

Monstera Growing in the Florida Home Landscape¹

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Scientific name: *Monstera deliciosa*

Common names: monstera, ceriman, windowleaf, cut-leaf philodendron, swiss-cheese plant, split-leaf philodendron (English).

Family: Araceae

Relatives: Numerous species including *Monstera lechleriana*, *M. friedrichsthali*, *M. dissecta*, and *M. pertusa* (all ornamental houseplants). Numerous *Philodendron* species including the common landscape plant *P. bipinnatifidum*.

Origin: *Monstera* is indigenous to the hot, humid, tropical forests of Mexico, Guatemala, Costa Rica, and Panama.

Distribution: *Monstera* is grown in tropical and warm subtropical areas of the world and in protected culture in temperate areas.

History: *Monstera* was introduced to England in 1752, Singapore in 1877, and India in 1878. The fruit were introduced to the U.S. in 1874.

Importance: The plant is grown more for its ornamental value both in the landscape and as a containerized plant.

Description

All plant parts contain high levels of oxalic acid.

Vine

Monstera is a fast growing broadleaf vine with a cylindrical thick-stem 2 to 4 inches (5-10 cm) in diameter that may grow along the ground or if allowed, will climb onto trees and structures. The vine may exceed 70 ft (21 m) in length if left unpruned. The vine stem is covered with leaf scars from previous leaves and from it develop numerous, long cord-like aerial roots. Left uncontrolled the vine may be somewhat invasive i.e., take over the landscape or climb trees.

Leaves

The heart-shaped leaves are held on stiff 2 to 3 ft long (0.6-0.9 m) petioles. Leaves are green and large, 3 or more ft long by 2 to 3 ft wide (0.9 m long by 0.6-0.9 m wide), oval, deeply dissected along the margins and perforated on each side of the midrib with elliptic or oblong holes of various sizes.

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Inflorescence (flowers) and fruit

Several inflorescences develop from leaf axils along the cylindrical stem. The inflorescence is made up of numerous perfect flowers (containing male and female parts) called a spike. The fruit is called a spadix and is made up of numerous cohering berries. At first the spadix is sheltered by a waxy, white, spathe (bract) that later drops off. The compound fruit is cylindrical, green, 8 to 14 inches (20-36 cm) long and 2 to 3 1-2 inches (5-9 cm) in diameter. The peel is thick, hard, and made up of hexagonal plates (scales) that cover individual segments of ivory colored, juicy, flavorful pulp. Among the fruit segments are small, black particles which are the remnants of flowers. Generally, there are no seeds although sometimes small, pale-green seeds are produced. The time from flowering to fruit maturity ranges from 12 to 14 months.

Roots

Long, aerial tentacle-like roots emerge along the vine stem, taking root when they touch the ground.

Varieties

Few named monstera varieties exist. There are a number of varieties with variegated leaves including 'Variegata', 'Albovariegata', and 'Marmorata'; however, the quality of their fruit is not known and they may be hard to find in the nursery trade in Florida. **Caution: these varieties may not have edible fruit.**

Climate

Monstera grows best in hot, humid, tropical climates although it will grow and fruit satisfactorily in warm subtropical areas of the world. Plants grow best under light shade (filtered sunlight); intense sun exposure may cause leaf scorching. Monstera is not tolerant of freezing temperatures with leaves damaged or killed at 30 to 32°F (-1.0 to 0°C) and stems at 26 to 28°F (-2 to -3°C). In areas that experience cool temperatures vines grow better if lightly shaded; especially during the winter months.

Propagation

Monstera may be propagated by seed, stem cuttings, suckers, and tissue culture. Most commonly, monstera is propagated by stem cuttings which may be rooted first in containers or partially buried in the soil where intended to grow. Plants generated from cuttings may come into bearing in 4 to 6 years, whereas suckers begin fruit production in 2 to 4 years.

Production (crop yields)

The spadix (fruiting spike) takes about a year to mature. Production figures are not available.

Spacing and pruning

Monstera vines may become long, 40 or more ft (12 m or more) if left unpruned and leaves may be held 3 to 4 ft high (0.9-1.2 m). Monstera vines should be planted as an understory plant, i.e., in partial shade of large overhanging trees. Plant vines 20 or more ft (6.1 m or more) away from trees and other plants and electrical poles. Vines will grow onto adjacent trees and structures if not prevented by periodic pruning. Vine growth is easily controlled by cutting the stem and pulling the shallow roots out of the ground. Periodically, vines should be cut back to maintain them in their appropriate space, otherwise they will take over a large part of the landscape.

Soils

Monstera are adapted to most well drained soil types including sandy type soils and the high pH, calcareous soils in Miami-Dade County. Plants are not tolerant of flooded or excessively wet soil conditions.

Planting monstera vines

Properly planting a monstera vine is one of the most important steps in successfully establishing and growing a strong, productive vine. The first step is to choose a healthy nursery plant. Commonly, nursery monstera vines are grown in 3 gallon (11 liters) containers and vines may be 2 to 4 ft (0.6-1.2 m) long. Inspect the vine for insect pests and diseases and inspect the stem of the vine for wounds and

constrictions. Select a healthy vine and water it regularly in preparation for planting in the ground.

Site selection

Monstera vines grown in full sun are more productive than vines grown in shade. However, the leaves of vines grown in shade are a darker green and aesthetically pleasing than those in full sun. Leaves grown in full sun tend to be light green and may show signs of sun burn (excessive sun exposure). If fruit production is the primary reason for growing monstera, select a part of the landscape away from other trees, plants, buildings and structures, and power lines. If fruit production is not the primary reason for growing monstera, vines may be grown under the canopy of landscape trees. Whether grown in full sun or shade monstera vines can become very large if not cut back to contain their size. Select the warmest area of the landscape that does not flood (or remain wet) after typical summer rainfall.

Planting in sandy soil

Many areas in Florida have sandy soil. Remove a 3 to 10 ft (0.9-3.1 m) diameter ring of grass sod. Dig a hole 3 to 4 times the diameter and 3 times as deep as the container the monstera vine has come in. Making a large hole loosens the soil adjacent to the new vine making it easy for the roots to expand into the adjacent soil. It is not necessary to apply fertilizer, topsoil, or compost to the hole. In fact, placing topsoil or compost in the hole first and then planting on top of it is not desirable. If you wish to add topsoil or compost to the native soil, mix it with the soil excavated from making the hole in no more than a 50-50 ratio.

Backfill the hole with some of the native soil removed to make the hole. Remove the vine from the container and place it in the hole so that the top of the soil media in the container is level with or slightly above the surrounding soil level. Fill soil in around the vine roots and tamp slightly to remove air pockets. Immediately water the soil around the vine roots. Staking the vine with a wooden or bamboo stake is optional. However, do not use wire or nylon rope to tie the vine to the stake as they may eventually damage the vine stem as it grows. Use a cotton or natural fiber string that will degrade slowly.

Planting in rockland soil

Many areas in Miami-Dade County have a very shallow soil and several inches below the soil surface is a hard calcareous bedrock. Remove a 3 to 10 ft (0.9-3.1 m) diameter ring of grass sod. Make a hole 3 to 4 times the diameter and 3 times as deep as the container the monstera vine has come in. To dig a hole there are several options including a pick and digging bar to break up the rock or contract with a company that has augering equipment or a backhoe. Plant the tree as described for sandy soils.

Planting on a mound

Many areas in Florida are within 7 ft or so of the water table and experience occasional flooding after heavy rainfall events. To improve plant survival consider planting the monstera vine on a 2 to 3 ft (0.6-0.9 m) high by 4 to 10 ft (1.2-3.1 m) diameter mound of native soil. After the mound is made, dig a hole 3 to 4 times the diameter and 3 times as deep as the container the vine has come in. In areas where the bedrock nearly comes to the surface (rockland soil) follow the recommendations for the previous section. In areas with sandy soil follow the recommendations from the section on planting in sandy soil.

Care of monstera vines in the home landscape

A calendar outlining the month-to-month cultural practices for monstera is shown in Table 1.

Fertilizer

Monstera fertilizer requirements do not appear to be high. After planting, when new growth begins, apply 1/4 lb (113 g) of a complete dry fertilizer mix with 20 to 30% of the nitrogen from organic sources. A complete mix includes nitrogen, phosphate, potash, and magnesium. Repeat this every 8 weeks for the first year then gradually increase the amount of fertilizer to 0.5, 0.75, and 1.0 lb (227 g, 341 g, 454 g) but decrease the frequency to 2 to 3 times per year as the vines grow.

Application of magnesium and micronutrients such as zinc and manganese may be made in ground

applications to vines growing in sandy soil with a low pH (4-7). However, foliar applications of zinc, manganese, and magnesium are more efficacious for vines growing in highly calcareous with a high pH (7-8.5). Micronutrient applications should be made 2 to 3 times per year, generally during the growing season. Iron should be applied in a chelated formulation. For the calcareous, rocky soils and sandy soils with a high pH use a chelated iron specifically formulated for high pH soils. For sandy soils with a low pH use either a chelated iron specifically formulated for low pH soils or iron sulfate, or similar materials. Iron should be mixed with water and applied as a soil drench under the vine canopy.

Watering

Although monstera vines are moderately drought tolerant, especially when grown in the shade, periodic watering during dry periods will result in better growth and larger fruit.

Monstera vines and lawn care

Monstera vines in the home landscape are susceptible to stem injury caused by lawn mowers and weed eaters. Maintain a grass-free area 2 to 5 or more feet (0.6-1.5 m or more) away from the stem of the vine. Never hit the vine stem trunk with lawn mowing equipment and never use a weed eater near the vine stem. Mechanical damage to the stem of the vine will result in weakening the vine and if severe enough can cause the vine to dieback or die.

Roots of mature monstera vines spread beyond the drip-line of the leaf canopy and heavy fertilization of the lawn adjacent to monstera vines is not recommended and may reduce fruiting and or fruit quality. The use of lawn sprinkler systems on a timer may result in over watering and cause vines to decline. This is because too much water, too often is being applied which results in root rot.

Mulch

Mulching monstera vines in the home landscape helps retain soil moisture, reduces weed problems adjacent to the vine stem, and improves the soil near the surface. Mulch with a 2 to 6 inch (5-15 cm) layer of bark, wood chips, or similar mulch material.

Insect pests and diseases

In general, monstera plants have no major insect or disease problems.

Harvest, ripening, and storage

Mature fruit ready to harvest turn from green to a lighter green and the tile-like segments at the base of the fruit begin to separate slightly, making it appear somewhat bulged. Fruit may then be cut from the plant leaving 1 inch or more of the stem. To ripen the fruit it should be kept at room temperature (78-82°F; 26-28°F) for 5 to 6 days during which time it ripens from the base toward the apex (top). The pulp should only be eaten from that portion of the fruit that easily falls off the core (stem). This is because immature sections of the fruit contain oxalic acid crystals that cause severe discomfort when consumed (swallowed).

To ripen the fruit more quickly and evenly the entire fruit should be wrapped in paper, plastic, or aluminum foil. Once ripened, most if not all the pulp will fall from the inedible core.

The pulp may be stored for several days in the refrigerator before consumption.

Uses and nutritional value

In general, monstera is eaten as a fresh fruit, although the pulp may be used as an ingredient in deserts. The fruit contains large amounts of oxalic acid and it is not recommended to eat large quantities of this fruit at any one time. The nutritional value of the fruit is not documented.

Table 1. Suggested cultural practices for monstera vines in the home landscape.

Operation	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
General ¹				Apply N-P-K-Mg				Apply N-P-K-Mg				
Micro-nutrients				Apply micro-nutrients								
Iron applications ²						Apply iron						
Watering	Water periodically during prolonged dry periods									Water periodically during prolonged dry periods		
Pruning ³						Prune if necessary during warm weather to allow regrowth to begin.						

1, Dry fertilizer mix which includes nitrogen, phosphate, potash, and magnesium.

2, In low pH, acid sandy soils apply iron sulfate; in high pH, rockland soils apply chelated iron.

3, If vines become overgrown prune the vine during the warm part of the year to allow some new leaf growth.