

Care of Houseplants

Gerald Klingaman
Extension Horticulture
Specialist - Ornamentals

Janet Carson
Extension Horticulture
Specialist

Houseplants are enjoyed by people the world over. Some prefer the grotesque beauty of cacti and succulents, while others favor the graceful beauty of ferns. Whatever your taste, there is a houseplant that will fit your particular interest and growing conditions. By selecting the right plant for the conditions at hand, the likelihood of success is almost assured.

The following sections give general guidelines for growing houseplants, but only experience will indicate which practices need to be modified. Remember, houseplants are perishable products that go through natural cycles of growth and decline. Because plants are perishable, there is nothing wrong with discarding them when they get ugly or become a burden. Overgrown plants can be cut back or large plants can be propagated to keep the size more manageable.

Kinds of Houseplants

Hundreds of houseplants are available, so the following table (page 2) only lists a few of the most common types and those easiest to grow. Don't be afraid to try new kinds of plants even if you think you may fail. You may surprise yourself.

Concerns About Poisonous Plants

Young parents are often very concerned about toddlers eating things that could possibly hurt them, including plants. A number of common, ordinary plants are listed as poisonous. It might surprise you to know

that potatoes (the foliage), azaleas (again the foliage), apples (the seeds) and daffodils (the bulbs) are all listed on some poison plants list. Though they have made their way onto a list somewhere, that does not mean the plants are dangerous or that anyone has actually died from eating them.

In 2001 there were over 2 million emergency room visits in the U.S. due to suspected poisonings. Children were involved in 52 percent of these visits. Concerns over the possibility of plant poisoning was the fifth most common reason for the visit; yet, no plant-related fatalities have been reported in the last decade (other than a few cases of experimentation by older teens with plants known to have hallucinogenic properties). Though some plants may have poisonous principles, the likelihood of ingesting enough volume to ever receive a toxic dose is almost zero.

The only common houseplant known to cause problems in this regard is dieffenbachia (dumbcane). The plant produces a number of microscopic crystals in the cell sap that can embed themselves in soft tissue of the throat, causing swelling of the tissue. People who have taken a bite of the sappy stem are struck dumb and unable to speak. I find no record of fatalities, but it only makes sense to keep such plants away from small, inquisitive toddlers. By inference, other members of the aroid family (pothos, nephthytis, philodendron) are sometimes listed as "poisonous," but the evidence supporting this listing is not convincing.

*Arkansas Is
Our Campus*

Visit our web site at:
<https://www.uaex.uada.edu>

Table 1. Houseplants for Various Locations and Uses

Plants for Low Light Conditions	Plants for Hot, Dry Conditions	Large Specimen Trees	Flowering Houseplants	Plants for Hanging Baskets
Bromeliads	Bamboo Palm	Bamboo Palm	Peace Lily	Boston Fern
Nephthytis	Dieffenbachia*	Dieffenbachia*	Crown of Thorns	Asparagus Fern
Cast Iron Plant	Tree Yucca	Dracaena	Kalanchoe	Swedish Ivy
Chinese Evergreen	Ponytail Palm	Weeping Fig	Moth Orchid	English Ivy
Golden Pothos	Sego Palm	Rubber Tree	Flowering Maple	Airplane Plant
Grape Ivy	Sansevieria	Schefflera	Gloxinia	Grape Ivy
Snake Plant	Candelabra Cactus	False Aralia	African Violet	Hoya
False Aralia	Jade Plant	Ponytail Palm	Geraniums	Wandering Jew
Hawaiian Schefflera	Bromeliads	Tree Yucca	Tropical Hibiscus	Golden Pothos
Bamboo Palm	various Cacti	Norfolk Island Pine	Christmas Cactus	Nephthytis
*Keep this plant away from children, especially toddlers.				

Prudence is always the best approach with children, so keep all plants out of the reach of toddlers. Train them from an early age to only eat plants placed in front of them at the dinner table.

Keep all plants away from toddlers, especially dumbcane.



one-quarter turn every couple of weeks during the spring and summer when new growth occurs. Because light is low inside most homes, the closer the plant is to the window, the better it will perform. However, west-facing windows can become very hot during the summer and can cause leaf burn. Position plants that normally grow in a low light environment (African violet, pothos, Chinese evergreen, etc.) away from the window, or use a sheer curtain to protect the plants during the bright conditions of midsummer. Some homes have windows that are shielded with plastic tinting to reduce summertime heat load. These can block as much as 90 percent of the available light, so keep that in mind when evaluating what kind of plants to select.

Light

Insufficient light is one of the major factors limiting success with houseplants. As a general rule, if the location you choose for your plants is bright enough to read the want ads in a newspaper, there will be enough light for plants to grow. However, such areas may not be suitable for all plants, just those adapted to low light conditions. Watch your plants to determine if there is enough light. New, vigorous growth is a sign of good light conditions, while spindly, thin leaves are a sign of insufficient light. Plants vary in the amount of light they require. Most houseplants fall into the “low” and “medium” light category. The table above gives plants that are adapted to very low light conditions. Plants that require high light conditions (coleus, wandering Jew, hibiscus, bougainvillea, allamanda, asparagus fern, etc.) will become spindly or stop flowering if grown in low light conditions.

If a plant receives light from only one direction, it will orient itself with all of the leaves facing that direction. To avoid this lopsided look, rotate the plant



Pothos is one of the best houseplants for low light.

Some homeowners consider using artificial light sources for growing plants. While this may be possible with small plants such as African violets, it is not generally a very practical solution for larger plants. Because light levels drop off drastically as you move away from the bulb, artificial lights must be very

close or very bright to provide sufficient light to aid in significant photosynthesis. Fluorescent lights, for example, are maintained within 12 to 18 inches of African violet foliage. Greenhouse growers use 1000-watt bulbs and suspend them 6 to 8 feet above their crops, and that is inside a greenhouse. The best solution to low light problems is to find a plant that will grow with the amount of light available.

Humidity

A relative humidity of 75 to 85 percent is ideal for most plants, but the average home has humidity levels of half that, especially in the winter. Low humidity causes plants to dry more quickly, have a lower sheen to their leaves and increases the likelihood of spider mite problems. Cacti, Jade plant, Sansevieria and other succulents tolerate low humidity and are an easy way of dealing with a dry wintertime environment.

Kitchens and bathrooms are more humid than other rooms, so these are good locations for African violets and ferns that do best in more humid environments. Grouping plants together creates pockets of higher humidity. Some houseplant fanciers fill a shallow tray with pea gravel and then add enough water to the gravel so that the pebbles will be immersed in water. The plants are placed on the gravel but not directly in the water. Misting, use of air humidifiers and careful attention to soil moisture levels also help increase the humidity around the plants.



Snake plants are almost indestructible houseplants.

Temperature

Most houseplants do best with the same temperature conditions that people favor – somewhere between 65 and 75 degrees F. Avoid locations near

heating or air conditioning vents where hot or cold blasts of air blow directly on the plants. In the winter, most houseplants are easier to maintain if kept a bit on the cool side, because humidity increases as air temperature drops. So, if you have a cool bedroom with a sunny window, you might choose to use it to keep your plants during the winter months.

Many of the truly tropical houseplants (dieffenbachia, peace lily, Chinese evergreen, pothos and dracaenas, for example) may show **chilling injury** (dark, slimy, water-soaked patches along the stems or main veins of the leaves) at temperatures below 55 degrees F, so keep these plants in warmer rooms. Other plants (cacti, succulents, ficus, ferns, nephthytis, palms and most flowering houseplants) will tolerate wintertime temperatures as low as 45 degrees F without much fuss.

Potting Soil

All houseplants are grown commercially in some type of artificial potting mix. Most are made from combinations derived from a base of sphagnum peat moss or composted pine bark mixed with inert mineral ingredients such as vermiculite or perlite. These potting mixes have the advantage of being uniform and predictable, well drained, chemically inert and light in weight.

Not all of the advantages for the greenhouse grower necessarily translate into advantages for the houseplant enthusiast. Because the potting mixes are based on mostly chemically inert materials, they have almost no natural nutrients. Also the light weight of artificial mixes can make houseplants top-heavy as they grow. Many houseplants go several years without repotting. These organic mixes tend to compost in the pot, and the soil volume shrinks, sometimes by as much as 25 percent.

These artificial potting mixes are readily available at all garden centers and mass market retailers, so most people find them easiest to use. Many of these potting mixes come with an initial nutrient charge designed to get the plants off to a fast start. The nutrients will be quickly used up – usually within six weeks. After that, if you want your plant to grow, you are in charge of its nutrition. These mixes can be modified to make them work better for the houseplant grower.

A high-quality garden loam or sandy soil can be combined with the potting mix to increase the weight of the mix and provide a nutrient reserve for the plant. Mineral-soil additions reduce the problem with shrinkage of the potting mix over time and provide a moisture reserve between waterings. Combine about one part soil with two parts potting mix. Soil may

contain weeds, insects and disease organisms, so disinfect it before using. An easy way to do this is to put the moist soil in a shallow pan (a disposable aluminum turkey roaster pan works well for this purpose) and then bake the soil on low heat on the patio grill. Use a meat thermometer and maintain it at 160 degrees F for 15 minutes to assure a complete kill of weeds and diseases. Don't try this in the oven because it will stink up the house something awful.

Repotting Houseplants

Houseplants periodically require repotting to keep them healthy and growing. But few houseplants will need repotting more frequently than once a year, and most will only need repotting once every three to five years. The use of some mineral soil in the potting helps reduce the need for frequent repotting. Houseplants will tell you when repotting is needed. When the plant begins drying out between waterings, repotting may be needed. Top-heavy plants that are prone to fall over, especially when they get dry, are in need of repotting. When plants start producing small leaves and almost no new growth, repotting is needed. If a salty crust is seen on the soil surface, repot and replace as much of the soil as possible.

Repotting almost always encourages new growth, so it is best to repot in late winter just as the natural light level is increasing and the plants are awakening from their winter doldrums. Most plants grow as large as their root system will allow. So, as a rule, the larger the pot, the larger the root mass and the larger the plant. But, keep in mind that large plants require a lot more room inside the home and are more difficult to move outside during the summer. Frequently, it is better to be a bit stingy when it comes to repotting plants. Keeping them a bit rootbound keeps them smaller and easier to manage. Pot size is usually increased incrementally; begin with small pots and gradually increase pot size as the plant grows.

Break up the roots on badly rootbound plants.



When repotting, cut any circling roots you find. If dead, sloughing roots are present, be sure to remove these. Replace as much of the old soil as possible without overly disturbing the roots. When you replant, make sure the top of the root ball is at the same position as in the original pot. Don't plant it deeper.

Containers

About anything – plastic, clay, ceramic, metal or wood – can be used for plant containers. However, one requirement is critical. The container must have a drainage hole at the bottom of the pot. If the container does not have a drainage hole in the bottom, it is almost impossible to water the plant without either over or under watering. The decorative containers you find in all of the shops that lack drainage holes are intended as sleeves for a regular pot, not as a planting container. If you tend to over water, you may have better luck with clay pots because plant roots stay drier. If you consistently find yourself under watering, plastic or ceramic pots may be the best choice because they lose less water than clay pots.



Weeping fig is an excellent tree-form houseplant.

Watering

Success or failure with houseplants often comes down to your ability to water the plants correctly. The plants are completely at your mercy, and if they survive or die depends on the care you give them. Because water needs are immediate and ongoing, proper watering will be your first test. People seem about equally divided between those prone to over water or under water. The kind of plant, the time of year, the size of the plant, weather conditions, light levels, the amount of air movement, the relative humidity and a host of other large and small factors all influence water uptake. Your goal is to interpret these conditions and get it just right – neither over or under doing the job.

The appearance of the plant and your finger are the best guides to water needs. Most plants do best when the soil dries slightly between waterings but not to the point that the plant wilts. An occasional wilting will not hurt most plants, but some plants, such as schefflera, croton and aphelandrea, begin dropping lower leaves if this happens too often. Dracaenas and wandering Jews often have burned leaf tips if allowed to get too dry. Plants that are continually maintained on the too dry side usually have little new growth and often have dull, unhealthy looking foliage.

If plants are kept too wet, root growth will be reduced, and many of the same symptoms mentioned above occur. For example, wilting and leaf drop are often the first signs of extreme over watering. Stick your finger in the soil before watering, and only water when it is dry to the touch. Both wintertime heating and summertime air conditioning dehumidify the atmosphere, so plants may need more water during the heating and cooling seasons than the rest of the year. Your finger is the best method of determining water needs, not the day of the week. Water gadgets that measure soil moisture are available, but they are of little practical value and are no better than your finger.

When you do water, apply enough so that about 10 percent of the water given to the pot runs out the drainage hole in the bottom of the container. If the soil has become really dry since the last watering, apply half the normal amount of water and let that soak in. Then, come back in a few minutes and water a second or third time to make sure the soil ball is completely wetted.

One of the common causes of plant death occurs when the flowerpot is inserted inside a decorative container. These are handy for keeping down spills and protecting the floor and carpet, but they can be a death trap for the plant. Any water that runs through the pot begins to accumulate in the bottom of the decorative container. After a few waterings, the plant will be in water and the soil ball will be completely saturated. Anaerobic rot sets in, and before long the roots will become a stinking mass of organic debris. To avoid this scenario, pour any excess water out of the pot soon after watering. If the pot is too large and this is not possible, put a layer of gravel or stones at the bottom of the pot to elevate the pot off of the bottom of the container. Then, stick a bamboo pole beside the pot to the bottom of the decorative container to use as a dipstick to test the depth of the water level. If too much water is found, delay watering.

Water quality sometimes becomes an issue with houseplants. Municipal water supplies are always acceptable for watering houseplants. Chlorine added to the water during purification has no adverse affects on plants. Some well water sources around Arkansas may have high salt content, have high carbonate levels or be very hard. Because the salt residue remains behind (and builds up) as the plant loses water through evaporation, high salt content water is a problem for houseplants. Plants grown using water with high salt levels show a white, crusty scale at the top of the soil and eventually stop growing as the level becomes too high. Hard water and water with high carbonate levels also lead to salt deposits on the soil surface. Watering with rainwater or some surface water source should solve the problem. If a salt-based water softener is used in the home, water for houseplants should be collected before it enters the water softener unit.

Fertilization

Houseplants are not heavy feeders and do not require a lot of fertilizer for maintenance. However, they are grown in artificial potting mixes that have almost no nutrients. So if you expect to see them continue to grow, they must receive occasional fertilization. Keep in mind that poor growth can be caused by a number of factors – low light, wrong temperature, wrong watering regime, etc. – and adding extra fertilizer in an attempt to force the plant to grow will be completely ineffective if the cause of poor growth is not a lack of nutrition.



African violets continue to bloom if given uniform light levels and kept fertilized.

Most new plants have sufficient nutrients from the greenhouse where they were grown to sustain them for two to three months. When the nutrients are depleted, the plant will only grow if fertilized.

Plants respond best to fertilization in late winter and spring as growing conditions are improving. During the fall and winter when light is low and conditions are less ideal, reduce or withhold fertilization completely to force the plant into a kind of rest period.



Fertilize houseplants during the time of year when light is high enough to ensure growth.

What kind of fertilizer to use? For convenience sake, most prefer to use one of the many kinds of fertilizer products designed specifically for houseplants. These come in several different analyses, with the most common types having a 1:1:1 ratio of nitrogen to phosphate to potassium. A commonly available analysis is one containing 20-20-20. Some products are still seen with the 1:2:1 ratio, with analyses such as 15:30:15 being fairly common. Most current data suggests that the extra phosphorus is not needed and may actually encourage stem stretching and weak growth. Some of these products are supplemented with trace minerals, which can be important if a plant is grown long term in a completely artificial potting mix. If some soil has been added to the potting mix, the presence of trace minerals is not important.

The easiest to use houseplant fertilizer products are the highly soluble fertilizer salts that are dissolved in water. These are convenient, easy to use and give good results, provided they are applied according to recommendations. Most manufacturers recommend fertilizing once every two weeks, but monthly feeding is usually adequate. In the wintertime, fertilization should be curtailed.

Several types of slow-release fertilizer products are available for houseplants as well as various kinds of slowly available organic fertilizers. These

products provide the convenience of continual feeding for three or four months without the hassle of measuring and mixing. However, they tend to produce less dramatic results than liquid fertilization. A good strategy might be to use the water-soluble fertilizer during the brighter days of summer and the slow-release products during the darker days of winter.

Summertime Care

Houseplants benefit from a stint out of doors, but be careful not to sunburn the plants when you make the move. Plants that have been indoors all winter are adapted to the low light conditions found inside the home and, if placed directly in full sun, can be scorched severely. Move them to a shaded area first and then gradually shift them to brighter areas as they adapt to the new environment.

This summertime vacation is a good time to do any pruning that is needed. Pruning cuts made in the spring will allow sufficient time for the plant to grow new shoots and leaves before being moved back inside during the winter. All houseplants – with the exception of palms and Norfolk Island pine – can be top-pruned to encourage new lateral growth.

As fall approaches, move the plants back inside in stages, reversing the process used in the spring. This conditions the plant for its new low light home during the winter months. Moving the plant from the high light conditions outside to the dark, low humidity conditions inside can cause excessive leaf drop if not done in stages. Begin the process in early September to allow sufficient time for the move indoors. Some plants, especially Boston ferns, always drop a lot of leaves when moved indoors, so make sure the plant is of sufficient value to you for the mess you will have to endure once it is brought inside.

DR. GERALD L. KLINGAMAN is Extension horticulture specialist - ornamentals, Fayetteville, and **JANET B. CARSON** is Extension horticulture specialist, Little Rock. They are both employees of the University of Arkansas Cooperative Extension Service.

Pursuant to 7 CFR § 15.3, the University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services (including employment) without regard to race, color, sex, national origin, religion, age, disability, marital or veteran status, genetic information, sexual preference, pregnancy or any other legally protected status, and is an equal opportunity institution.