 1991, Janthangvith and others 2000). Alkaloid concentration in tissues is around 0.5 percent (Niber and others 1992) but varies according to environmental circumstances (Burkill 2000). Devil's trumpet is a minor weed in tropical and some subtropical countries. It causes erratic behavior and even death of livestock that have eaten it, but it is seldom a problem for pastured animals because they carefully avoid consuming it.

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