

GREEN GONE BAD

Featured Ornamental Plant: *Dioscorea polystachya* (Chinese Yam)

Some exotic ornamental plants behave badly when they escape from the place they are planted. Infestations of these plants have negative impacts on natural environments. One of these plants is *Dioscorea polystachya*; common name: Chinese Yam.



Dioscorea polystachya is native to China and was originally introduced into North America as an ornamental vine, as food, and for medicinal purposes. Chinese Yam escaped cultivation in the mid-1990s. It invades open to shady areas in the Eastern United States. Cinnamon vine is another commonly used name for *Dioscorea polystachya*.

Dioscorea polystachya is an invasive herbaceous, twining vine that grows to about 16.4 ft. The leaves are alternate proximally but can become opposite as they advance up the vine. Leaves are about 8 in. long, and heart to fiddle shaped (margins three-lobed), with prominent, parallel veins. Rounded stems are thin and wiry. Staminate plants may produce small, white flowers annually. Flowers may have a spicy fragrance similar to cinnamon. Seeds are winged all around, but the chief means of reproduction are aerial, potato-like tubers (bulbils) located at the leaf axils and underground tubers.

Dioscorea polystachya can reproduce both sexually and asexually. While it has not been documented to reproduce sexually in North America (probably because only male plants have been observed) it does, however, reproduce vigorously asexually. This occurs via the small potato-like axillary bulbils. Each vine can produce an

average 20 bulbils per year, and bulbils can sprout new shoots within 2 weeks of formation. Fragmented or broken bulbils can survive and sprout into new vines. Thus, even partially eaten bulbils (rodents will chew on them), or bulbils chopped apart by a tiller, are still capable of producing healthy plants. *Dioscorea polystachya* bulbils are dispersed primarily by gravity. Some bulbils may be dispersed farther by water or by animals. Bulbils might be carried by rodents (who eat and gather them) from nearby ornamental gardens. Unsuspecting gardeners intrigued by the dangling yams often move plant material to new locations.



Dioscorea polystachya has the ability to rapidly invade pristine habitats, especially riparian corridors. Due to its swift rate of vegetative growth and prolific rate of asexual reproduction via bulbils, it has the potential to become a major pest plant in the eastern and central United States. In infested areas, *D. polystachya* lowers native species richness and abundance by outcompeting and eliminating native plant species. It does this by thickly blanketing all adjacent vegetation, and competitively excluding light. *D. polystachya* may also weight-down and break branches of large trees and shrubs (similar to kudzu - *Pueraria montana*). It can completely cover the ground, so that all native herbaceous ground cover is excluded. Observers have reported infestations up to 3 acres in size and very little use of *D. polystachya* by wildlife. Vines die back during winter with old vines providing trellises for regrowth. *D. polystachya* is also well adapted to exploit any increase in soil nutrient levels, making it an excellent competitor for soil resources.

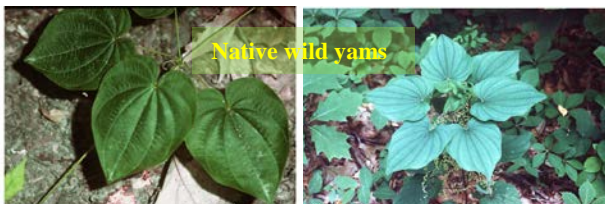
Horticulturists, gardeners, and naturalists have noticed this species spreading. Please be cautious of planting or selling potentially harmful invasive plants. This species is now documented in 15 counties in SC and is listed as a significant threat by the SC Exotic Pest Plant Council. Native plants such as passionflower (*Passiflora incarnata*), Dutchman's pipe (*Aristolochia macrophylla*), trumpet creeper (*Campsis radicans*), coral honeysuckle (*Gelsemium sempervirens*), and of course native wild yams (*Dioscorea quaternata* and *D. villosa*) are excellent substitutes in landscaping and for wildlife and pollinators.

Visit these web pages for more details:

<http://www.invasive.org/browse/subinfo.cfm?sub=4527>

http://wiki.bugwood.org/Dioscorea_polystachya

http://www.na.fs.fed.us/fhp/invasive_plants/weeds/chinese-yam.pdf (includes control methods)



Don't confuse Chinese Yam with our native wild yams (*Dioscorea quaternata* and *D. villosa*) since they pose no invasive risk. Our native yams do not have reddish coloration on new leaves, and do not produce bulbils in their leaf axils. Their fruits are a three-winged capsule, and their leaves are strongly heart-shaped as opposed to fiddle-shaped.

See also: <http://www.se-eppc.org/southcarolina/> and <http://www.se-eppc.org/>

