

Botanical Briefs: Dumb-cane—*Dieffenbachia picta* (Lodd.) Schott

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Cutaneous Manifestations

Dieffenbachia picta received the epithet “Dumb-cane” because chewing the leaves can lead to salivation, burning, mucosal edema, perioral edema, and blisters causing hoarseness or aphonia. The juice of *D picta* leaves may cause intense pruritus and irritation. Contact

with the bruised or broken plant material may cause severe blistering and inflammation. Chewing the stem has rarely led to death in children and pets.¹

Family

The Araceae family, which also encompasses the genus *Arum*, is large and diverse and includes a number of economically important and decorative plants, including other common office or lobby plants, such as the philodendron (*Philodendron scandens*) and the peace lily (*Spathiphyllum walisii*).

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FIGURE 1. *Dieffenbachia picta* (Lodd.) Schott demonstrating pointed, ovate leaves with central, blotchy yellow-white and peripheral green variegation (Author's desk at home, February 1998). It is an easy plant to grow and is difficult to kill.

Distribution of Plant

The genus *Dieffenbachia* includes about 30 species native to tropical America and the West Indies. Certain species are widely cultivated for their decorative foliage and are commonly seen in homes, hotel and bank lobbies, waiting rooms, and restaurants.²

Dermatitis-Inducing Plant Parts

The leaves, stem, and fruit are notorious causes of hoarseness and aphonia; however, the entire plant contains calcium oxalate raphides.

Nomenclature

D picta is also known as Dumb-cane, Dumb Plant, Tuft Root, Mother-in-Law's Tongue Plant, Otó de Lagarto, Rábano, and Cimarrón. *Dieffenbachia* is named after J.F. Dieffenbach, while *picta* is from the Latin *pictus* meaning *painted or colored* and denotes the variegated leaves.

Identifying Features/Plant Facts

Members of the family Araceae share a common floral structure. The small male and female flowers are borne on a club-like stem (spadix) surrounded by a modified leaf (spathe). The peace lily, with its large white spathe enveloping the long spadix is a good example. Dieffenbachias are stout herbs with leaves that typically have large, centrally splotchy-white or yellow areas (Figure 1). In centuries past, *D picta* leaves were used to torture slaves.¹

Irritants

All *Dieffenbachia* species contain calcium oxalate raphides (needle-like

crystals) and druses (spherical aggregates of crystals), but their irritant effect on skin and mucous membranes are believed to be increased by the presence of other proteins. Calcium oxalate is a water insoluble salt that is ejected from the plant when exposed to water, as in the skin or mucosa.^{3,4}

Tests on rabbit eyes have shown severe irritation with the juice of *D picta*, the toxicity being associated with a labile proteinase present in the sap. This proteinase, named dumbcain, has been isolated from both *D picta* and *D sequine*, and it may be injected intradermally with the aid of calcium oxalate raphides. *D picta* leaves contain large (130–150 μm by 3 μm) and small (10–20 μm by 1 μm) calcium oxalate raphides that are sharply pointed at both ends, and they are contained in unusual, randomly scattered capsular cells from which they may be expelled through the ends.² Antihistamines afford some protection against the effects of the juice on the oral cavity, but treatment with cortisone merely delays the reaction.³

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