

Houseplant Care and Maintenance

By The Gardening Guru

There is no such thing as a "house plant." Plants grown in interior spaces actually come from tropical or arid regions and must adapt to less than ideal conditions in the home or office. The gardener's challenge is to know the plant's environmental needs and meet them. The interaction of environmental factors and maintenance practices contribute to the health or decline of the plant.

Plant Selection

In the plant selection process, begin by considering the location's environment. Determine whether a particular plant will only survive, or thrive in that environment. Check library references for the specific care of plants being considered for the indoor environment.

It is important to begin with good quality, healthy, pest-free plants. Check that leaves possess good color for the species, with no brown tips or margins. Look for insects, mites and signs of disease.

Plant Environment

Light

Light is an important component for plant growth since it is the energy source for photosynthesis. Light often determines whether the plant will actively grow or simply survive.

Characteristics of light to consider include intensity, quality and duration. Intensity refers to the amount of light present and will vary by season, shade cast by objects outdoors, cloudiness, or by window treatments used. Intensity decreases greatly from outdoor to indoor spaces and can vary greatly within a single room. A southern exposure indoors typically provides the greatest light intensity, then western, eastern, and northern.

Plants with variegated foliage have less chlorophyll and therefore require more light to achieve the same photosynthesis as a plant with green foliage. If light is insufficient, variegation may be lost. Flowering plants also require higher light intensity.

As winter approaches, light intensity and duration will diminish. A plant that grew well in an eastern exposure in the summer may require a southern exposure in the winter. Move plants to other locations seasonally if needed.

Symptoms of insufficient light intensity include: weak growth; long, spindly stems; poor color in older leaves; and leaf loss or failure to flower.

Quality of light refers to the spectrum or colors available; sunlight contains all colors. Plants utilize all colors in photosynthesis. An incandescent light bulb emits limited colors and is not acceptable as an indoor lighting source for plants. To grow plants under artificial fluorescent light, most indoor gardeners combine a cool and warm tube in a fixture to provide light of good quality for many interior plants. "Grow lights" emit the required light; these fluorescent tubes are more costly than others but last longer.

Duration refers to the length of light exposure. A daily exposure to light, preferably 8 to 16 hours, is needed for plant processes. Symptoms of insufficient duration are similar to those of low light intensity; small leaves, spindly stems and older leaf drop.

Temperature

The ideal temperature range for most interior foliage plants is between 60°F and 80°F, similar to that found in the understory of a tropical forest. Chilling injury occurs below 50°F for some tropicals.

Air temperature is quite variable within a home or office and can change daily or seasonally. Exposure may affect temperature; typically, southern and western exposures are warm because of sunlight, while eastern and northern are moderate or cool. Avoid locating plants on cold window sills, or where there are cold or hot drafts from opening doors and heating or air conditioning vents.

Symptoms of cold damage to plants include: leaf spots or blotches; downward curled foliage; slowed growth; and root rots. Excessively high temperatures cause yellowish green foliage which may have brown, dry edges or tips and spindly growth. Insect, mite and disease problems may develop quickly under warm conditions as well.

Humidity

Tropical foliage plants thrive in their native environments where relative humidity is often 80% or greater. An average home may have relative humidities as low as 35%

up to about 60%; this may drop below 20% in heated homes during winter. Low humidity may cause brown or scorched leaf tips.

Attempt to raise the humidity indoors by grouping plants together; using a room or furnace humidifier; watering properly and avoiding drafts and high temperatures. A pebble tray may also work; layer pebbles in a tray and fill with water to just the top of the pebbles. Set pots on the pebbles, just above water level. Double potting may work, too; sink pots in a larger container, then fill in between pots with moistened sphagnum moss. Misting foliage has not proven useful in raising humidity as water droplets evaporate rapidly.

Root Environment

Root health is vital. The plant's container and the growing mix affect the root system and therefore, overall health. Roots serve to anchor the plant in the container and to absorb water and nutrients. A plant's root system must have oxygen in order to function properly.

Soil Mix A proper soil mix is critical for good root health. A desirable mix will not break down or degrade over time, and include a mix of particle sizes to provide space for good drainage and aeration. If the soil is compacted or saturated with water, oxygen in the soil is reduced and roots suffer.

Most plants thrive in a mix containing: one to two parts potting soil, one to two parts moistened sphagnum peat moss and one part coarse sand or perlite. Vermiculite can be used in place of perlite; however, it tends to compress over time whereas perlite is physically stable.

Native soil from the garden can be used in a mix if it is first "pasteurized." Soil should be moistened 24 hours prior to heating. Place soil on a baking sheet, two inches deep, and heat in an oven at 180°F for 30 minutes. Generally, native soil is high in clay content and does not make the best mix.

Pot/Container Selection

To ensure success, pots must have drainage holes in the bottom whether they are clay, plastic, or ceramic. New clay pots are a good choice because they are porous, allowing air movement through the sides of the pot. This allows the soil to dry and provides oxygen to the root system. Plastic and glazed ceramic pots are nonporous and do not allow air movement through the sides; the soil holds moisture longer and

therefore does not need to be watered as often as soil in clay pots. Soil can be kept from falling through the drainage holes by placing a piece of coffee filter paper or broken pottery over the hole. Do not put a layer of gravel in the bottom of pots that have drainage holes.

Pots without drainage holes should have a layer of gravel or broken clay shards in the bottom for excess water drainage; be very careful not to saturate soil in such containers.

Used pots can be reused if cleaned thoroughly or heat sterilized. Scrub with a 10% solution of chlorine bleach and water, using a stiff brush, or wash pots in the dishwasher.

Maintenance Practices

Watering

Overwatering a potted plant is perhaps the leading cause of death. Roots that are surrounded by water and have little oxygen available soon rot, eventually killing the plant. Unfortunately, the symptoms of overwatering and under watering are similar. Both lead to chronically poor root health, decline and eventually death.

It is impossible to impose a strict watering schedule because a plant's needs change. Need can change depending on a number of factors: the plant species; the type and size of pot; soil mix characteristics; variable weather conditions; and how fast the plant is growing. For example, the same plant that uses abundant water when the weather is hot, dry and sunny, will use less water when conditions are cloudy and damp.

Plants may slow in growth after a period of heavy bloom, after a flush of new growth, or during a prolonged period of dark or cloudy weather. Be especially careful not to overwater such plants.

The best way to determine when a plant needs water is to feel the soil mix with your finger tip. If cool and barely moist to the touch, the plant is considered moderately moist. If the soil mix is slightly moist, or questionable, it is best to wait another day or two and retest before watering. Cacti and succulents can tolerate greater dryness; let the soil become crumbly dry for several days before watering. Another method to determine when to water is to use the weight of the container. A dry container and soil mix will be lightweight compared to one that has just been watered.

Most plants do well when the soil mix is "moderately moist." After watering thoroughly, allow the soil mix to dry to a slightly moist condition before watering again. Completely saturate the soil mix with water to fill all the pore spaces. Pour enough water into the pot that it drains out through the drainage hole. This method is also beneficial in leaching out excess fertilizer salts in the soil, which build up over time. It also exchanges the air in the soil mix. Do not allow drainage water to seep back into the soil mix; empty the saucer of excess water as soon as the container drains completely.

Do not allow the soil mix to dry excessively. If the salt level is high in the container, root damage can occur. If a plant's soil mix is excessively dry and hard to rewet, try double watering. Water once and then again half an hour later; or place the pot in a sink or bucket filled with water. Remove it from the sink or bucket when the soil surface is moist. Allow the pot to drain after using one of these methods.

Plants should not be watered with hot or cold water. A water temperature between 62°F and 72°F is good. Do not water plants with softened water which adds sodium and chloride to the soil mix and could cause plant damage.

Fertilizer Use

Fertilizer is used only by healthy, well-watered and actively growing plants. Fertilizer is not a cure-all and should not be applied to ailing plants or those in low light conditions.

Complete, water-soluble fertilizers are a good choice. Choose a balanced fertilizer for foliage plants, such as a 10-10-10, and one that is higher in phosphorus for flowering plants, such as a 5-10-5. These numbers represent the percentage of nitrogen, phosphorus and potassium in the fertilizer.

Using a "continuous feed" method is preferred over the "once a month" method. Dilute fertilizer to about one tenth the recommended label rate and use this solution to water plants at every watering. Once a month, flush pots with clear water to wash out excess salts.

House plant fertilizer stakes are a continuous feed method as some fertilizer dissolves with each watering over a period of three to twelve months. However, use these with caution since it is not easy to correct a salts problem should it occur. If the plant goes into a dormant phase or if dark and cloudy weather occurs, these fertilizers can't be leached quickly from the soil mix.

Pots that have a white discoloration near the top or bottom or a crust of salts at the soil line may indicate that the plant is being over fertilized and/or possibly overwatered. If salts are high and the soil excessively dry, root damage or death is possible.

Pinching

Pinching refers to removing the growing tip of a stem to stimulate new growth from buds lower on the stem. Vining and bushy plants, such as grape ivy, peperomia and croton, are commonly pinched; do not pinch non-branching plants such as African violet.

Typically, the growing stem tip is removed, just above a node. Pinch with your thumb and forefinger, or use a sharp scissors to make the cut.

Mature plants can be pinched to produce dense, bushy growth, especially on fast growing, soft-stemmed plants with long, lanky stems. Once side shoots form, they can be pinched to promote even more new growth.

Repotting

Repotting should be done only as needed, during spring or summer when the plant is actively growing. Do not repot ailing or dormant plants, or those with flower buds or open flowers.

A plant needs repotting if roots are growing out of the drainage hole or "surfacing" in the pot, if the plant wilts shortly after watering, or if it requires frequent watering. As roots grow they compact the soil, decreasing the pore space which holds water and air for the root system.

Choose a pot one or two inches larger in diameter. With each inch diameter increase in pot size, the volume of soil nearly doubles. For example, a four inch diameter pot holds two and a half cups of soil; a five inch pot holds four and a half cups. If a plant is repotted into too large a pot, the root system is surrounded by a large volume of soil which can become excessively moist and be slow to dry out, which can lead to root rot.

Make sure the plant to be repotted is slightly moist. Remove it from its pot and gently disturb the root system with your fingers so that roots are headed outward from the root ball. If the roots are very tight and compact in the pot, score the

rootball with a knife to loosen them. Place some soil mix in the new pot and position the plant so it will be at the same depth; fill in around the sides of the ball with new soil mix. Water well so excess water drains out of the container.

For plants in large containers that are impossible to repot, carefully remove the top two or three inches of soil and replace with fresh soil every two years. This process is known as topdressing.

Cleaning

Though there are many cleaning and leaf shine products on the market, the best way to clean leaves on foliage plants is to carefully wipe each leaf with a mild solution of liquid soap in room temperature water. Plants with hairy foliage should be dusted rather than washed.

Summering Plants Outdoors

Summering plants outdoors exposes them to conditions of light, temperature and humidity that are beneficial for lush growth. Only those plants requiring "high light" should be summered outside. Plants can be moved outdoors after all danger of frost is past, which is about May 15 for the central Ohio area. Do not move plants immediately into direct sunlight for they will sunburn and be severely damaged. Rather, gradually expose them to sunlight by placing them under a tree in heavy shade for a few days and then gradually exposing them to more sunlight. Remember that plants outside will grow rapidly, and require frequent fertilization and watering if rainfall is not adequate.

Consider moving plants indoors as night temperatures approach 50°F in late summer. Gradually reduce light levels by moving plants from sun, to light shade, to heavy shade over a period of a week, and then inside. Once inside, leaf yellowing and drop may occur as the plant re-adjusts to lower light conditions.

Plants should be carefully inspected for insect or mite pests before bringing them indoors. Control any pests found as indoor conditions may allow populations to increase rapidly.

Many gardeners choose not to summer plants outdoors because of the potential pest problems and the stress plants usually undergo once moved back indoors.

Winter Care

From approximately October to April, most plants are in a non-growing state unless they are exposed to artificial light. Because they are not actively growing due to environmental changes (shorter days, lower light and cooler temperatures) care practices must be adjusted. Reduce watering, unless the home is very warm and humidity low; do not fertilize or repot; and increase light levels and humidity, if possible.

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