



# Indoor Plants

IOWA STATE UNIVERSITY  
Extension and Outreach



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*Hedera helix*



*Saintpaulia* species

## Types of Indoor Plants

The plant descriptions that follow are divided into four major groups: foliage, flowering, succulents, and florist's plants.

### FOLIAGE—(pages 8-21)

Plants grown year-round indoors primarily for attractive leaves, stems, and/or growth habits.

**FLOWERING—(pages 22-31)** Plants grown year-round indoors primarily for attractive flowers. Plants often have a limited season of bloom.

### SUCCULENTS—(pages 32-36)

Plants grown year-round indoors that have thickened, fleshy leaves and/or stems. Grown for their attractive leaves, stems, growth habit, and/or flowers, these plants are well adapted to dry conditions.

### FLORIST'S PLANTS—(pages 37-41)

Plants grown for temporary display indoors that have attractive flowers. Many are discarded after bloom, but some can be relocated and forced into bloom seasonally.

## CHOOSE THE RIGHT PLANT FOR THE RIGHT PLACE

Indoor plants help to create a welcoming, calming, aesthetically pleasing environment in homes, offices, and shopping malls. Studies have shown that plants make people more content and comfortable, increase creativity and productivity, and help to improve their overall health.

Of the many plants in the world, only a few hundred lend themselves well to indoor culture. Most are tropical or subtropical plants that are native to areas with indirect light, relatively constant temperatures year round, and high humidity. However, several cacti, succulents, temperate flowering plants, and bulbs also grow well indoors.

More than 80 percent of homes in the United States have at least one houseplant. In fact, the national average is 10 plants per household.

Many people grow plants in the living room, kitchen, or bright hallway. However, the bedroom, dining room, and even the bathroom are also potential sites. Windowsills may provide the most light, but other sites are equally satisfactory. For example, a chrysanthemum may be placed on a table, a spider plant is attractive on a pedestal, a lady palm or ficus can be set on the floor, and ivy is often hung from the ceiling.

The ideal placement and care of an indoor plant depends on the species of plant and six environmental factors: light, temperature, humidity, watering, fertilization, and soil. Matching the

plant's environmental requirements with the site and following sound cultural practices will lead to success with many indoor plants.

### LIGHT

Plants use light to convert carbon dioxide and water into sugars through photosynthesis. Without sufficient light, plants must use stored food reserves. The duration, quality, and intensity of light are important to plant growth and development.

*Duration of light* refers to the number of hours of light that is received during a 24-hour period. For most houseplants, the seasonal changes of light duration from summer to winter have little impact on growth. For other plants, such as holiday cacti and poinsettia, variations in the number of hours of light received initiates flowering.

*Light quality* refers to the spectrum or wavelength of light. Plants need light from both ends of the spectrum—the red and the blue. Sunlight provides both of these wavelengths of light. Supplemental lighting can vary greatly in light quality. Incandescent lights emit mainly yellow and some red hues which are of little use for photosynthesis. Fluorescent lights emit a range of blues but sometimes lack the necessary red wavelengths.

*Intensity of light* refers to the brightness of light. Some plants, such as cast iron plant, tolerate very low intensities of light while other plants, such as bird of paradise, require



*Mammillaria carmenae*

much higher light intensities to grow and develop. The intensity of light, often measured in footcandles, varies depending on the side of the house, the time of year, how close the plant is placed to the window, and whether anything is placed between the window and the plant, such as a sheer curtain or blind. Overhangs, porches, plant material, and other outdoor obstructions also can reduce indoor light levels.

Outside on a sunny, summer day plants will be exposed to more than 10,000 footcandles. The same location on a cloudy, winter day will be about 2,000 footcandles. Light intensities inside a home are significantly lower than those found outdoors. Even just inside a sunny, south-facing window, the light intensity will only be about 700 footcandles. Five feet from the same window, the light intensity is reduced

to 70 footcandles. Most indoor plants need between 50 and 300 footcandles to properly grow and develop.

Horticulturists often use general descriptors, such as the following, to refer to specific lighting situations.

**Direct**—Next to a clear window with sunlight directly on the plant; 300 or more footcandles; south or west window

**Indirect**—Next to a clear window without direct sunlight, such as a sunny window with sheer curtain; 200 to 300 footcandles; south, east, or west window with no direct light

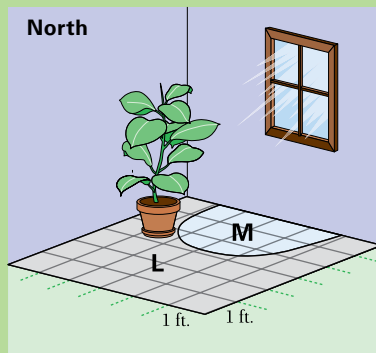
**Moderate**—Several feet away from a sunny window; 100 to 200 footcandles; several feet from a south, east or west window

**Low**—In the middle of a well-lit room with little or no light from outside; 50 to 100 footcandles; north window

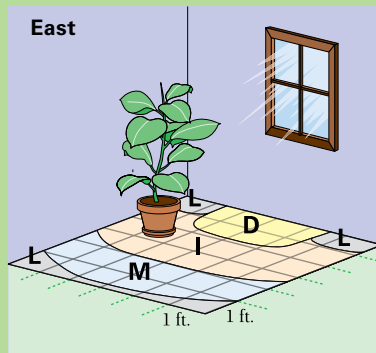


## DIRECTION INFLUENCES WINDOW LIGHT

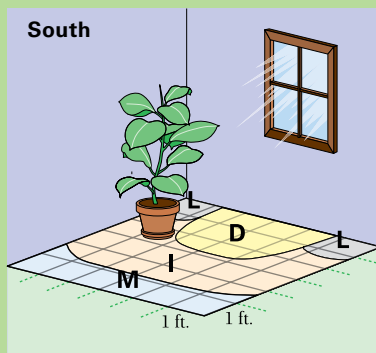
*In general, windows facing certain directions have specific characteristics.*



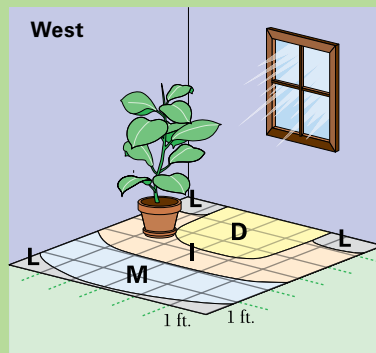
**North**—No direct sunlight(**D**). Light levels are adequate for most foliage plants in summer. Light levels may be too low for some plants in the winter. Light levels are low(**L**) or moderate(**M**) depending on proximity to window.



**East**—Some direct sunlight(**D**). Light levels good for nearly all indoor plants. Light levels are direct(**D**), indirect(**I**), moderate(**M**), or low(**L**), depending on proximity to window.



**South**—Abundant direct sunlight(**D**). Good location for many succulents and flowering houseplants. Light levels may be too high during summer. Light levels are mostly direct(**D**) and indirect(**I**).



**West**—Some direct sunlight(**D**) but much more intense and hotter than east window. Light levels good for most succulents and flowering houseplants. Light may be too intense for some foliage and florist's plants. Light levels are direct(**D**), indirect(**I**), and moderate(**M**) depending on proximity to window.

## USING ARTIFICIAL LIGHTS

If light levels in the home are not adequate, artificial or supplemental lighting may be required. Some plants, such as African violets, can be successfully grown for long periods under fluorescent lights. Designated grow lights or a combination of cool and warm white fluorescent lights can simulate low to moderate light levels.

For best performance, lights should be within four to six inches of the tops of plants. Fluorescent lights have little effect on plant growth if they are more than one foot away from the foliage.

## TEMPERATURE

Temperature affects photosynthesis and other important plant functions. While many plants grown indoors come from warm, tropical areas, most prefer temperatures between 65° and 75°F. This is due to the reduced light and humidity the plants receive indoors compared to their native habitat. With lower light and humidity levels, the amount of heat required is also lower. Some florist's plants, such as cineraria, require even lower temperatures of 55° to 65°F to remain in flower for the longest period of time.

Temperature levels in this publication are divided as follows.

**Cool**—55° to 65°F

**Average**—65° to 75°F

**Warm**—75° to 85°F



Lights should be left on for 12 to 16 hours per day for most houseplants. Replace bulbs on a yearly basis as the quality and quantity of light emitted decreases over time.

Just as outdoor plants go through periods of dormancy and rest, so do some indoor plants. Because of this, many houseplants benefit from cooler temperatures during the winter months and slightly warmer temperatures during the summer months. Many flowering houseplants require a period of cooler temperatures to induce flowering.

While slight, seasonal temperature fluctuations are beneficial, drastic temperature swings of 15°F or more can be damaging or fatal. In the winter months, temperatures on a windowsill can vary from 75°F in the afternoon to near freezing during the night. To avoid

these temperature fluctuations, don't place plants close to leaky windows or trap plants between the curtain and the windowpane. Also be careful when transporting plants outdoors. Moving a plant from a 72°F florist shop to a 110°F car in summer can be stressful. Unprotected plants also can be severely damaged or destroyed while temperatures are below freezing. Cacti and succulents, however, actually may benefit from high day and low night temperatures. This temperature variation is normal in their native desert habitats.

## HUMIDITY

Humidity influences transpiration rates as well as many other plant functions. Most tropical indoor plants do best when relative humidity is 85 to 95 percent. However, the average relative humidity in most homes in the winter is below 15 percent. This is even drier than the 25 percent relative humidity of the Sahara.

Several methods can help raise humidity levels around houseplants.

**a) Use a humidifier**—This will increase relative humidity in the entire room. Aquariums, room fountains, or lava blocks also will help increase relative humidity in a room.

**b) Group plants together**—Placing plants close together allows the foliage of surrounding plants to help trap and maintain a relative humidity that is slightly higher than the surrounding area.

**c) Place plants in a terrarium**—Small plants with high humidity requirements can be placed in an enclosed glass case, such as a terrarium, Wardian case, or bottle garden.

**d) Set plants on pebble trays**—Placing plants directly above a shallow tray of evaporating water can help increase humidity greatly. To make a pebble tray, place a rack or small rocks in a saucer or shallow tray. Partially fill the tray with water. The water level should remain below the pot. A large tray works well for several plants and a saucer is adequate for individual plants.

**e) Use double pots**—Place a potted plant inside a larger, water-tight container filled with sphagnum peat moss, clay pellets, or clay granules (such as clay-based cat litter). Keep the clay or peat moist at all times. As water evaporates from the moist peat moss or clay, the relative humidity near the plant is raised.

**f) Try misting**—While misting can be effective if done frequently, it is generally not effective in raising humidity around a houseplant. Misting also may aid in the spread of certain fungal diseases. However, some plants, such as orchids, do benefit from moisture on their leaves. When misting, mist with fine droplets and mist all sides of the foliage. Do not mist when foliage is exposed to direct sunlight and do not directly mist flowers or water-sensitive foliage, such as African violets.

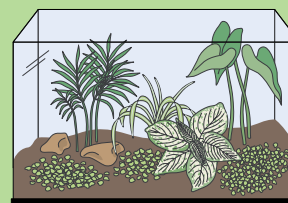
## METHODS TO RAISE HUMIDITY LEVELS



a) Use a humidifier



b) Group plants together



c) Place plants in a terrarium



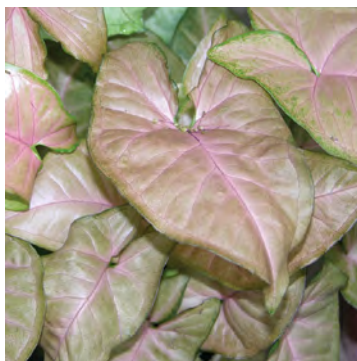
d) Set plants on pebble trays



e) Use double pots



f) Try misting leaves



*Syngonium podophyllum*

## WATERING

Knowing when to water indoor plants can be challenging. Watering frequency depends on many environmental conditions, such as light, humidity, and temperature, as well as the time of the year, the type of container, the composition of the soil, and the species of plant.

Watering correctly is not always intuitive. Watering frequently, “whether they need it or not,” with small quantities of water often causes problems.

Most indoor plants like to dry out slightly between waterings. If the soil surface is dry to the touch, it’s probably time to water the plant, especially if the pot feels lightweight and the soil is a lighter color than usual. However, if the soil has pulled away from the side of the pot or if the plant is wilted, the plant has become too dry and should be watered immediately.

When watering, add water until it begins to drain from the bottom of the pot. Empty saucers 30 minutes after watering and never allow plants to sit in saucers full of water.

Tap water from most city and rural water sources is adequate for use on most plants. When using tap water, allow it to sit overnight. This allows the water to reach room temperature so chlorine and other chemicals often found in tap water may dissipate. Watering with rainwater is ideal. Heavily softened water (water that has little to no calcium and magnesium carbonates) often contains high levels of salts that can adversely affect some plant species. Extremely hard water (water that contains high levels of calcium and magnesium carbonates) can raise the pH of the soil media over time and cause problems for pH sensitive species.

Plant species that resent wet leaves and crowns, such as African violet, gloxinia, or cyclamen, can be watered from the bottom. Place the pot in water and leave it until the surface of the soil is wet. The soil will draw moisture up through the drainage holes in the bottom of the pot. Allow the pot to drain and return it to the original location. This method is also beneficial if the soil has pulled away from the side of the pot, making watering from above difficult.



*Philodendron* × ‘Xanadu’

## FERTILIZATION

Most indoor plants need to be fertilized on a regular basis. A complete houseplant fertilizer containing nitrogen, phosphorous, and potassium is usually sufficient. Water-soluble fertilizers are effective and convenient. Other methods of applying fertilizer include granules, pills, and sticks. Each should be used according to label directions.

In general, indoor plants should be fertilized every two to four weeks when actively growing. It is best to fertilize often at low concentrations rather than infrequently at high concentrations. The latter can cause root and leaf damage.

Do not fertilize during the winter months when most indoor plants are not actively growing. Do not over-

fertilize. Too much fertilizer can cause spindly, weak growth or few flowers in flowering species. Never fertilize a plant with a dry root ball. Instead, thoroughly water the plant so the root ball becomes fully hydrated. Then apply fertilizer several hours later.



*Begonia rex* ‘Peace’



SOIL

The potting media or soil is important for holding moisture, air, and nutrients necessary for plant growth. Appropriate potting media is important for plant growth and health and can vary from species to species.

Several components or “ingredients” are combined in varying ratios to give a soil mix specific properties. The following components are commonly used. Some soil mixes also may use bark and coir (the husk of coconut).

**Sphagnum peat moss**—A major component of many mixes, sphagnum peat moss has excellent water and nutrient holding capacity and a low pH (about 2.0). It can be difficult to wet when dry.

**Perlite**—This white, lightweight, volcanic rock provides excellent aeration and drainage. To prevent inhalation of the fine dust, wear a mask or respirator.

**Vermiculite**—Heating a mica ore to a high temperature causes it to expand and produce this lightweight component with good water and nutrient holding capacity. To prevent inhalation of the fine dust, wear a mask or respirator.

**Sand**—Use coarse sand with particle sizes ranging from 1/8 to 1/4 inch in diameter that cannot be sifted through an ordinary window screen. Sand can make a soil mix very heavy.

**Garden soil**—When used alone in a container, garden soil tends to compact with fewer pore spaces for oxygen and water. If used, it should be combined with other components.

A variety of commercially prepared planting mixes are available. Some appear very black and contain a large proportion of humus or peat. These mixes can become compacted, resulting in poor aeration and drainage. Combining these mixes at a 2:1 or 1:1 ratio with perlite or sand improves the drainage capacity.

**Soilless mixes**— These are often used for many common houseplants because they are lightweight, sterile, and easy to use. Soilless mixes have no garden soil and usually have a high proportion of sphagnum peat moss; they do not readily absorb water when they are completely dry.

When preparing a growing medium, mix the materials by turning them over together. Break only particles larger than 1/4 inch. Excessive turning, particularly when ingredients are too wet, may ruin the mixture. After mixing, stir in enough water to make the mixture barely hold together when firmly grasped. Store all soil-containing mixes in airtight plastic bags to keep them moist.

ALL-PURPOSE SOIL MIX

*Suitable for many common houseplants*

- 1 part pasteurized garden soil
- 1 part sphagnum peat moss
- 1 part sand or perlite

HIGH-HUMUS SOIL MIX

*Slightly more acidic than the all-purpose soil mix; recommended for African violets, begonias, azaleas, and philodendrons*

- 1 part pasteurized garden soil
- 1 part sphagnum peat moss
- 1 part leaf mold
- 1 part sand or perlite

CACTI AND SUCCULENTS SOIL MIX

*Provides the good drainage required by plants from arid regions*

- 1 part pasteurized garden soil
- 1 part sphagnum peat moss
- 2 parts sand

EPIPHYTE GROWING MEDIA

Orchids, bromeliads, and other epiphytes derive most of their moisture and nutrients from the air and rain. They do not require soil in their growing medium. These plants grow best in osmunda fiber, unshredded sphagnum peat moss, and chipped redwood bark.

CORNELL SOILLESS MIX

*Suitable for many common houseplants*

- Amount per bushel
- 1/2 bushel shredded peat moss
- 1/2 bushel sphagnum peat moss, vermiculite and/or perlite
- 8 level tablespoons ground dolomitic limestone
- 2 level tablespoons powdered 20% superphosphate
- 3 level tablespoons granular 10-10-10 fertilizer

CONTAINER CARE

Old, used pots, saucers, and other containers may harbor plant diseases and should be cleaned and disinfected before reusing. The mineral deposits on clay and ceramic pots can be removed by scrubbing vigorously in lukewarm water containing vinegar (1/4 cup per quart). Wash and rinse all soil residue from the inside of the containers. Containers can be disinfected with a solution of household bleach consisting of one part bleach to nine parts water.

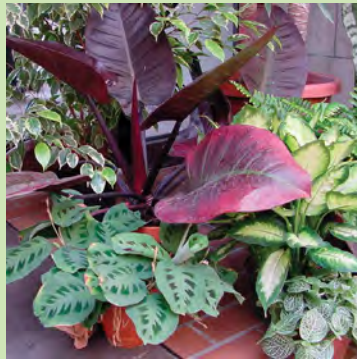


*Codiaeum variegatum*

## Foliage Houseplants

Foliage houseplants are valued for their interesting forms, textures, and leaf colors. Their diversity in growth, habit, and durability indoors make them popular houseplants. Flowers on these plants are often small or insignificant.

Many foliage houseplants originated in the tropics and grow best with indirect sunlight, well-drained, moist soils, and moderate humidity levels. Most foliage houseplants benefit from regular watering and light fertilizer applications during the growing season. The frequency of irrigation and fertilization should be reduced during the winter months.



## *Acalypha wilkesiana*

### **Copperleaf**

*Height 1 to 4 feet*  
*Indirect light*

Copperleaf is a fast growing plant noted for its distinctive red, orange, and copper leaves which are serrated and 5 inches long. Flowers are small and insignificant.

**Culture:** Keep moist and place in an area with above average humidity levels. Copperleaf is susceptible to spider mites in dry conditions.

Prune plant back to half size in early spring. Plants can be propagated by stem cuttings in spring. Occasional pinching promotes bushy growth.

**Caution:** This plant is potentially poisonous to people and/or pets.

## *Aglaonema* species

### **Chinese Evergreen**

*Height 2 to 3 feet*  
*Low to indirect light*

One of the most tolerant and reliable houseplants, Chinese evergreen has large, spear-shaped leaves at the end of cane-like stems. Leaf colors range from green to white and silver variegated. The unattractive, spathe-like flowers are partially hidden by the foliage and should be removed.

**Culture:** Grow in well-drained, evenly moist soil. Place plants in a warm location with average humidity levels. Plants grow slowly and resent repotting. This plant will flourish for years in low to moderate light and requires minimal care. When stems of Chinese evergreen become too long, cut back by half and root the stem tips.

‘Deborah’—wide silver midribs on bright white petioles

‘Emerald Beauty’ (‘Maria’)—dark green foliage with light green splotches

‘Silver Queen’—grey-green leaves with dark green midribs

‘Patricia’—silver leaf blades with green midribs

**Caution:** This plant is potentially poisonous to people and/or pets.







*Aglaonema* 'Silver Queen'



*Aglaonema* 'Emerald Beauty'



*Aglaonema* 'White Lance'

### *Aphelandra squarrosa*

#### **Zebra Plant**

Height 1 to 3 feet  
Indirect light

Dark green elliptic leaves have silvery veins. Plants produce an attractive, golden, cone-like flower in favorable conditions.

**Culture:** Keep soil evenly moist and fertilize regularly. Zebra plant tolerates lower light levels than some foliage plants but grows best in indirect sunlight. Provide average temperatures and above average humidity levels. Remove spent flowers and keep plants warm during winter. Leaf drop will occur if the soil is allowed to dry or plants are exposed to cold air. Plants are also sensitive to cold water.



### *Araucaria heterophylla*

#### **Norfolk Island Pine**

Height 2 to 10+ feet  
Indirect light

This conifer has dark green, soft needles arranged on large branches. Plants get large with woody stems arranged in symmetrical tiers. In their native South Pacific habitat, plants reach 200 feet in height. Indoors, plants grow slowly and remain much smaller.

**Culture:** Grow in well-drained, evenly moist soil. Plants prefer average temperatures and above average humidity levels. Sufficient light is needed to prevent irregular growth. Hot, dry conditions may cause branches to turn brown and die. Plants that are pot-bound are often restricted in growth.



*Asparagus densiflorus* 'Sprengeri'

### *Asparagus densiflorus*

#### **Asparagus Fern**

Height 12 to 18 inches  
Moderate to indirect light

Grown for its graceful, feathery foliage, this plant is wonderful in hanging baskets or containers. Light green, 1-inch-long, needle-like leaves are produced on arching branches. The common name refers to its delicate, fern-like foliage. However, the plant is not a true fern and its "fronds" are actually slender branches.

**Culture:** Unlike true ferns, asparagus fern will adapt to a variety of heat, light, and moisture conditions. It grows best in average temperatures and average to below average humidity levels. This plant is easily propagated by division. 'Myers'—stiff, erect, tapered, compact plumes. 'Sprengeri'—loosely branched, drooping stems.





*Aspidistra elatior* 'Variegata'

### *Aspidistra elatior*

#### **Cast Iron Plant**

Height 1 to 3 feet  
Low to moderate light

Masses of arching, broad, glossy, green leaves grow up to 18 inches in length. Plants sometimes bear flowers close to the ground.

**Culture:** Called cast iron plant for its tolerance, this plant endures heat, dust, low light, and lack of water better than most other houseplants. Grow in well-drained, evenly moist soil. Plants prefer average temperatures and humidity but can tolerate below average humidity levels. Plants are harmed by frequent repotting, so divide and repot only every four to five years.

'Variegata'—yellow or white stripes, sometimes stopping at the midrib



### *Beaucarnea recurvata*

#### **Ponytail Palm**

Height 1 to 6+ feet  
Direct light

Plants are slow-growing with an enlarged bulb-like base and a plume of stiff, dark green, strap-like leaves. Leaves can grow from 2 to 5 feet in length.

**Culture:** Provide average temperatures and below average humidity levels. Avoid over-watering. Because the bulbous base stores water, this plant tolerates dry conditions. Ponytail palm is difficult to repot (especially large specimens) but can be propagated by offsets from the base. Plant in containers only slightly larger than the base of the plant.



*Begonia masoniana*

### *Begonia* species

#### **Rex Begonia, Iron Cross Begonia**

Height 12 to 18 inches  
Indirect to direct light

Most begonias are grown for their flowers, but some species including *Begonia rex* (rex begonia) and *Begonia masoniana* (iron cross begonia) are grown for their decorative foliage. Rex begonia has thick leaves that are shaped and marked irregularly. Leaf colors include green, silver, red, pink, and purple. Iron cross begonias have puckered leaves with dark centers.

**Culture:** Grow plants in well-drained soil and allow plants to dry between waterings. Avoid wetting the foliage to prevent leaf diseases. These plants prefer warm temperatures and high humidity. During the summer, grow begonias in a bright window out of direct sun, on a shady porch, or bury the pots up to the rims in the ground in partial shade. Move plants to a bright, indirect window indoors before the cool night temperatures of fall arrive. Plants are easily propagated by leaf cuttings. Also shown on page 6.



*Calathea roseopicta*

### *Calathea* species

#### **Peacock Plant**

Height 1 to 3 feet  
Moderate to indirect light

Calatheas are noted for their colorful foliage. *Calathea ornata* has dark leaves with narrow pale pink markings. *Calathea makoyana* has leaves with a green and silver pattern. *Calathea roseopicta* has oval leaves with two-tone green, feather-like markings. Other *Calatheas* have yellow, pink, or white leaf markings. All types have reddish purple undersides and are often confused with *Maranta* (prayer plant).

**Culture:** Grow in evenly moist soil. These plants prefer average temperatures and above average humidity levels. Plants respond well to double potting to raise humidity. Water with room temperature water. Plants do well in terrariums. Low humidity can lead to leaf drop.







### *Chlorophytum comosum*

#### **Spider Plant**

Height 1 to 2 feet  
Low to indirect light

This is one of the easiest houseplants to grow, making it one of the most popular. It has 12-inch-long green and/or white grass-like leaves and often produces cascading stems with small plantlets. This plant is attractive in hanging baskets.

**Culture:** Spider plant is adaptable to various environmental conditions but prefers indirect light and average moisture and temperature levels. Small plantlets can be removed and potted to produce additional plants.



### *Cissus rhombifolia*

#### **Grape Ivy**

Height 2 to 10 feet, trailing  
Low to moderate light

Sharp toothed, dark green, glossy, trifoliate (3-parted) leaves are arranged along long trailing stems with tendrils. Plants are well suited for hanging baskets, small trellises, or moss poles.

**Culture:** Maintain an evenly moist soil for best performance. Plants prefer average temperatures and humidity levels. While best growth occurs in bright, indirect light, plants are durable and tolerate lower light levels. Propagates easily from stem/tip cuttings.

### *Codiaeum variegatum*

#### **Croton**

Height 1 to 4 feet  
Direct light

Crotons are colorful, tropical shrubs. The leathery leaves are variously shaped with patterns of yellow, scarlet, green, white, and pink.

**Culture:** Keep plants evenly moist and fertilize regularly. Plants prefer warm to average temperatures and average humidity levels. Water sparingly during winter months. As crotons grow old, the lower leaves fall leaving the trunk bare. Propagate by air layering or stem/tip cuttings. Inspect plants often for spider mites, aphids, and other insect pests. Also shown on page 8.

'Bush on Fire'—Narrow, linear leaves spotted in yellow, orange, and red  
'Florida'—Shallowly lobed leaves with prominent veins in yellow, orange, and red

'Gold Star'—Linear, green leaves heavily covered in yellow spots

'Mammy'—Linear, corkscrew twisted leaves in yellow, green, and red

'Petra'—Broad leaves with veins in yellow, green, orange, and red

**Caution:** This plant is potentially poisonous to people and/or pets.



*Codiaeum variegatum* 'Corot'



*Codiaeum variegatum* 'Petra'



*Codiaeum variegatum* 'Sturrocks veitchii'





## *Cycas revoluta*

### **Sago Palm**

Height 1 to 3 feet  
Indirect light

Resembling a palm (though not related to them) the sago palm is one of the oldest plants on earth. Stiff, dark green, leathery leaves arise from a brown bulb-like base. Plants grow very slowly, putting on one set of leaves a year.

**Culture:** Place plants in bright, indirect light. Too much light may cause foliage discoloration. Grow plants in average temperatures and allow the soil to dry between waterings. Over-watering is harmful. Propagation is very difficult with best success via seed.



*Dieffenbachia picta*

## *Dieffenbachia* species

### **Dieffenbachia, Dumbcane**

Height 1 to 5 feet  
Moderate to indirect light

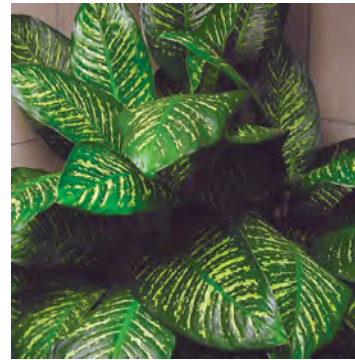
Large, variegated foliage distinguishes these houseplants. Several species and varieties are available. *Dieffenbachia amoena* has dark green leaves with white markings along the veins. Many cultivars of *Dieffenbachia picta* have yellow-green leaf blades blotched with ivory. In ideal conditions, some species may grow to 5 feet or more in height.

**Culture:** Allow the soil to dry between waterings. Dieffenbachias prefer average to below average humidity levels. Over-watering causes roots and the base of the cane to rot quickly. Remove lower leaves when they turn yellow. If the stem becomes bare and unattractive, air layer the top. It is also possible to cut off the top of the plant and root in coarse sand or perlite. Keep the lower canes; they will eventually grow a new lateral shoot.

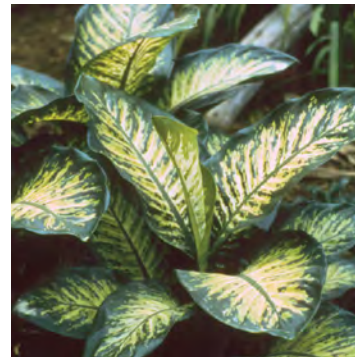
**Caution:** This plant is potentially poisonous to people and/or pets.



*Dieffenbachia 'Tiki'*



*Dieffenbachia amoena*



*Dieffenbachia maculata*



*Dizygotheca elegantissima 'Castor Variegata'*

## *Dizygotheca elegantissima*

### **False Aralia**

Height 4 to 8 feet  
Indirect light

This plant has dark green, almost black, narrow leaves that are palmately compound. The finger-like leaflets are elevated, giving the plant a delicate, lacy appearance. Mature leaflets are wider, longer, and lobed rather than serrated.

**Culture:** False aralia prefers consistently moist soil. Soil that is too wet will cause wilt or rot. Leaf drop may occur if plants are kept too dry. Place plants in average to above average humidity and average temperatures. Avoid drafty locations and inspect plants for spider mites and scale insects during dry winter conditions.







*Dracaena deremensis* 'Warneckii Lemon Lime'

## Dracaena Group

Plants in the genus *Dracaena* can provide a bold, attractive focal point in the home. Plants grow slowly and retain their foliage for long periods. Several species and cultivars ranging in size, form, and color are available.

**Culture:** These plants prefer warm to average temperatures and below average humidity levels. Wash foliage once a month to remove dust. When the bare stem beneath the foliage becomes too long, air layer the top.



*Dracaena deremensis* 'Bausei'

## *Dracaena deremensis*

### Striped Dracaena

Height 1 to 4 feet  
Moderate to indirect light

*Dracena deremensis* has strap-shaped, dark green leaves often with one or more stripes of white or yellow. Leaves are 6 to 12 inches long.



*Dracaena fragrans* 'Massangeana'



*Dracaena fragrans* 'Massangeana'

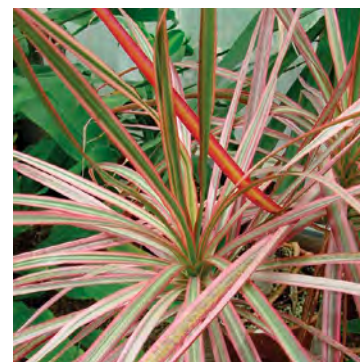
## *Dracaena fragrans*

### Corn Plant

Height 2 to 4 feet  
Moderate to indirect light

*Dracena fragrans* has broad, strap-shaped, green leaves that resemble corn leaves. Leaves can be 2 to 3 feet long. If lower leaves are removed, the stout stem becomes visible, creating a false-palm effect.

'Massangeana'—has a yellow band down the middle of each leaf.



*Dracaena marginata* 'Tricolor'

## *Dracaena marginata*

### Dragon Tree

Height 1 to 10 feet  
Moderate to indirect light

*Dracena marginata* has narrow leaves edged in red. The narrow stem of this plant is often twisted and branched to create interesting visual effects. Multiple plants can be placed in a large pot to provide a variety of plant heights at one time. Plants can be moved outdoors to a part shade location during summer.

'Tricolor'—Green leaves striped with yellow and red.







*Epipremnum aureum* 'Golden Queen'

## *Epipremnum* (*pinnatum*) *aureum*

### **Pothos, Devil's Ivy**

Height 3 to 10+ feet, trailing  
Low to moderate light

Pothos resembles philodendron, but has smooth textured, ridged stems. Plants have a trailing or climbing habit and can be grown and trained like philodendron. The medium-green, heart-shaped leaves are 2 to 6 inches long and are often streaked or spotted with cream, yellow, or silver. White aerial roots form at leaf nodes.

**Culture:** Allow soil to dry moderately between waterings. Plants grow best in average temperatures. Pinch tips to promote fullness. Plants root quickly from stem cuttings in spring or summer.

'Golden Queen'—yellow leaves blotched with green

'Marble Queen'—near white leaves blotched with green

'Tricolor'—green, yellow, and cream

**Caution:** This plant is potentially poisonous to people and/or pets.



*Nephrolepis exaltata* 'Bostoniensis'

## Fern Group

Height 1 to 3 feet  
Moderate to indirect light

Ferns have been widely grown indoors since Victorian times. The shape and size of the fronds vary among the fern species. Some of the best ferns for growing as houseplants include sword fern (*Nephrolepis*), Boston fern (*Nephrolepis exaltata* 'Bostoniensis'), bird's nest fern (*Asplenium nidus*), spider fern (*Pteris*), holly fern (*Cyrtomium falcatum*), maidenhair fern (*Adiantum raddianum*), and rabbit's foot fern (*Davallia fejeensis*).

**Culture:** Ferns like evenly moist soils. Grow in average temperatures and above average humidity. Bathroom windows are a great location to grow ferns. Dry soil conditions and low humidity may result in dead, brown fronds. Remove dead and damaged fronds to allow for new growth. Protect ferns from cool temperatures and reduce watering during winter months.



*Adiantum raddianum*



*Cyrtomium falcatum*



*Adiantum raddianum*



*Pteris cretica*



*Davallia fejeensis*







*Ficus elastica* 'Variegata'



*Ficus benjamina*



## Fig Group

Several figs can be successfully grown indoors. They are available in a variety of growth habits and leaf forms. Many small species make interesting specimen plants. Tree forms are excellent choices for large, open areas in the home.

**Culture:** These plants grow best in a warm, moist environment but do fairly well under normal household conditions. Allow plants to dry slightly between waterings. Provide consistent light levels. Sudden environmental changes can cause significant leaf drop. Rinse leaves occasionally to remove dust. Plants are typically propagated by stem/tip cuttings or air layering.



*Ficus benjamina* 'Variegata'

## *Ficus benjamina*

### Weeping Fig

Height 4 to 20 feet  
Moderate to indirect light

Weeping fig is a tree with arching branches. Green or variegated leaves are 4 to 5 inches long with pointed tips.

## *Ficus elastica*

### Rubber Tree

Height 1 to 15 feet  
Moderate to indirect light

Rubber tree has large, oval leaves that are thick, leathery, and dark green. Leaves can grow to 12 inches in length. The plant is usually grown as an upright specimen tree. Cultivars with green and white variegated foliage are available. Also shown on page 48.

'Decora'—dark green leaves with ivory midribs

'Robusta'—smaller dark red or red leaves, shorter internodes

'Tricolor'—green, white, and pink new leaves

'Variegata'—light green leaves with white or yellow margins



## *Ficus lyrata*

### Fiddleleaf Fig

Height 3 to 10 feet  
Moderate to indirect light

Fiddleleaf fig features thick, shiny, violin-shaped leaves that grow to 18 inches in length. This plant can be used as a small or large specimen tree in the home.





*Fittonia verschaffeltii* var. *pearcei* (L), var. *argyroneura* (R)

### *Fittonia* species

#### **Nerve Plant, Net Plant**

Height 6 to 12 inches  
Indirect light

This plant is easily recognized by the white to red veins in the leaves. Nerve plants have dark green leaves on creeping stems. Plants have a low, mounding form. Small, yellow flowers may develop under favorable conditions.

**Culture:** Nerve plants require warm temperatures and above average humidity levels. They can be difficult to grow in typical household conditions. Keep potting soil moist and fertilize frequently during periods of active growth. Nerve plant can be propagated by cuttings or division in the spring. Also shown on page 51.

*F. verschaffeltii* var. *argyroneura*—white leaf veins

*F. verschaffeltii* var. *pearcei*—bright red to pink leaf veins



*Hedera helix* 'Goldheart'

### *Hedera helix*

#### **English Ivy**

Height 1 to 3+ feet, trailing  
Indirect to direct light

Numerous varieties of English ivy are available; they differ in leaf size, shape, and color. Leaf forms range from lobed to star-shaped. Leaf colors include mixtures of green, white, yellow, and cream.

**Culture:** Keep plants evenly moist. Plants grow best in cool temperatures and average humidity levels. Begin training ivy when it is small. Pinch off the ends of the shoots frequently to produce a mass of lateral shoots. Train the laterals against a trellis or bamboo rod placed in the pot. Also shown on page 2 and back cover.

**Caution:** This plant is potentially poisonous to people and/or pets.



### *Maranta leuconeura*

#### **Prayer Plant**

Height 6 to 12 inches  
Moderate to indirect light

Prayer plant has green leaves colored with red, brown, purple, and cream. Leaves have purple undersides and fold up at night. Numerous cultivars with various colored leaves are available. Plants can be used as container plants but also make good specimens for terrariums.

**Culture:** Plants prefer warm temperatures and above average humidity levels. Do not allow water to stand at the base of plants because stems rot easily. Direct sunlight can scorch leaves.



### *Monstera deliciosa*

#### **Swiss Cheese Plant, Breadfruit**

Height 1 to 10 feet, trailing  
Moderate to indirect light

Broad, glossy, heart-shaped, perforated leaves are arranged on large climbing stems. Mature plants become very large with long aerial roots. A white and green variegated form is available. The juvenile form does not have holes in the leaves.

**Culture:** Plants prefer average temperatures and above average humidity. Leaves in low light develop few holes. Plants require a trellis or moss pole for trailing stems. Plants can be propagated by cuttings or air layering.

**Caution:** This plant is potentially poisonous to people and/or pets. Plants sometimes produce edible fruits but all other plant parts can cause skin irritation or illness.







*Rhaps excelsa*

## Palm Group

Palms range in size from tabletop plants to 20-foot-tall specimens. The fronds (leaves) may be erect or arching, fan or feather-shaped. Palms have a growing point at the tip of each stem. Cutting back the stem will remove the growing point and kill the plant.

**Culture:** Palms perform best in locations with average temperature and humidity levels. The soil should be allowed to dry out between waterings. Palms dislike disturbance, so repot only when the plant becomes pot-bound. Inspect the leaves frequently for spider mites. Dried, brown fronds can indicate that conditions are too warm and dry.



*Caryota mitis*

## *Caryota mitis*

### Fishtail Palm

Height 6 to 12 feet

Moderate to indirect light

Fishtail palm has arching fronds with 6-inch-long leaflets each with ragged edges that resemble a fish's fin.

## *Chamaedorea elegans* (*Neanthe bella*)

### Parlor Palm

Height 6 to 24 inches

Low to indirect light

Parlor palm has a compact growth habit and bright green leaves which arch gracefully outward.

## *Howea forsteriana*

### Sentry Palm

Height 1 to 8 feet

Moderate to indirect light

Sentry palm is a stately, upright plant with wide leaflets.

## *Rhaps excelsa*

### Lady Palm

Height 5 to 10 feet

Moderate to indirect light

Lady palm features upright stems and medium-green, fan-shaped, palmately compound leaves.



*Chamaedorea elegans*



*Howea forsteriana*



*Rhaps excelsa*





*Peperomia caperata* 'Emerald Ripple'

### *Peperomia* species

#### **Peperomia**

Height 6 to 18 inches  
Moderate to indirect light

Many species of peperomia are grown indoors. *Peperomia obtusifolia* has 2- to 3-inch-wide fleshy, green, round leaves. Leaf tips are notched. A variegated form has golden yellow leaves with green markings. *Peperomia sandersii* (watermelon peperomia) bears leaves in rosettes. Leaf stems are red, and the heart-shaped leaves are deep green with bands of silver.

**Culture:** Allow soil to dry moderately between waterings. Peperomias will tolerate neglect but will rot if over-watered. Plants grow best in warm areas with below average humidity levels.



*Philodendron bipennifolium*

### *Philodendron* Group

Philodendrons grow better than most other houseplants in the adverse conditions found inside most houses. Both trailing and upright, shrub-like plant forms are available in a variety of sizes.

**Culture:** Keep plants evenly moist. Philodendrons grow best in areas with indirect light, warm temperatures, and low humidity levels. Wash leaves occasionally to remove dust. When plants grow too long or reach the end of their trellis, cut back the stems to encourage new branches to develop. Also shown on page 6.

**Caution:** These plants are potentially poisonous to people and/or pets.

### *Philodendron bipennifolium*

#### **Fiddleleaf Philodendron**

Height 1 to 10 feet, trailing  
Low to indirect light

Fiddleleaf philodendron has irregularly-shaped, deeply lobed, olive-green leaves.



*Philodendron* x 'Moonlight'



*Philodendron scandens oxycardium*

### *Philodendron scandens oxycardium*

#### **Heartleaf Philodendron**

Height 1 to 10 feet, trailing  
Low to indirect light

Heartleaf philodendron is a trailing plant with 3- to 5-inch-long, heart-shaped leaves.



*Philodendron selloum*

### *Philodendron selloum*

#### **Lacy Tree Philodendron**

Height 1 to 5 feet  
Low to indirect light

Lacy tree philodendron features large, deeply cut leaves on long stalks.







*Pilea cadierei*

### *Pilea* species

#### **Aluminum Plant, Artillery Plant**

Height 12 to 18 inches  
Moderate to indirect light

Pileas are easy to grow and are available in a variety of bushy and trailing forms. Two of the easiest and most popular species are *Pilea cadierei* (aluminum plant) and *Pilea microphylla* (artillery plant.) Aluminum plant has thin, fleshy, quilted foliage with unusual silver markings. Artillery plant has feathery stems with pale green leaves. Its flowers discharge a cloud of pollen when shaken.

**Culture:** Keep plants evenly moist. Plants prefer average temperatures and above average humidity levels. Move pots away from windows on cold nights and keep plants away from drafts. Avoid wetting leaves and pinch occasionally to promote bushy growth.



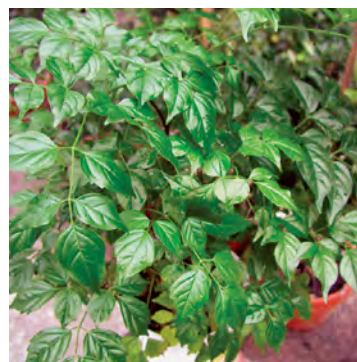
### *Plectranthus australis*

#### **Swedish Ivy**

Height 1 to 4 feet, trailing  
Indirect light

Commonly found in hanging baskets in Scandinavia, Swedish ivy makes a wonderful low-maintenance houseplant. Many types have prominent white edges or vein patterns on medium green leaves. Leaves resemble coleus more than true ivy plants.

**Culture:** Plants grow best in moist soil and average temperatures. Swedish ivy tolerates dry air and occasional dry soils. Reduce watering frequency during winter months. Plants are easily propagated by stem cuttings in spring or summer. Pinch occasionally to stimulate branching.



### *Radermachera sinica*

#### **China Doll**

Height 1 to 5 feet  
Indirect light

Large, glossy, dark-green, doubly-pinnate leaves are very distinctive. Leaflets are about 1 inch long with prominent veins and long tapering points. Plants have yellow, bell-shaped flowers that rarely appear when grown indoors.

**Culture:** Plants will become leggy in low light and prefer abundant light but cannot tolerate direct sunlight. Keep soil moist but not water-logged. Leaves drop with dry conditions. Place in average temperatures and humidity levels. Plants often benefit if moved to a full shade location outdoors in summer when temperatures are above 65°F at night. Leaves often drop when exposed to cigarette smoke. Propagate plants by stem cuttings.



### *Rhoeo spathacea*

#### **Moses-in-the-cradle**

Height 12 to 18 inches  
Indirect light

The stiff, sword-shaped leaves of this plant are dark, metallic green on top and glossy purple on the lower surface. Small, white flowers are borne in boat-shaped bracts in the leaf axils.

**Culture:** Keep plants evenly moist. Grow in an area with average temperature and humidity levels. Keep plants away from drafts and remove side shoots. Bright light is needed for color development, but direct sunlight should be avoided during summer months to prevent scorching. Also shown on front cover.





*Sansevieria trifasciata* 'Futura Superba'

### *Sansevieria trifasciata*

#### **Snake Plant, Mother-in-law's Tongue**

Height 6 inches to 4 feet  
Low to direct light

Erect, strap-shaped leaves are produced in clumps. Leaves are green and often banded with lighter green, cream, silver, or white. Some species and cultivars are longitudinally striped with yellow or white. Low-growing rosette varieties make good plants for windowsills.

**Culture:** These plants grow in almost any environment and are nearly indestructible indoors. Plant in well-drained potting soil and allow soil to dry moderately between waterings. Plants prefer warm temperatures with below average humidity and moderate light levels. Propagate by division or leaf cuttings. When propagated by division,



*Sansevieria trifasciata* 'Hahnii'

leaves will retain their pattern. When leaf cuttings are used, plain green leaves may be produced.

'Hahnii'—commonly referred to as bird's nest sansevieria; short, dark green leaves are produced in rosettes  
'Laurentii'—yellow margins on leaves  
'Moonshine'—light silvery gray-green leaves with dark green margins



### *Schefflera actinophylla* (*Brassaia actinophylla*)

#### **Umbrella Tree**

Height 6 to 12 feet  
Moderate to indirect light

A rapid grower, this plant produces large, compound leaves that can each be 1 to 2 feet in diameter. Leaflets are slender, fleshy, and glossy green.

**Culture:** Allow soil to dry moderately between waterings. Umbrella tree prefers average temperatures and humidity levels. Reduce the frequency of watering during winter months. Propagate by stem/tip cuttings or air layering.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Schefflera arboricola* 'Variegata'

### *Schefflera arboricola* (*Brassaia arboricola*)

#### **Dwarf Schefflera**

Height 1 to 5 feet  
Moderate to indirect light

The leaflets of this plant resemble umbrella tree, but they are much smaller, growing only 2½ to 3 inches long. Dwarf schefflera is a shrub-like plant with slender stems that can be used as a small specimen or table plant in the home. Several variegated cultivars are available.

**Culture:** Like umbrella tree, dwarf schefflera prefers average temperatures and humidity levels. Plants should be allowed to dry slightly between waterings. Propagate by stem/tip cuttings or air layering.

**Caution:** This plant is potentially poisonous to people and/or pets.







### *Senecio mikanioides*

#### **German Ivy**

Height 2 to 5 feet, trailing  
Indirect light

German ivy is a vine with maple-like, glossy leaves. Plants produce dull, orange-yellow, daisy-like flowers when grown in abundant light. Leaves are sometimes variegated white and often resemble English ivy. Plants work well in hanging baskets or on small trellises.

**Culture:** Plants are durable and tolerate a variety of conditions. While they prefer bright, indirect light and even moisture, they will perform well in moderate light and dry soils. German ivy does well in average to below average humidity. Plants should be pinched to encourage bushiness. Propagate by tip cuttings



### *Strobilanthes dyeranus*

#### **Persian Shield**

Height 1 to 3 feet, trailing  
Indirect light

The long, pointed leaves of persian shield are purple with dark green veins. Leaves grow 6 to 9 inches long and turn silvery with age. The plant has an erect, shrub-like shape.

**Culture:** Plants require bright light for best color development. Keep away from direct sunlight in summer to prevent scorching. Provide average temperatures and above average humidity levels. Water moderately during the growing season and sparingly during winter months. Plants should be pinched to encourage bushiness. Propagate from stem cuttings in spring or summer.



### *Syngonium podophyllum*

#### **Arrowhead Vine, Nephthytis**

Height 12 to 18 inches  
Moderate to indirect light

Arrowhead vine has arrowhead-shaped leaves on slender petioles. Leaves are bright green and can be variegated with silver, cream, or white. Young plants are mounding in form; older plants become more trailing.

**Culture:** Provide plants with consistent moisture. This plant thrives under normal household conditions of moderate light, average temperatures, and below average humidity levels. Provide plants with a pole for support, and prune occasionally to keep in bounds. Also shown on page 6.

‘Emerald Gem’–possesses glossy, dark green leaves ‘Green Gold’–leaves have yellow centers with green edges

‘Imperial White’–foliage has white centers with variegated margins

**Caution:** This plant is potentially poisonous to people and/or pets.



*Tradescantia fluminensis* ‘Variegata’

### *Tradescantia* species, *Zebrina* species

#### **Inch Plant, Wandering Jew**

Height 1 to 3+ feet, trailing  
Indirect light

This common name is used by two plant species (*Zebrina pendula*, and *Tradescantia fluminensis*). Both are members of the spiderwort family and are similar in appearance. Upper surfaces of leaves are green with variegated stripes in white, cream or silver, and lower surfaces are purple. Other forms are green or variegated with white, cream, or green. Use in hanging baskets or as groundcovers under larger plants.

**Culture:** Both types are easy to grow. Keep plants evenly moist. Grow in average temperatures and humidity levels. Propagates easily from tip cuttings. Also shown on page 48.





*Euphorbia milii*

## Flowering Houseplants

Most flowering houseplants require direct or bright, indirect light at levels well above those required for most foliage plants. Many have a limited season of bloom and often need a rest period before re-blooming. Flowering houseplants benefit from moderate fertilization and high humidity. For long-term success of flowering houseplants, supplemental light can be used if sufficient natural light is not available.



*Columnea mortinii*

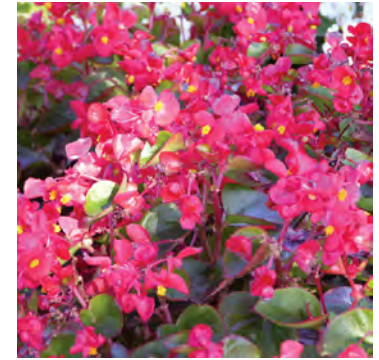


*Lantana camara*

## Annuals from the garden

Several annuals that are commonly grown in outdoor gardens can be grown as indoor plants. In addition to those that follow, other choices include sapphire flower (*Browallia speciosa*), heliotrope (*Heliotropium arborescens*), and lantana, (*Lantana camara*).

**Culture:** Plants brought in from the garden should be thoroughly rinsed and isolated from other houseplants for several weeks to prevent the spread of insects or disease. They need moderate temperatures and humidity. Keep soil moist and remove spent blooms. Many annuals will bloom year-round if placed in enough light. New plants can be started from cuttings. In spring, repot plant in all-purpose soil mix and trim plant back if it has become leggy.



## *Begonia × semperflorens cultorum*

### **Wax Begonia**

Height 6 to 12 inches  
Indirect to direct light

Plants possess succulent, glossy, bronze or dark green leaves and produce small white, pink, or red flowers.





*Coleus x hybrids (Solenostemon)*

**Coleus**

Height 12 to 36 inches

Indirect to direct light

Grown for its decorative foliage, leaves come in various shades and patterns of chartreuse, pink, yellow, white, maroon, red, purple, or green. Stems are square and plants produce an insignificant terminal spike of blue flowers.



*Fuchsia species*

**Fuchsia**

Height 1 to 3 feet

Direct light

Single to double pendulous flowers are pink, white, red, purple, rose, coral, orange, and yellow. Leaves are small, glossy, and found on stems that get woody with age.



*Impatiens x hawkeri*

*Impatiens x hawkeri and  
Impatiens walleriana*

**Impatiens**

Height *I. hawkeri*—12 to 36 inches;

*I. walleriana*—8 to 24 inches

Indirect to direct light

Impatiens have five-petaled flowers available in nearly every color except true blue, black, brown, and gold.

Leaves of *Impatiens hawkeri* are longer, dark green, serrated, and sometimes variegated. Leaves of *Impatiens walleriana* are green, serrated, and arranged on fleshy stems.



*Pelargonium x hortorum*

**Geranium**

Height 12 to 24 inches

Direct light

Large clusters of red, pink, violet, salmon, orange, or white flowers rise above dark green, nearly round leaves. The leaves often have a dark ring or zone near the leaf perimeter. For more information, see “Growing and Overwintering Garden Geraniums” (RG 320) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>.





*Anthurium andreaeanum*

## Anthurium species

### Flamingo Flower

Height 12 to 24 inches  
Indirect light

Colorful long-lasting “flowers” consist of a leaf-like spathe and cigar-shaped spadix that rise above the glossy green, arrow- or heart-shaped foliage and resemble the flowers of peace lily (*Spathiphyllum*). Flamingo flowers may be brilliant red, white, coral, or pink. Crystal anthurium (*Anthurium crystallinum*) is grown for its velvety green leaves with silver veins and inconspicuous flowers.

**Culture:** Keep the soil evenly moist. Provide above average humidity and warm temperatures. Maintain a minimum night temperature of 60°F. Remove spent blooms. Fertilize monthly during the growing season. Also shown on back cover.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Begonia coccinea*

## Begonia species

### Angel Wing Begonia

Height 1 to 3 feet  
Indirect light

Many types of begonia are grown indoors. Some are easily grown for years indoors and are prized for their flowers. *Begonia coccinea* and the closely related *Begonia lucerna*, both known as angel wing begonia, have long, bamboo-like shoots with glossy, long, leaves. *Begonia coccinea* has leaves with red margins, while the foliage of *Begonia lucerna* is covered with white spots. Plants produce large clusters of coral, red, pink, or white flowers.

**Culture:** Place begonias in average home temperatures and humidity. Never allow plants to get too dry or wet. Bright light is needed for good flowering, but direct sunlight is harmful. Plants should be pinched often to promote bushiness. Stems often need support. Using a heavy container helps balance the tall stems.

## Bromeliad Group

Height 4 to 24 inches  
Indirect light

Bromeliads are a large group of adaptable plants. Commonly grown genera are *Aechmea*, *Guzmania*, *Neoregelia*, *Tillandsia*, and *Vriesea*. Long, strap-like leaves radiate from the center of the plant forming a vase that holds water. Brilliantly colored flower spikes emerge from the center of mature plants. These spikes vary in shape from sword-like to star-shaped and can be red, pink, yellow, or orange. The flowers often last several months.

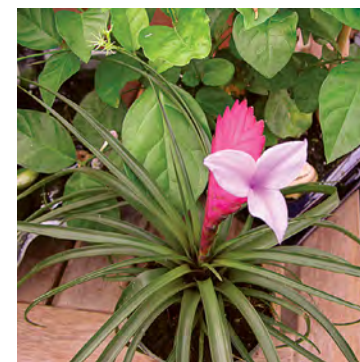
**Culture:** Bromeliads prefer a moist, well-drained soil, indirect light, and warm temperatures. Keep the center of the plant filled with water. Spray the leaves with water occasionally to remove dust. Plants die after flowering. Propagate from lateral shoots that develop at the base after the flower withers. Mature plants can be forced into bloom by placing them in a clear plastic bag along with one or two ripe apples for one to two weeks. In a few months, flower development will occur. Also shown on front cover and page 50.



*Aechmea* 'Silver King'



*Neoregelia caroliniae*



*Tillandsia cyanea*







*Citrus limon* 'Ponderosa'

## Citrus species

### Citrus

Height 1 to 10 feet  
Direct light

Several types of dwarf citrus can be grown indoors. The most common is the Calamondin orange (*Citrus mitis*). This small, woody shrub grows 4 feet tall and has 3-inch-long, leathery leaves. Plants produce small, white, fragrant flowers followed by 1- to 1½-inch, orange, edible, bitter fruit. Sweet orange (*Citrus sinensis*) is well-suited for indoors as well. It is similar in size to Calamondin orange, but has spines and larger, 2½-inch fruit. Dwarf lemon (*Citrus limon*) also can be grown indoors. Two good cultivars of dwarf lemon are 'Meyeri' and 'Ponderosa'. Both cultivars grow much larger than the Calamondin and sweet orange and produce yellow, bitter fruit.



*Citrus limon* 'Ponderosa'

**Culture:** Citrus should be placed in bright, direct light. Water plants regularly while growing in spring and summer; water sparingly in winter. Fertilize during summer months with soluble houseplant fertilizer. Plants benefit greatly from being placed outside during the summer months. Citrus is well suited for home greenhouses.



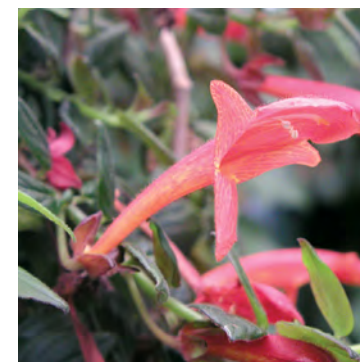
## *Clivia miniata*

### Kaffir Lily

Height 1 to 4 feet  
Indirect to direct light

Clusters of 3-inch, bell-shaped flowers are borne atop stalks from February to May. Flowers may be orange, red, yellow, or cream. The leaves are strap-like, 18 inches long, and dark green.

**Culture:** Kaffir lily prefers cool temperatures and abundant moisture. Plants will not bloom without a proper rest period. From October to February, keep plants in temperatures of 50° to 55°F and water sparingly. Keep plants almost dry until the flower stalk is at least 6 inches high in February. Then move to temperatures of 65° to 70°F and keep soil evenly moist. Remove spent blooms after flowering. Established plants resent repotting.



## *Columnea* species

### Goldfish Plant

Height 1 to 3 feet, trailing  
Indirect light

Vibrant, orange to red, tubular flowers are borne on long, trailing stems. Leaves are dark green, 1 to 1½ inches long, and smooth or covered in velvety pubescence, depending on species.

**Culture:** Grow plants in high humidity and warm temperatures. Promote bloom by placing plants in a cool location during the winter. Water sparingly during the winter resting period. Once flower buds form, move to a warm location and water regularly. Stems can be cut back after blooming. Also shown on page 22.





## *Cyclamen persicum*

### **Cyclamen**

Height 8 to 16 inches

Indirect light

Cyclamen is a popular flowering houseplant. Shuttlecock-like flowers are 1 to 2 inches across and borne on slender, 9- to 12-inch-long flower stalks. Flowers of white, red, pink, salmon, and violet are held above mottled, heart-shaped, 2- to 3-inch-wide leaves.

**Culture:** Cyclamen is often discarded after flowering, but plants will flower again with proper care. Place cyclamen in bright, indirect sunlight in cool temperatures. Keep plants continuously moist at all times, but never wet. The crown of the plant will rot quickly in waterlogged soil. Plants often go dormant during the summer months. Reduce watering during this period. Repot cyclamen in all-purpose soil mix in the fall being careful to leave one-third of the tuber above the soil line. Once regular watering is resumed, plants will grow again.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Cyclamen persicum* 'Rose of Aalsmeer'



*Episcia cupreata* 'Variegata'

## *Episcia* species

### **Flame Violet**

Height 6 to 18 inches, trailing

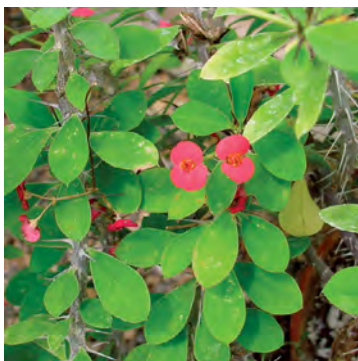
Indirect light

Attractive silver and green leaves are 1 to 2 inches long and covered in velvety hairs. Tubular, red-orange flowers are  $\frac{3}{4}$  inch across and borne along the trailing stems.

**Culture:** Flame violet can be difficult to grow indoors because of its high humidity requirement. One possibility is to grow it in a terrarium where humidity levels are higher. Plants also can be grown in hanging baskets. Keep soil moist, but not wet, at all times. Place in average home temperatures. Plants can be trimmed after flowering.







### *Euphorbia milii*

#### **Crown of Thorns**

Height 1 to 3 feet  
Indirect to direct light

Plants produce small, red, pink, yellow, or white flowers nearly year round. Dark green, 2-inch leaves are sparsely arranged on very thorny, pencil-thick branches. All parts exude milky sap when broken.

**Culture:** Crown of thorns is a very tolerant houseplant that does well in sunny locations. Allow plants to dry out between waterings and water sparingly during the winter. Leaves may drop during winter, but new foliage should emerge in spring. Also shown on page 22.

**Caution:** This plant is potentially poisonous to people and/or pets.



### *Hibiscus* species

#### **Hibiscus**

Height 3 to 10 feet  
Direct light

Large, 4- to 6-inch wide flowers have prominent yellow stamens. Flowers can be double or single in yellow, salmon, orange, pink, red, or white. Leaves are dark green and 3 inches long with a sawtooth margin.

**Culture:** Place hibiscus in a bright, sunny location. Plants are often moved outside in late spring. Summer temperatures should be warm. Keep the potting soil consistently moist with regular watering from spring through summer. Water less frequently during winter. Fertilize monthly in summer. Plant size can be controlled with regular pruning. Cut back stems in late winter to encourage a compact, dense habit. Inspect plants frequently for whiteflies.

### *Hippeastrum* species

#### **Amaryllis**

Height 1 to 2 feet  
Indirect to direct light

Amaryllis is a large, tropical bulb that produces tall flower stalks with three to five funnel-shaped, 5- to 6-inch diameter flowers in red, pink, white, purple, green, or orange. The flowers appear 6 to 8 weeks after planting and are followed by long, strap-like leaves.

**Culture:** Plant so that one-third of the bulb is above the soil line in well-drained potting soil. Place in warm temperatures. After flowering, cut off the flower stalk and place the plant in bright light. Water regularly and fertilize every two weeks. Plants can be moved outside in late spring. Harden or acclimate the plant to the outdoors for a few days. Then place the pot in the ground in part sun. Bring the plant indoors in mid-September. Stop watering when the leaves begin to yellow. The plant will go dormant. Place the dormant plant in a cool (45° to 50°F) location. The bulb can be kept dormant for a couple months. Resume watering when new growth emerges.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Hippeastrum cantata*



*Hippeastrum 'Fantastica'*





### *Hoya carnosa*

#### **Wax Vine**

*Height 1 to 15 feet, trailing/climbing  
Indirect light*

Sweet-smelling, 3/8-inch, white flowers have a purplish red center. Clusters of flowers are borne on long, trailing or climbing stems with fleshy, glossy, 2- to 3-inch-long leaves.

**Culture:** Plants should be trained on a trellis or grown in a hanging basket. Keep soil evenly moist. Place in average home temperatures and humidity. Abundant leaves and no flowers is the result of high fertility. Flowers develop on short stems or spurs present throughout the plant. When removing spent flowers, do not remove the spur. The new flower develops in the same location. Change in moisture levels, light, or location result in bud drop. Plants also resent repotting. Also shown on page 46.



## Orchid Group

Many orchids can be grown indoors. They require abundant light, high humidity, and porous soil. Hundreds of species are grown in greenhouses by orchid enthusiasts. Many can be grown in the home. They vary widely in color and flower shape.

**Culture:** Successful culture of orchids requires a rest period, cool evening temperatures, 10 to 15 hours of light daily, and humidity levels between 40 and 80 percent. Many orchids are grown in special soil mixtures that are loose, light, and air-permeable but are able to store some nutrients and water. In late summer and fall, orchids require a rest period. During the rest period, water less frequently and increase light levels. If necessary, use artificial lighting. In late winter or early spring, water more frequently to induce new growth. Orchids will bloom with abundant warmth, moisture, and fertilizer. Plants should never be allowed to dry out completely. Repot plants every 2 to 3 years in new potting medium.



### *Cattleya* species

#### **Corsage Orchid**

*Height 1 to 3 feet  
Indirect to direct light*

Large, 4- to 6-inch-wide, fragrant flowers have a conspicuous lip and come in a wide range of colors including white, yellow, pink, lavender, and red. The flowers are borne above fleshy, oval leaves. The leaves and flowers arise from a pseudobulbous stem. Flowers last 1 to 4 months.



### *Phalaenopsis* species

#### **Moth Orchid**

*Height 1 to 2 feet  
Indirect to direct light*

The moth orchid is one of the easiest orchids to grow. Plants produce panicles (clusters) of 3- to 5-inch-wide, non-fragrant flowers. The 3-lobed flowers have two large petals and a brightly colored, often contrasting lip. Colors are white, pink, lavender, purple, orange, and yellow. Leaves are fleshy and oblong with an indented midrib. Also shown on front cover.





### *Pachystachys lutea*

#### **Golden Shrimp Plant**

Height 1 to 3 feet  
Indirect light

Cone-shaped flower heads are 4 to 6 inches tall and borne at the terminal ends of the stem. The true flowers are the white structures that stick out of the bright yellow cone-shaped heads. The yellow heads are actually composed of modified leaves or bracts. Leaves are oval, 4 inches long, dark green, and have prominent veins. Plants remain in bloom for several months in the spring.

**Culture:** Maintain consistent moisture during bloom and reduce watering frequency during the winter. Plants should be trimmed back after bloom to control size. Shoot tips root well when taken in spring and summer.



*Rosa 'Meigabi'*

### *Rosa* species

#### **Miniature Rose**

Height 1 to 3 feet  
Direct light

Dwarf, 12-inch-tall plants bear single to double, ½- to 1½-inch-wide flowers in red, white, pink, orange, lavender, and yellow. Leaves are dark green, small, compound, and identical to the garden rose leaf, only reduced in size.

**Culture:** Miniature roses need bright light and evenly moist soil. Plants can be placed in the garden after danger of frost has passed. Most varieties are cold hardy and can be planted outside. Varieties that are not cold hardy should be brought indoors before a hard freeze and placed in bright light. For more information, see “Miniature Roses” (RG 321) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>.

### *Saintpaulia* species

#### **African Violet**

Height 3 to 12 inches  
Indirect light

African violets are one of the most common flowering houseplants in the United States. They produce 1- to 1½-inch-wide, single or double flowers in white, blue, pink, purple, or bicolor. The round- to heart-shaped, fleshy, velvety leaves are usually 2 to 4 inches across. Some varieties have green, white, and pink leaf variegations.

**Culture:** Place African violets in average temperatures and above average humidity. Keep soil evenly moist and use a weak fertilizer in spring and summer. Plants can be watered from the top or the bottom. When watering from the top, avoid getting water on the foliage. Water that is too cold or too warm on the leaves will cause unsightly, light-colored spots. When watering from the bottom, place the pot in a saucer of water and allow the potting soil to absorb water through the bottom of the pot. Plants are often successfully grown under artificial light. For more information, see “African Violets” (RG 322) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>. Also shown on page 2.



*Saintpaulia 'Purple Choice'*



*Saintpaulia 'Glowing'*



*Saintpaulia 'Mr. Chips'*





### *Schlumbergera* species

#### **Holiday Cactus**

Height 6 to 36 inches  
Indirect light

Holiday cacti include Christmas cactus, Thanksgiving cactus, and Easter cactus. These flowering houseplants produce dark green, flat, ½-inch-wide stems with scalloped edges that resemble leaves. Brilliant red, pink, white, or violet flowers develop at the stem ends during the short days of winter.

**Culture:** Keep the soil of holiday cactus moist in winter, spring, and summer.

Allow plants to dry out slightly in the fall. Place in cool temperatures and medium humidity. In late September or early October, place the plant in a location that receives bright light during the day, but no artificial light during the night. Place plants in average to below average temperatures. Holiday cacti are easy to propagate from stem sections that are two or three segments long. For more information, see “Growing Holiday Cacti” (RG 308) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>.



### *Sinningia speciosa*

#### **Gloxinia**

Height 6 to 12 inches  
Indirect light

Gloxinias have upturned, fuzzy, bell-shaped flowers that are 3 inches across. Flowers can be colored red, purple, pink, white, or blue. Leaves are velvety, oval, and 8 inches long.

**Culture:** Place plants in bright, indirect light. The soil must be kept evenly moist. Do not wet the leaves or spotting may occur. Gloxinias prefer warm day temperatures and cool night temperatures. After blooming ceases, gradually withhold water until the stems and leaves die back. Let the tuber rest in a cool, dark location for 2 to 4 months. Water sparingly until new growth appears, then repot in fresh potting soil and resume normal care.



### *Spathiphyllum* species

#### **Peace Lily**

Height 1 to 4 feet  
Low to indirect light

Leaves are shiny, dark green, and sword shaped. Oddly-shaped flowers (composed of a spathe and spadix) are held above the foliage on long stalks. The cigar-shaped spadix is backed by a white, leaf-like spathe. As the flower ages, the spathe turns from brilliant white to green.

**Culture:** Peace lilies are very tolerant plants that grow in low light but flower best in indirect sunlight. Place in average temperatures and below average humidity levels. Keep soil moist. Leaves will wilt when plants are dry but will revive after watering. Plants are easily propagated by division.

**Caution:** This plant is potentially poisonous to people and/or pets.







### *Strelitzia reginae*

#### **Bird of Paradise**

Height 3 to 5 feet  
Direct light

Unique, 6- to 8-inch-wide flowers are borne on tall stalks above the foliage in spring and summer. Flower resembles a bird's head with colorful orange and blue plumes. Leaves are large, paddle-shaped, and 1 foot long. Leaf stalks are 1 to 2 feet long.

**Culture:** Place plants in direct light. Water thoroughly when plants are dry. Reduce watering frequency during the winter. Plants do well in average home temperatures and humidity. Plants can be propagated through division.



*Streptocarpus saxorum*

### *Streptocarpus species*

#### **Cape Primrose, False African Violet**

Height 8 to 36 inches  
Indirect light

Two different species are common. Cape primrose (*Streptocarpus hybrida*) has large, tubular flowers in white, blue, purple, pink, and red. Flowers are borne above large, 8- to 12-inch-long, strap-shaped leaves. False African violet (*Streptocarpus saxorum*) is taller and has small, velvety, fleshy leaves on fleshy stems. Small, tubular flowers are one sided and borne on wiry stems. The flowers are blue, purple, white, or lavender with a light colored throat. Plants do well in hanging baskets.

**Culture:** Like African violets, plants require bright, indirect light. Let soil dry out slightly between waterings and apply a dilute fertilizer solution every 2 weeks in spring and summer. Water plants from the bottom. Water that is too cold or too warm on the leaves will cause unsightly, light-colored spots.

### *Zantedeschia species*

#### **Calla**

Height 2 to 4 feet  
Direct light

Calla has large, 1½-foot long, arrow-shaped, glossy leaves that arise from an underground rhizome. Hundreds of tiny, inconspicuous flowers are borne on a cigar-shaped structure called a spadix. Surrounding the spadix is a showy leaf-like structure called a spathe. The colorful spathe can be white, pink, purple, or yellow.

**Culture:** Callas are native to swampy areas in Africa and must be planted in well-drained potting soil that is kept moist to wet. Callas do best in cool temperatures and average humidity. Callas require a rest or dormant period. In late spring, reduce the frequency of watering and allow the foliage to yellow and die. In late summer or early fall, after the dormancy period, repot rhizomes and start plants in average temperatures. Once growth begins, place in cool temperatures and full sunlight.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Zantedeschia elliotiana*





## Succulents

Succulents are plants with thick, juicy stems and/or leaves. Succulents are found in many different plant families. All cacti are succulents, but not all succulents are cacti. Succulents generally make good houseplants because they require little care and grow well in many homes. Most

succulents grow best when located in warm sites with bright, direct sunlight. They generally perform best when their potting medium is allowed to dry between waterings. Many succulents and cacti rot quickly if watered too frequently.



### *Agave americana*

#### **Century Plant**

Height 1 to 4 feet  
Direct light

Century plant has a rosette-type growth habit and strap-shaped, gray-green leaves. Leaves can grow several feet long, come to a sharp point, and have spines along the margins. Because of its large size and sharp leaves, this plant is not suitable for small spaces.

**Culture:** Century plant is native to dry, warm climates and does well in areas with moderate temperatures and low humidity levels. Allow the potting medium to dry between waterings because over-watering can cause roots to rot.



*Aloe vera*

### *Aloe species*

#### **Aloe**

Height 6 to 18 inches  
Direct light

Aloes form a rosette of fleshy, triangular-shaped leaves. A number of species and varieties, differing in leaf size and color, are available. Leaf colors range from dark green to blue-green. Some species have small spines along the leaf margins. *Aloe variegata* is one of the most popular. *Aloe vera*, medicinal aloe, has medium green, fleshy leaves that ooze a clear gel when broken. This gel is commonly used to soothe minor burns.

**Culture:** Aloes prefer moderate temperatures and low humidity levels. From spring to autumn, water thoroughly when the soil begins to dry. Water sparingly during the winter. Propagate by carefully separating offshoots that form near the base of the plant.

**Caution:** This plant is potentially poisonous to people and/or pets.





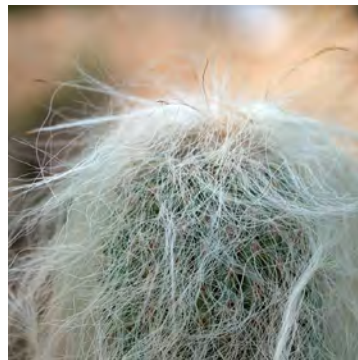
### *Bryophyllum daigremontianum*

#### **Mother of Thousands**

Height 2 to 3 feet  
Indirect to direct light

Mother of thousands is an upright-growing succulent with 4-inch-long leaves. The triangular leaves have serrated edges and curl inwards. Tiny plantlets develop along the edge of each leaf.

**Culture:** Plant in well-drained potting mix. Prevent root rot by watering only when the potting medium is dry. This plant does well in areas with moderate temperatures and low to average humidity levels. Propagate from the plantlets that form along leaf edges.



### *Cephalocereus senilis*

#### **Old Man Cactus**

Height 6 to 12 inches  
Direct light

This columnar cactus gets its common name from the 5-inch-long, white hairs that cover sharp spines on the plant. It rarely produces flowers indoors.

**Culture:** Like other cacti, plants will rot quickly if kept too moist. Water regularly when the plant begins to show new growth in spring. During the winter months, keep the plant dry and provide average to warm temperatures.



### *Crassula argentea*

#### **Jade Plant**

Height 1 to 3 feet  
Indirect to direct light

Jade plant has a tree-like trunk and shiny, bright green, 1- to 2-inch-long, oval leaves. The leaves are broadest at the tip and sometimes have red or white margins. Young stems are green while older branches are tan. Small, white flowers may develop under favorable conditions.

**Culture:** This plant has a limited, shallow root system and will do well in a shallow pot. Plants should be allowed to dry slightly between waterings. Low light levels and too much water can result in weak, limp growth. Jade plant can be pruned to maintain its shape and propagated from leaf or stem cuttings. Also shown on front cover and page 51.



### *Echinocactus grusonii*

#### **Barrel Cactus**

Height 6 to 12 inches  
Direct light

Barrel cactus is sphere-shaped with prominent ridges. Golden-yellow spines run along the length of each ridge and cover the top of the plant. A slow grower, this plant could take more than 10 years to reach a diameter of 9 inches.

**Culture:** Provide warm temperatures and well-drained soil. Over-watering can be lethal. During the summer, barrel cactus can be placed outdoors in a sunny location if protected from rain.





*Euphorbia lactea* 'Cristata'

## *Euphorbia lactea*

### **Candelabra Plant**

Height 1 to 15 feet  
Indirect to direct light

Plants have upright, ridged, angled branches with light green bands running down the center. Spines are located in pairs along each ridge. Small leaves are located between each set of spines.

**Culture:** Candelabra plant grows best in a well-drained potting medium. A variety of diseases including stem rots, molds, and leaf spots will develop if the plant is kept too moist. Provide warm temperatures. The plant can be propagated from stem cuttings.



**Caution:** This plant is potentially poisonous to people and/or pets.



## *Euphorbia tirucalli*

### **Pencil Cactus**

Height 1 to 15 feet  
Indirect to direct light

Contrary to its common name, this is not a true cactus. It has many thin, green, leafless, thornless stems and can quickly become a large houseplant.

**Culture:** Pencil cactus does well in normal household temperature and humidity levels. Plant in a well-drained potting mixture and allow soil to dry between waterings. Propagate from stem cuttings.

**Caution:** This plant is potentially poisonous to people and/or pets.



## *Gynocactus mihanovichii*

### **Grafted Cactus**

Height 6 to 18 inches  
Direct light

Grafted cacti are made by grafting colorful, globular-shaped stems onto a green cactus. The green "stem" provides chlorophyll for growth while the brightly colored top portion provides an interesting visual effect.

**Culture:** Grow in the sunniest spot available, and allow the potting mixture to dry between waterings. Reduce the frequency of watering during winter months. If grown on a windowsill, move the plant away from the glass on cold nights.







### *Haworthia* species

#### **Haworthia**

Height 6 to 8 inches  
Indirect to direct light

Haworthias resemble aloe in appearance and grow as a rosette of thick, stiff, pointy leaves. Leaves have raised, white bumps in various patterns. Some species have a translucent leaf surface instead of the typical white “warts.”

**Culture:** Plant in a well-drained potting mixture and water when the surface of the potting medium is dry to the touch. Propagate from offsets. Haworthia will grow well in moderate temperatures and low humidity levels.



*Kalanchoe 'Anne-Marie'*

### *Kalanchoe blossfeldiana*

#### **Kalanchoe**

Height 12 to 18 inches  
Indirect to direct light

While many succulents have interesting leaves, kalanchoe produces colorful flowers. Orange, yellow, pink, red, or white flowers are produced in 3- to 5-inch-diameter clusters. Flowers are borne above 2-inch-long, lobed, fleshy, dark green leaves.

**Culture:** Pot kalanchoe in fertile potting soil and keep moist. Grow in full sun, moderate temperatures, and medium humidity. Kalanchoe needs at least 3 weeks of long nights to bloom. Beginning in the middle of October, keep the plant in total darkness, void of natural and artificial light, for 15 hours each night. Return to a sunny window each morning.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Lithops lesliei*

### *Lithops* species

#### **Living Stones**

Height ½ to 2 inches  
Direct light

Living stones are tiny, slow growing plants that resemble small rocks. Each plant has a pair of thick leaves divided by a deep cleft. Leaf colors range from brown to olive to gray-green. Showy white, pink, or yellow, daisy-like flowers appear in favorable conditions.

**Culture:** Living stones should be kept evenly moist during the growing season and dry throughout the winter. Place in a coarse, well-drained potting soil. These plants do well in moderate temperatures and low humidity levels. When transplanting, bury ¼ of the plant in the potting mixture.



### *Mammillaria* species

#### **Nipple Cactus**

Height 2 to 8 inches  
Direct light

Containing more than 250 species, this genus includes powder puff cactus (*Mammillaria bocasana*), old lady cactus (*Mammillaria hahniana*), and fishhook pincushion (*Mammillaria wildii*). Plants form clusters of several small, compact, rounded stems covered in spines.

Flowers are ½- to 2-inches across in white, cream, red, pink, or yellow.

**Culture:** Plant in well-drained soil and water only when soil is dry to the touch. Place in average to warm temperatures and low humidity levels. Plants flower readily, even when quite young. Red fruit sometimes forms after flowers fade. Plants are easily propagated from offsets. Also shown on page 3.





### *Notocactus (Parodia) leninghausii*

#### **Golden Ball Cactus**

Height 3 to 12 inches  
Direct light

Covered in thousands of small, golden colored spines, golden ball cactus has a ball shape that becomes columnar with age. Old specimens can be up to 2 feet in height. Plants sometimes produce offsets when older. Yellow, 2-inch flowers may appear when plants are mature in favorable conditions.

**Culture:** Plant in well-drained soil and water only when soil is dry to the touch during growing season. Reduce watering in winter. Plants will quickly rot if over watered. Place plants in average to warm temperatures and low humidity. Plants are best propagated by seed or offsets.



### *Opuntia* species

#### **Bunny Ears, Prickly Pear**

Height 12 inches  
Indirect to direct light

Numerous species of *Opuntia* exist and range in habit from prostrate groundcovers to tree-like plants. The most popular species for the home is *Opuntia microdasys*, commonly called bunny ears. This plant has oval pads with small tufts of yellow, bristly barbs. Other species found include *Opuntia bergeriana* and *Opuntia rufida*. *Opuntias* occasionally produce attractive, brightly colored, orange, yellow, or red flowers.

**Culture:** Like all cacti, bunny ears prefers a well-drained medium in a warm area with low humidity levels. Allow the potting mixture to dry between waterings and reduce the frequency of watering in winter months. Over-watering can lead to root rot.



*Sedum morganianum*

### *Sedum* species

#### **Sedum**

Height 6 to 12 inches  
Direct light

Hundreds of species are available in various forms, colors, and growth habits. Most sedums grown as houseplants are low-growing with thick, waxy leaves. Leaves can be cylindrical or boat-shaped and colors include grey-green, blue-green, red, and variegated.

**Culture:** Sedums do well in moderate temperatures and low humidity levels. Grow in a well-drained potting mixture. Water only when the soil is dry to the touch. Propagate from cuttings or division. Also shown on back cover.



*Sempervivum arachnoideum*

### *Sempervivum* species

#### **Hens and Chicks**

Height 1 to 6 inches  
Direct light

The pointed, triangular leaves of this plant grow in a rosette form. Offsets commonly form around the base, giving this plant its common name. Leaves are usually medium green, although several colorful varieties possess red or burgundy-tipped foliage. Flowers are reddish-purple and produced on tall, fleshy stalks.

**Culture:** Plants grow equally well outdoors and indoors. They thrive on neglect and grow best when potted in a well-drained potting soil, watered occasionally, and repotted only when absolutely necessary. Propagate from offsets.







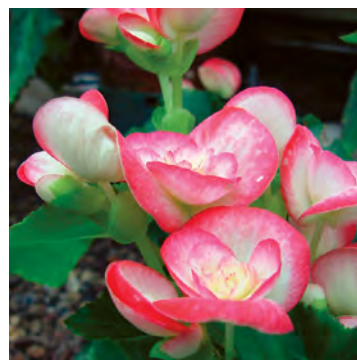
*Euphorbia pulcherrima*

## Florist's Plants

Many florist's plants can serve as long-lasting flower arrangements in the home and make excellent gifts. Purchase plants with just a few open flowers to maximize the duration of bloom in the home. If transporting florist's plants when outdoor temperatures are below 45°F, be sure to protect the plant with plastic or paper sleeves. Have the car warmed up and minimize the length of exposure to cold temperatures. Many florist's plants have complicated blooming requirements, making them difficult to force into bloom again. Because of this, flowering florist's plants are usually discarded after the blooms fade.



*Chrysanthemum x morifolium* 'Copper Charm'



*Begonia x hiemalis*



*Begonia x tuberhybrida*

## Begonia species

### Rieger Begonia, Tuberous Begonia

Height 12 to 24 inches

**Indirect light**

The Rieger begonia (*Begonia x hiemalis*) and the tuberous begonia (*Begonia x tuberhybrida*) are common florist begonias. Large pink, white, cream, yellow, red, and orange flowers can be single or double. They are borne atop dark green, fleshy foliage with serrated edges.

**Culture:** Place begonias in average home temperatures between 60° and 70°F. Never allow plants to dry out completely or remain soggy. When finished flowering, tuberous begonia can be saved and forced into bloom again. Allow soil to dry and cut back dried foliage. Lift tubers from soil and store in sphagnum peat moss. Rieger begonias should be discarded after flowering because they are difficult to force into bloom again. Also shown on back cover.



*Begonia x tuberhybrida*



*Begonia x tuberhybrida*





*Tulipa 'Artist Cottage'*

## BULBS

Height 4 to 18 inches, depending on species  
Indirect to direct light

Many spring-blooming bulbs can be forced to bloom out of season and make excellent indoor plants. Spring-flowering bulbs suitable for forcing include tulips (*Tulipa* species), daffodils (*Narcissus* species), crocus (*Crocus vernus*), and hyacinths (*Hyacinthus orientalis*).

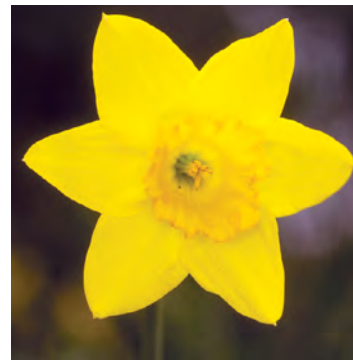
**Culture:** Plant bulbs in well-drained potting soil with tips even or slightly above the rim of the pot. Place the potted bulbs in complete darkness in a 40° to 45°F location and water periodically. After 12 to 16 weeks, remove the bulbs from cold storage and place in cool temperatures (55° to 60°F) and bright light. The bulbs will

bloom in about one month. Spring-flowering bulbs are usually discarded after blooming. If attempting to save forced bulbs, remove the spent flowers and place the plants in a sunny window. After bulbs have flowered, they may be planted in the garden when the danger of frost has past. Few bulbs flower again in the first year; some are so depleted from forcing that they will never flower again. For more information, see "Forcing Flower Bulbs" (PM 1319) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>.

**Caution:** These plants are potentially poisonous to people and/or pets.



*Hyacinthus orientalis*



*Narcissus*



*Chrysanthemum × morifolium 'Tobago'*

## *Chrysanthemum × morifolium*

### Chrysanthemum

Height 12 to 24 inches  
Indirect to moderate light

The chrysanthemum is one of the most popular florist plants. Flowers vary widely in form and color. Flower forms include single (daisy-like), spider (petals are long and tubular with hooked ends), decorative (large, double), pompon (globular), and others. Flower colors include yellow, orange, red, pink, purple, bronze, and white. These flowers are borne atop stems with dark green, lobed, 3- to 5-inch-long leaves.

**Culture:** These plants should be placed in high light and watered frequently. Flowers last longest when the temperature is between 60° and 70°F. Florist chrysanthemums are usually not hardy and not recommended for planting in the garden. Also shown on page 37.





## *Euphorbia pulcherrima*

### **Poinsettia**

Height 18 to 36 inches

Moderate to indirect light

Poinsettias are a traditional December favorite. The poinsettia “flowers” are actually modified leaves or bracts. The true flowers are tiny, yellow, button-like objects located in the center of the colorful bracts. Poinsettia bracts are available in red, white, pink, speckled, or marbled. Leaves are often dark green, lobed, 5 inches long, and exude white, milky sap when broken. Contrary to popular belief, no parts of the poinsettia are toxic to people or pets when ingested but the sap may cause skin irritation for some people.

**Culture:** Place poinsettias in a cool, bright room. Water plants when the soil surface becomes dry to the touch. Poinsettias should remain attractive for several weeks if given good care. Poinsettias are usually discarded after the holidays. However, it is possible to force a plant to bloom again the following year. For more information, see “Poinsettia Care” (RG 316) available from Iowa State University Extension offices and online at <https://store.extension.iastate.edu/>. Also shown on page 37.



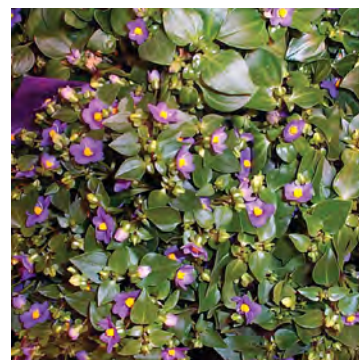
*Euphorbia pulcherrima* 'Jingle Bells'



*Euphorbia pulcherrima* 'Lemon Drop'



*Euphorbia pulcherrima* 'Dark Red Heg'



## *Exacum affine*

### **Persian Violet**

Height 6 to 8 inches

Indirect to direct light

Small, ½-inch, purple or white flowers have gold centers. Flowers are borne atop shiny, dark green leaves.

**Culture:** Place plants in bright, indirect light in a cool location. Keep soil evenly moist and protect plants from direct sun. This plant is a biennial and cannot be successfully grown year after year; it should be discarded after bloom. Plants are easily grown from seed. Sow seed by scattering on soil surface without covering in February. Plants will bloom in two years.



*Gardenia jasminoides*

## *Gardenia species*

### **Gardenia**

Height 12 to 24 inches

Direct light

Creamy white, strongly fragrant flowers are 3 inches across and semi-double to double. The leaves are glossy, dark green, and 4 inches long.

**Culture:** Gardenia is a difficult plant to grow. High light and strict environmental conditions are necessary to keep plants thriving indoors. Grow gardenia in humus soil, full sun, warm temperatures, medium humidity, and moist soil. Plants prefer temperatures of 55° to 65°F at night and 65° to 75°F during the day for growth and bloom. Inspect plants often for whiteflies.





*Gerbera jamesonii*

**Gerbera Daisy**

Height 10 to 36 inches  
Indirect to direct light

Large, 3- to 5-inch-diameter, daisy-like flowers are borne on long, slender stalks. Flower colors include red, pink, lavender, white, yellow, and orange. Foliage is medium to dark green, 6 to 12 inches long, and deeply lobed.

**Culture:** Plants prefer cool night temperatures and average day temperatures. Soil should be moist at all times. Some direct sun is necessary for good bloom. Plants should be discarded after blooming because they are difficult to grow indoors. Seeds can be sown in spring.



*Hydrangea macrophylla*

**Hydrangea**

Height 12 to 24 inches  
Moderate to indirect light

Large, 6- to 8-inch-wide, globular heads are composed of many small blue or pink flowers. Leaves are arranged along woody stems. They are medium green, glossy, 4 to 6 inches long and have saw toothed leaf margins.

**Culture:** Place hydrangea in bright, indirect sunlight, cool temperatures, and keep soil evenly moist. Do not let the soil dry out completely. Plants are not reliably hardy outdoors and seldom bloom when planted outside. As a result, plants are normally discarded after blooming.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Lilium longiflorum*

**Easter Lily**

Height 2½ to 4 feet  
Indirect to direct light

Trumpet-shaped, white flowers are fragrant and 6 to 8 inches long. They are complemented by narrow, 6-inch-long, dark green leaves.

**Culture:** Choose plants that have one or two partially open blooms to maximize the bloom period. Flowers last longest in cool temperatures. Carefully remove the yellow anthers because they easily stain clothing, hands, and flower petals. Place plants in bright light and keep soil moderately moist. After the flowers fade, plants can be discarded or transplanted in the garden. If planting outdoors, remove all faded flowers, place in a sunny window, and keep the soil moderately moist. As soon as the danger of frost has past, plant in a sunny location placing the bulb a few inches lower than it was in the pot. Blooms appear the following year in late June or early July.

**Caution:** This plant is potentially poisonous to people and/or pets.



*Pericallis × hybrida*

**Cineraria**

Height 6 to 8 inches  
Moderate to indirect light

Clusters of 1- to 3-inch-diameter, daisy-like flowers are available in white, blue, pink, purple, and red. The flower clusters are borne atop medium green, heart-shaped leaves that are about 8 inches wide.

**Culture:** Cinerarias should be purchased when the buds are just beginning to open. Place them in a sunny location and keep moist. To prolong their bloom time, cool temperatures (50° to 60°F) are essential. Cineraria is prone to aphids and should be checked periodically. Discard plants after flowering.







*Primula malacoides* 'Pink Ice'



*Primula obconica* 'Agate Rouge'

## Primula species

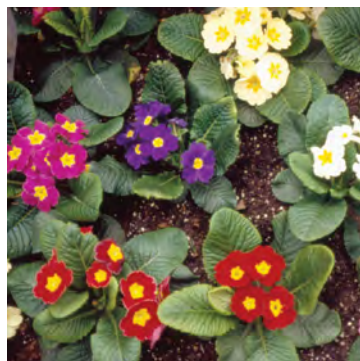
### Primrose

Height 4 to 8 inches

Indirect light

Showy, 1- to 1½-inch-diameter flowers in white, cream, yellow, orange, pink, red, purple, violet, and blue are produced above a rosette of leaves. Leaves are medium green, oblong, wrinkled, and 4 to 6 inches long.

**Culture:** Keep plants in indirect light with cool (55° to 60°F) temperatures. Primrose will not tolerate warm, drafty areas. The potting soil should always be slightly moist, but not wet. Primrose will bloom each year but plants are difficult to keep growing indoors and are not reliable perennials when planted outdoors.



*Primula obconica* 'Juno Red'



## Rhododendron species

### Azalea

Height 18 to 30 inches

Indirect light

Azaleas are popular florist plants available from mid-winter to early spring. Flowers are 1½ to 2 inches in diameter, single or double, and available in red, pink, white, and lavender. Plant stems are woody and have dark green, leathery leaves approximately 1½ inches long.

**Culture:** If watered frequently and kept at temperatures between 55° and 60°F, azaleas will bloom for several weeks. Regularly removing spent blooms will help prolong their bloom period. In May, prune the plant lightly to encourage branching and place plants outside in the garden. Repot plants, if necessary, in a mixture of half sphagnum peat moss and half potting



soil. Leave plants outdoors until the first hard frost, usually early November. This period of chilling is required for flowering. After plants are brought indoors, keep azaleas in moderate light, cool temperatures, and moist soil. Plants should bloom again in 6 to 8 weeks.




**Caution:** This plant is potentially poisonous to people and/or pets.






## Plant Species

## Light

Low  Moderate   
Indirect  Direct 

## Humidity








































































































## Water

Dry  Average   
Moist  

## Habit

## Propagation

### FOLIAGE PLANTS

<i>Acalypha wilkesiana</i> (Copperleaf)		High	 	Rounded	Stem/Tip Cutting
<i>Aglaonema</i> species (Chinese Evergreen)	  	Low, Medium	 	Upright	Air layer, Division, Stem/Tip Cutting
<i>Aphelandra squarrosa</i> (Zebra Plant)		Medium, High	 	Upright	Stem/Tip Cutting
<i>Araucaria heterophylla</i> (Norfolk Island Pine)		Medium, High	 	Upright	Stem/Tip Cutting
<i>Asparagus densiflorus</i> (Asparagus Fern)	 	Low, Medium	 	Rounded	Division
<i>Aspidistra elatior</i> (Cast Iron Plant)	 	Low, Medium	 	Rounded	Division
<i>Beaucarnea recurvata</i> (Ponytail Palm)		Low	 —  	Upright	Offset/Plantlet
<i>Begonia</i> species (Iron Cross Begonia, Rex Begonia)	 	Medium, High	 	Rounded	Leaf Cutting, Division
<i>Calathea</i> species (Peacock Plant)	 	High	 —   	Upright, Rounded	Division
<i>Chlorophytum comosum</i> (Spider Plant)	  	Medium	 	Rounded	Division, Offset/Plantlet
<i>Cissus rhombifolia</i> (Grape Ivy)	 	Medium	 	Trailing	Stem/Tip Cutting
<i>Codiaeum variegatum</i> (Croton)		Medium	 	Upright, Rounded	Air layer, Stem/Tip Cutting
<i>Cycas revoluta</i> (Sago Palm)		Medium	 —  	Upright	Seed
<i>Dieffenbachia</i> species (Dumbcane)	 	Medium	 	Upright	Air layer, Stem/Tip Cutting
<i>Dizygotheca elegantissima</i> (False Aralia)		Medium, High	 	Upright	Stem/Tip Cutting
<i>Dracaena</i> species (Striped Dracaena, Corn Plant, Dragon Tree)	 	Low, Medium	 	Upright	Air layer, Stem/Tip Cutting
<i>Epipremnum aureum</i> (Pothos, Devil's Ivy)	 	Low, Medium	 —  	Trailing	Stem/Tip Cutting
Ferns					
<i>Adiantum raddianum</i> (Maidenhair Fern)	 	High	 —   	Rounded	Division
<i>Asplenium nidus</i> (Bird's Nest Fern)		High	  	Rounded	Division
<i>Cyrtomium falcatum</i> (Holly Fern)	 	Medium, High	  	Rounded	Division
<i>Davallia fejeensis</i> (Rabbit's Foot Fern)		High	 —   	Rounded	Division
<i>Nephrolepis</i> species (Boston Fern, Sword Fern)	 	Medium, High	 —   	Rounded	Division
<i>Pteris</i> species (Spider Fern)	 	High	  	Rounded	Division
<i>Ficus</i> species (Weeping Fig, Rubber Tree, Fiddleleaf Fig)	 	Low, Medium	 	Upright	Air layer, Stem/Tip Cutting





## Plant Species

## Light

Low  Moderate   
Indirect  Direct 

## Humidity


















































































## Water

Dry  Average   
Moist   

## Habit

## Propagation

### FOLIAGE PLANTS (continued from previous page)

<i>Fittonia verschaffeltii</i> (Nerve Plant)		Medium, High	   	Rounded, Trailing	Stem/Tip Cutting, Division
<i>Hedera helix</i> (English Ivy)	 	Medium		Trailing	Stem/Tip Cutting
<i>Maranta leuconeura</i> (Prayer Plant)	 	High	   	Rounded	Division
<i>Monstera deliciosa</i> (Swiss Cheese Plant, Breadfruit)	 	Medium, High		Rounded, Trailing	Air layer, Stem/Tip Cutting
Palms	 	Low, Medium		Rounded	Division
<i>Caryota mitis</i> (Fishtail Palm)	 	Medium		Upright	Seed
<i>Chamaedorea elegans</i> (Parlor Palm)	 	Medium		Upright	Seed
<i>Howea forsteriana</i> (Sentry Palm)	 	Medium		Upright, Rounded	Seed
<i>Rhapis excelsa</i> (Lady Palm)	 	Medium		Upright	Seed
<i>Peperomia species</i> (Peperomia)	 	Low, Medium	 	Rounded	Leaf Cutting
<i>Philodendron bipennifolium</i> (Fiddleleaf Philodendron)	 	Low, Medium		Trailing	Stem/Tip Cutting
<i>Philodendron scandens oxycardium</i> (Heartleaf Philodendron)	 	Low, Medium		Trailing	Stem/Tip Cutting
<i>Philodendron selloum</i> (Lacy Tree Philodendron)	 	Medium		Rounded	Division
<i>Pilea species</i> (Aluminum Plant, Artillery Plant)	 	Medium, High	   	Rounded	Stem/Tip Cutting
<i>Plectranthus australis</i> (Swedish Ivy)		Low, Medium		Trailing	Stem/Tip Cutting
<i>Radermachera sinica</i> (China Doll)		Medium		Upright	Stem/Tip Cutting
<i>Rhoeo spathacea</i> (Moses-in-the-cradle)		Medium	   	Rounded	Offset/Plantlet
<i>Sansevieria trifasciata</i> (Snake Plant, Mother-in-law's Tongue)	   	Low, Medium	 	Upright	Division, Leaf Cutting
<i>Schefflera actinophylla</i> (Umbrella Tree)	 	Medium		Upright, Rounded	Stem/Tip Cutting, Air layer
<i>Schefflera arboricola</i> (Dwarf Schefflera)	 	Medium		Rounded	Stem/Tip Cutting, Air layer
<i>Senecio mikanioides</i> (German Ivy)		Low, Medium		Trailing	Stem/Tip Cutting
<i>Strobilanthes dyeranus</i> (Persian Shield)		Medium, High		Rounded	Stem/Tip Cutting
<i>Syngonium podophyllum</i> (Arrowhead Vine, Nephthytis)	 	Low, Medium		Rounded, Trailing	Stem/Tip Cutting
<i>Tradescantia species</i> , <i>Zebrina species</i> (Inch Plant)		Medium		Trailing	Stem/Tip Cutting




## Plant Species

## Light

Low  Moderate   
Indirect  Direct 

## Humidity

## Water






















































































Dry  Average   
Moist   

## Habit
















































## Propagation

### FLOWERING PLANTS

#### Annuals

( <i>Begonia</i> , <i>Coleus</i> , <i>Fuschia</i> , <i>Impatiens</i> , <i>Pelargonium</i> )	 	Medium	 	Upright, Rounded, Trailing	Division, Stem/Tip Cutting, Seed
<i>Anthurium</i> species (Flamingo Flower)		Medium, High	   	Rounded	Division
<i>Begonia coccinea</i> , <i>B. lucerna</i> (Angel Wing Begonia)		Medium	 	Rounded	Division, Stem/Tip Cutting, Seed
Bromeliads ( <i>Aechmea</i> , <i>Guzmania</i> , <i>Neoregelia</i> , <i>Tillandsia</i> , <i>Vriesea</i> )		Medium, High	 	UprightOffset/Plantlet	Division
<i>Citrus</i> species (Citrus)		Medium, High	 	Upright, Rounded	Stem/Tip Cutting, Seed
<i>Clivia miniata</i> (Kaffir Lily)	 	Medium, High	  	Upright	Division
<i>Columnnea</i> species (Goldfish Plant)		High	 	Trailing	Stem/Tip Cutting
<i>Cyclamen persicum</i> (Cyclamen)		Medium	  	Rounded	Seed
<i>Episcia</i> species (Flame Violet)		High	   	Trailing	Stem/Tip Cutting
<i>Euphorbia milii</i> (Crown of Thorns)	 	Low, Medium	  	Upright	Division
<i>Hibiscus</i> species (Hibiscus)		Medium, High	   	Rounded	Stem/Tip Cutting
<i>Hippeastrum</i> species (Amaryllis)	 	Medium	 	Upright	Seed, Offset
<i>Hoya carnosa</i> (Wax Vine)		Medium	 	Trailing	Stem/Tip Cutting
Orchids ( <i>Cattleya</i> , <i>Phalaenopsis</i> )		High	 	Upright	Division, Offset/Plantlet
<i>Pachystachys lutea</i> (Golden Shrimp Plant)		Medium	 	Upright, Rounded	Stem/Tip Cutting
<i>Rosa</i> species (Miniature Rose)		Medium	 	Rounded	Stem/Tip Cutting
<i>Saintpaulia</i> species (African Violet)		Medium, High	 	Rounded	Leaf Cutting
<i>Schlumbergera</i> species (Holiday Cactus)		Medium	 	Rounded	Leaf Cutting, Division
<i>Sinningia speciosa</i> (Gloxinia)		Medium	 	Rounded	Leaf Cutting
<i>Spathiphyllum</i> species (Peace Lily)	  	Low, Medium	 	Rounded	Division
<i>Strelitzia reginae</i> (Bird of Paradise)		Medium	 	Upright	Division
<i>Streptocarpus</i> species (Cape Primrose, False African Violet)		Medium	 	Rounded	Leaf Cutting, Stem/Tip Cutting
<i>Zantedeschia</i> species (Calla)		Medium	  	Upright	Stem/Tip Cutting



Plant Species	Light	Humidity	Water	Habit	Propagation
	Low  Moderate  Indirect  Direct 		Dry  Average  Moist  		
<b>SUCCULENTS</b>					
<i>Agave americana</i> (Century Plant)		Low		Upright	Offset/Plantlet
<i>Aloe</i> species (Aloe)		Low	 	Upright	Division, Offset
<i>Bryophyllum daigremontianum</i> (Mother of Thousands)		Low, Medium	 	Upright	Offset/Plantlet
<i>Cephalocereus senilis</i> (Old Man Cactus)		Low		Upright	Stem/Tip Cutting
<i>Crassula argentea</i> (Jade Plant)		Low	 	Upright, Rounded	Leaf Cutting, Stem/Tip Cutting
<i>Echinocactus grusonii</i> (Barrel Cactus)		Low		Rounded	Stem/Tip Cutting
<i>Euphorbia lactea</i> (Candelabra Plant)		Low		Upright	Stem/Tip Cutting
<i>Euphorbia tirucalli</i> (Pencil Cactus)		Low, Medium		Upright, Rounded	Stem/Tip Cutting
<i>Gymnocalycium mihanovichii friedrichii</i> (Grafted Cactus)		Low, Medium		Upright, Rounded	Stem/Tip Cutting
<i>Haworthia</i> species (Haworthia)		Low		Upright, Rounded	Division, Offset
<i>Kalanchoe blossfeldiana</i> (Kalanchoe)		Medium	 	Upright	Stem/Tip Cutting
<i>Lithops</i> species (Living Stones)		Low	 	Rounded	Offset/Plantlet
<i>Mammillaria</i> species (Nipple Cactus)		Low		Rounded	Offset/Plantlet
<i>Notocactus leninghausii</i> (Golden Ball Cactus)		Low		Upright, Rounded	Seed, Offset/Plantlet
<i>Opuntia</i> species (Bunny Ears, Prickly Pear)		Low		Upright	Stem/Tip Cutting
<i>Sedum</i> species (Sedum)		Low		Rounded, Trailing	Stem/Tip Cutting, Division
<i>Sempervivum</i> species (Hen and Chicks)		Low		Rounded	Offset/Plantlet



#### AIR LAYERING A HOUSEPLANT

**a)** Air layering is a way to propagate and rejuvenate overgrown, leggy

houseplants, such as *Dieffenbachia*.

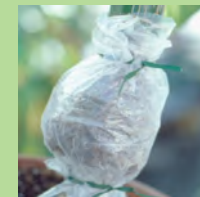


**b)** Carefully slice  $\frac{1}{2}$  to  $\frac{2}{3}$  of the way into a major branch or trunk. Insert a toothpick to separate sections and dust

cut surfaces with rooting hormone.



**c)** Pack moist sphagnum peat moss around area.



**d)** Wrap with plastic wrap and tie ends. When roots are 1 inch or longer, remove the upper portion of the plant and

plant in a clean container. *Reference: How to Air Layer a Houseplant (PM268)*



## Plant Species

**Light**  
 Low Moderate   
 Indirect Direct

## Humidity

**Water**  
 Dry Average   
 Moist

## Habit

## Propagation

### FLORIST'S PLANTS

<i>Begonia</i> species (Rieger Begonia, Tuberous Begonia)		Medium		Rounded	Leaf Cutting, Division
Bulbs ( <i>Tulipa</i> , <i>Narcissus</i> , <i>Crocus</i> , <i>Hyacinthus</i> )		Medium		Upright	Division, Offset
<i>Chrysanthemum</i> × <i>morifolium</i> (Chrysanthemum)		Medium		Rounded	Stem/Tip Cutting
<i>Euphorbia pulcherrima</i> (Poinsettia)		Medium		Rounded	Stem/Tip Cutting
<i>Exacum affine</i> (Persian Violet)		Medium		Rounded	Seed
<i>Gardenia</i> species (Gardenia)		Medium		Rounded	Stem/Tip Cutting
<i>Gerbera jamesonii</i> (Gerbera Daisy)		Medium	—	Rounded	Seed
<i>Hydrangea macrophylla</i> (Hydrangea)		Medium	—	Rounded	Stem/Tip Cutting
<i>Lilium longiflorum</i> (Easter Lily)		Medium		Upright	Division, Offset
<i>Pericallis</i> × <i>hybrida</i> (Cineraria)		Medium		Rounded	Seed
<i>Primula</i> species (Primrose)		Medium	—	Rounded	Seed
<i>Rhododendron</i> species (Azalea)		Medium		Rounded	Stem/Tip Cutting

### PLANT SOCIETIES

African Violet Society of America

E-mail: [avsa@earthlink.net](mailto:avsa@earthlink.net)

[www.avsa.org](http://www.avsa.org)

American Begonia Society

[www.begonias.org](http://www.begonias.org)

American Gloxinia and

Gesneriad Society

<http://aggs.org>

American Orchid Society

E-mail: [TheAOS@aos.org](mailto:TheAOS@aos.org)

[www.orchidweb.org](http://www.orchidweb.org)

Bromeliad Society International

<http://bsi.org>

Cactus & Succulent

Society of America

E-mail: [cssa@wizard.com](mailto:cssa@wizard.com)

[www.cssainc.org](http://www.cssainc.org)

International Geranium Society

[geraniumsociety@yahoo.com](mailto:geraniumsociety@yahoo.com)

[www.geocities.com/RainForest/2822/](http://www.geocities.com/RainForest/2822/)

[index.html](http://index.html)

International Hoya Association

E-mail: [rbgdns@aol.com](mailto:rbgdns@aol.com)

[www.international-hoya.org](http://www.international-hoya.org)

International Palm Society

E-mail: [palms@allenpress.com](mailto:palms@allenpress.com)

[www.palms.org](http://www.palms.org)

The Sedum Society

E-mail: [sue\\_haffner@csufresno.edu](mailto:sue_haffner@csufresno.edu)

[www.cactus-mall.com/sedum/](http://www.cactus-mall.com/sedum/)



*Hoya carnosa*



## PLANT CARE — INSECT PROBLEMS

Prevention is the first line of defense against insect problems. Check houseplants before you buy, then isolate them from others for two or three weeks to allow undetected problems to become obvious. Check plants very carefully each fall, regardless of whether they were outdoors for the summer. Some insects and mites may have made their way indoors through window or door screens.

Choose plants that will thrive in the conditions you can provide. A houseplant that is stressed is more susceptible to insect problems than one that has proper light, humidity, temperature, fertilizer, water, and soil conditions.

Wash smooth-leaved houseplants regularly to prevent a build-up of dust and grime. Dust filters light before it reaches the leaf surface and also can attract and harbor insects and spider mites. Clean large leaves and stems with a moist, soft cloth. If plants have many tiny leaves, spray them with barely lukewarm water or wrap foil over the soil, then tip each plant upside down and swish it through a tub of water to which a few drops of mild liquid dishwashing detergent has been added.

Never use a feather duster to clean houseplants. It may transfer tiny insects or eggs from one plant to another.

Always use pasteurized potting soil; unpasteurized garden soil may harbor

insect and disease pests. Potting soil must also drain readily. When roots sit in waterlogged soil, they're likely to rot and serve as a food source for soil scavengers that live off decaying organic matter.

Check houseplants every time they are watered for evidence of insects. Inspect both tops and undersides of leaves, particularly any that appear speckled or mottled. This may be evidence of a pest problem, though there are other causes of discoloration. A ten-power hand magnifying lens is helpful when looking for tiny pests.

Look for honeydew, a shiny, sticky substance secreted by aphids and scale insects, on the upper surface of leaves, as well as on tabletops and other items under the plant.

## NONCHEMICAL CONTROL

Many houseplant insect problems can be controlled using nonchemical methods, particularly if the infestation is light.

**Washing**—Use a soft cotton cloth dipped in mild detergent solution (1 to 2 teaspoons per quart of lukewarm water) to wipe small numbers of aphids, mealybugs, scales, or mites off plants with smooth leaves. A light pest infestation also can be dislodged with a forceful spray of lukewarm water.

Use a cotton ball or swab soaked in rubbing alcohol to kill pests on contact as well as remove them. Don't wipe alcohol on African violets or other plants with hairy leaves.



Mealy bugs

**Handpicking**—Cutworms, caterpillars, millipedes, and other large pests that might infest houseplants placed outdoors during the summer can be picked off and discarded. Earthworms can be driven out of the soil by setting the pot in a tub of water to saturate it. A fingernail file or pen knife can be used to remove small numbers of scale insects or mealybugs.

**Pruning**—An insect infestation may be confined to a few leaves or branches. Eliminating the worst branches will make it easier to control pests on remaining parts of the plant. When an infestation is truly isolated, pruning may be all the control that's necessary.

**Give up**—When a houseplant is heavily infested and badly damaged, the best course of action may be to discard the plant before it infects other plants. If that's too drastic, prune it close to the soil level. If it resprouts, watch new growth carefully for signs of infestation.

## FOR MORE INFORMATION

Contact your local Iowa State University Extension office for additional information or copies of the following publications.

African Violets (RG 322)

Annuals (PM 1942)

Forcing Flowering Bulbs (PM 1319)

Growing and Overwintering Garden Geraniums (RG 320)

Growing Holiday Cacti (RG 308)

Home Propagation Techniques (NCR 274)

How to Air Layer a Houseplant (PM 268)

Lighting & Houseplants (RG 402)

Miniature Roses (RG 321)

Poinsettia Care (RG 316)

Additional information also is available from these Web sites:

ISU Distribution Center (online store)—  
<https://store.extension.iastate.edu/>

ISU Extension publications—  
<https://store.extension.iastate.edu/>

ISU Horticulture—  
[www.yardandgarden.extension.iastate.edu](http://www.yardandgarden.extension.iastate.edu)

Questions also may be directed to ISU Extension Hortline by calling (515) 294-3108 during business hours (10–12, 1–4:30, M–F).

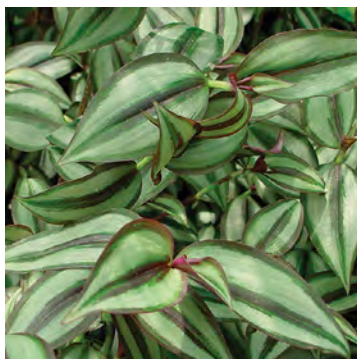
If you want to learn more about horticulture through training and volunteer work, ask your ISU Extension office for information about the ISU Extension Master Gardener Program.

**PLANTS THAT ARE BEST  
SUITED FOR TABLE TOPS**

*Begonia* species (Begonia)  
 Bromeliads (*Aechmea*, *Guzmania*,  
*Neoregelia*, *Tillandsia*, *Vriesea*)  
*Crocus vernus* (Crocus)  
*Cyclamen persicum* (Cyclamen)  
*Exacum affine* (Persian Violet)  
 Ferns (Maidenhair Fern, Bird's Nest Fern, Holly  
 Fern, Rabbit's Foot Fern, Boston or Sword  
 Fern, Spider Fern)  
*Fittonia* species (Nerve Plant, Net Plant)  
*Gerbera jamesonii* (Gerbera Daisy)  
*Gymnocalycium mihanovichii friedrichii*  
 (Grafted Cactus)  
*Haworthia* species (Haworthia)  
*Hyacinthus orientalis* (Hyacinth)  
*Kalanchoe blossfeldiana* (Kalanchoe)  
*Lithops* species (Living Stones)  
*Maranta leuconeura* (Prayer Plant)  
*Narcissus* species (Daffodil)  
 Orchids (Corsage and Moth)  
*Peperomia* species (Peperomia)  
*Pericallis × hybrida* (Cineraria)  
*Pilea* species (Aluminum Plant,  
 Artillery Plant)  
*Primula* species (Primrose)  
*Rhoeo spathacea* (Moses-in-the-cradle)  
*Saintpaulia* species (African Violet)  
*Sansevieria trifasciata*  
 (Low-growing types)  
*Sempervivum* species (Hens and Chicks)  
*Sinningia speciosa* (Gloxinia)  
*Tulipa* species (Tulip)  
*Streptocarpus hybrida* (Cape Primrose)

**PLANTS THAT ARE  
GOOD FOR HANGING**

*Asparagus densiflorus* (Asparagus Fern)  
*Chlorophytum comosum* (Spider Plant)  
*Cissus rhombifolia* (Grape Ivy)  
*Columnea* species (Goldfish Plant)  
*Epipremnum aureum* (Pothos, Devil's Ivy)  
*Episcia* species (Flame Violet)  
 Ferns (Maidenhair Fern, Bird's Nest Fern, Holly  
 Fern, Rabbit's Foot Fern, Boston or Sword  
 Fern, Spider Fern)  
*Hedera helix* (English Ivy)  
*Hoya carnosa* (Wax Vine)  
*Philodendron bipennifolium* (Fiddleleaf  
 Philodendron)  
*Philodendron scandens oxycardium*  
 (Heartleaf Philodendron)  
*Pilea* species (Aluminum Plant,  
 Artillery Plant)  
*Plectranthus australis* (Swedish Ivy)  
*Sedum* species (Sedum)  
*Streptocarpus saxorum* (False African  
 Violet)  
*Syngonium podophyllum* (Arrowhead Vine,  
 Nephthytis)  
*Tradescantia* species (Inch Plant)  
*Zebrina* species (Inch Plant)



*Zebrina* species



*Ficus elastica* 'Variegata'

**PLANTS THAT ARE BEST  
SUITED FOR LARGE SPACES**

*Agave americana* (Century Plant)  
*Araucaria heterophylla* (Norfolk Island Pine)  
*Beaucarnea recurvata* (Ponytail Palm)  
*Citrus* species (Citrus)  
*Codiaeum variegatum* (Croton)  
*Dieffenbachia* species (Dumbcane)  
*Dizygotheca elegantissima* (False Aralia)  
*Dracaena* species (Dracaena)  
*Euphorbia lactea* (Candelabra Plant)  
*Ficus benjamina* (Weeping Fig)  
*Ficus elastica* (Rubber Tree)  
*Ficus lyrata* (Fiddleleaf Fig)  
 Palms (Fishtail Palm, Sentry Palm,  
 Lady Palm)  
*Philodendron selloum*  
 (Lacy Tree Philodendron)  
*Schefflera actinophylla* (Umbrella Tree)  
*Strelitzia reginae* (Bird of Paradise)

**PLANTS THAT ARE  
GOOD FOR TERRARIUMS**

*Begonia* species (Begonia)  
 Bromeliads (*Aechmea*, *Guzmania*,  
*Neoregelia*, *Tillandsia*, *Vriesea*)  
*Calathea* species (Peacock Plant)  
*Columnea* species (Goldfish Plant)  
*Episcia* species (Flame Violet)  
 Ferns (Maidenhair Fern, Bird's Nest Fern, Holly  
 Fern, Rabbit's Foot Fern, Boston or Sword  
 Fern, Spider Fern)  
*Fittonia* species (Nerve Plant, Net Plant)  
*Maranta leuconeura* (Prayer Plant)  
*Peperomia* species (Peperomia)  
*Pilea* species (Artillery Plant,  
 Aluminum Plant)  
*Saintpaulia* species (African Violet)



## PLANTS THAT ARE POTENTIALLY POISONOUS TO PEOPLE AND/OR PETS

*Acalpha wilkesiana* (Copperleaf)  
*Aglaonema* species (Chinese Evergreen)  
*Aloe* species (Aloe)  
*Anthurium* species (Flamingo Flower)  
*Codiaeum variegatum* (Croton)  
*Crocus vernus* (Crocus)  
*Cyclamen persicum* (Cyclamen)  
*Dieffenbachia* species (Dumbcane)  
*Epipremnum aureum* (Pothos, Devil's Ivy)  
*Euphorbia lactea* (Candelabra Plant)  
*Euphorbia milii* (Crown of Thorns)  
*Euphorbia tirucalli* (Pencil Cactus)  
*Hedera helix* (English Ivy)  
*Hippeastrum* species (Amaryllis)  
*Hyacinthus orientalis* (Hyacinth)  
*Hydrangea macrophylla* (Hydrangea)  
*Kalanchoe blossfeldiana* (Kalanchoe)  
*Lilium longiflorum* (Easter Lily)  
*Monstera deliciosa* (Swiss Cheese Plant)  
*Narcissus* species (Daffodil)  
*Philodendron* species (Philodendron)  
*Rhododendron* species (Azalea)  
*Schefflera* species (Umbrella Tree, Dwarf Schefflera)  
*Spathiphyllum* species (Peace Lily)  
*Syngonium podophyllum* (Arrowhead Vine, Nephthytis)  
*Tulipa* species (Tulip)  
*Zantedeschia* species (Calla)

## PLANTS THAT ARE EASY TO PROPAGATE

*Aglaonema* species (Chinese Evergreen)  
*Chlorophytum comosum* (Spider Plant)  
*Cissus* species (Grape Ivy)  
*Crassula argentea* (Jade Plant)  
*Dieffenbachia* species (Dumbcane)  
*Dracaena* species (Dracaena)  
*Epipremnum aureum* (Pothos, Devil's Ivy)  
*Ficus benjamina* (Weeping Fig)  
*Hedera helix* (English Ivy)  
*Philodendron scandens oxycardium* (Heartleaf Philodendron)  
*Plectranthus australis* (Swedish Ivy)  
*Saintpaulia* species (African Violet)  
*Sansevieria trifasciata* (Snake Plant, Mother-in-law's Tongue)  
*Schlumbergera* species (Holiday Cactus)  
*Sempervivum* species (Hens and Chicks)  
*Tradescantia* species (Inch Plant)  
*Zebrina* species (Inch Plant)

## PLANTS THAT REQUIRE A REST PERIOD OR DORMANCY

Bulbs (*Tulipa*, *Narcissus*, *Crocus*, *Hyacinthus*)  
*Clivia miniata* (Kaffir Lily)  
*Cyclamen persicum* (Cyclamen)  
*Hippeastrum* species (Amaryllis)  
*Hydrangea macrophylla* (Hydrangea)  
*Lilium longiflorum* (Easter Lily)  
*Primula* species (Primrose)  
*Rhododendron* species (Azalea)  
*Sinningia speciosa* (Gloxinia)  
*Zantedeschia* species (Calla)



## PLANTS THAT ARE GOOD FOR BEGINNERS

*Aglaonema* species (Chinese Evergreen)  
*Aspidistra elatior* (Cast Iron Plant)  
*Beaucarnea recurvata* (Ponytail Palm)  
*Cissus rhombifolia* (Grape Ivy)  
*Chlorophytum comosum* (Spider Plant)  
*Crassula argentea* (Jade Plant)  
*Dieffenbachia* species (Dumbcane)  
*Dracaena* species (Dracaena)  
*Epipremnum aureum* (Pothos, Devil's Ivy)  
*Euphorbia milii* (Crown of Thorns)  
*Peperomia obtusifolia* (Peperomia)  
*Philodendron scandens oxycardium* (Heartleaf Philodendron)  
*Sansevieria trifasciata* (Snake Plant, Mother-in-law's Tongue)  
*Schefflera* species (Umbrella Tree, Dwarf Schefflera)  
*Spathiphyllum* species (Peace Lily)  
*Syngonium podophyllum* (Arrowhead Vine, Nephthytis)  
*Tradescantia* species (Inch Plant)  
*Zebrina* species (Inch Plant)

## HOW TO SELECT INDOOR PLANTS

Use the following guidelines to choose a houseplant that will be a healthy, attractive, long-lived addition to the home or office.

**1. Healthy growth**—The leaves should be green, turgid, and closely spaced along strong healthy stems. Avoid plants that have brown or yellow spots, wilted leaves, or leggy growth.

**2. No disease**—Purchase plants with no signs of disease, such as stem rot or powdery mildew. Avoid any plant with dark brown, yellow, or black spots on the leaves or stems.

**3. No insects**—Inspect the plant carefully for insects or signs of insect damage. Avoid plants with sticky honeydew, cottony masses, or small, fine webbing on the leaves or stems. Check in leaf axils and the undersides of leaves for insects like aphids, whiteflies, mealybug, and scale.

**4. Store conditions**—Buy plants that have been well maintained in the store. Avoid purchasing plants located in dark areas or near drafty doors.

**5. Soil conditions**—Check for excessively dry or wet soil. Avoid plants that are dry with the soil pulled away from the side of the pot. Also avoid plants with scum or algae on the soil surface.

**6. Buds not flowers**—Purchase flowering plants with abundant, healthy buds that are near opening. Avoid plants in full bloom; they cannot be enjoyed as long.

## Index of Plants

**boldface** indicates a common name.

*Italics* indicates a botanical name.

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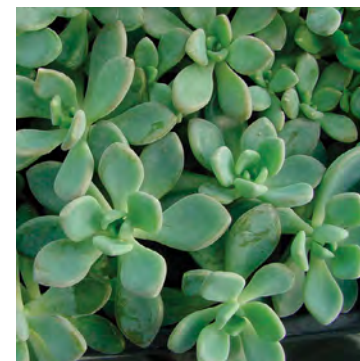
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Front cover photos clockwise from top left:  
*Phalaenopsis* species, *Crassula argentea*, *Rhoeo spathacea*, bromeliad (*Neoregelia*)

Back cover photos clockwise from top left:  
*Anthurium* species, *Hedera helix*, *Begonia* × *hiemalis*, *Sedum morganianum*



