# What's Wrong with My Plant?

*A basic guide to various circumstances that can trouble houseplants*

## Symptoms

If any of the following symptoms sound familiar, take note of your care regimen and the plant's environment and adjust accordingly using the following information.

- **Weeping:** Some plants, like pothos and philodendron, will produce droplets of moisture when they are overwatered. To remedy, increase air circulation and reduce watering.
- **Edema:** Caused by overwatering, succulents may produce corky bumps on their leaves. Affected leaves will eventually turn yellow and fall off. Reduce watering, and ensure the plant is kept in a worm, sunny area.
- **Leaf shed:** This can be caused by over or underwatering, changes in light or temperature, and can even be a normal growth pattern for the plant. Some plants shed leaves after being moved, but if it continues, check to see if it needs to be repotted.
  a. **Note:** Shedding leaves is most often the plant's way of letting go of the old and making room for the new. If you see a lot of green leaves on the floor, it may indicate overwatering or allowing the plant sit in water for too long. If yellow leaves fall, it may be normal or may indicate underwatering.
- **Failure to Thrive:** Take a look at potential stressors like air pollution, compacted soil, and whether the plant hos outgrown its container.
- **Brown leaf tips:** Soluble salts in the soil or hard tap water are often the culprit. If the plant dries out or is overfertilized, these salts will accumulate on leaf tips.
- **Fungus:** Look for dark, dirty-looking deposits on otherwise healthy leaves. This may be sooty mold caused by deposits from insects. Wash affected leaves with warm soapy water.

## Environment and Care

### *Containers*

**Drainage:** This refers to the flow of water through your plant's potting soil and roots, and eventually through the hole in the bottom of the container. All houseplants need pots with drainage holes. When drainage is insufficient or slow, the oxygen levels decrease, often resulting in root rot. Conversely, when drainage is too quick, roots may not have time to absorb adequate moisture. If the latter is the case, one thing you can try is cutting a section of paper coffee filter, weed barrier fabric, or mesh screen and adding to the pot, just above the drainage hole underneath the potting mix.

**Repotting:** If you're unsure whether your plant needs to be repotted, one telltale sign is an increase in watering frequency. If the soil level in the pot has lowered significantly, this can also be an indication that your plant needs a refresh. When repotting your plant, never increase the container size by more than 1 increment, or 2" in diameter. Planting into an excessively large container can hamper drainage, because roots cannot absorb

the liquid in all of the extra space. This often leads to root rot.

## *Water*

A general rule for most houseplants is to allow the top 1/3 of the potting soil to dry before watering. Some plants, like cacti and succulents, should dry almost completely before watering. Others, like ferns, prefer to stay on the moist side, but not soggy. If your plant is 'weeping' or you notice fungus gnats flying around your pots when you water, step back on watering frequency, and be sure to test soil for moisture before watering.

On the other hand, if you find that foliage is wilting or shriveling, this often means that soil should be tested for moisture more often. Always test your soil for moisture before watering, because plants don't use water at the same rate. Many factors affect their moisture needs, such as the amount of sunlight they're getting and the time of year.

## *Temperature*

You might be surprised how much temperature can affect your indoor plants. Tropical plants that are placed too close to cold, drafty windows can cause leaves to brown and curl. Plants from more temperate climates may start to drop their flowers when the temperature rises.

Get to know the temperature range of your space. Start with a regular thermometer placed in or near a window that you'd like to use for growing plants. Be sure to check the thermometer at various points throughout the day and record a minimum and maximum temperature. Be mindful that this will also vary depending on the season. The optimal growth range for most (but not all) indoor plants will fall between 50 and 80° F.

## *Fertilizer*

*General Rule:* fertilize when plants are actively growing. This is usually in the spring through early fall when light levels are high, or if plants are kept under grow lights.

Always use fertilizer at half the manufacturer recommended strength when soil is moist. Roots are more sensitive when dry and it's possible to burn a plant's roots if fertilizing dry. Hydrate first with plain water, and then fertilize at half-strength.

Don't feed newly-purchased plants or plants that have been recently relocated. Fertilizer will not help a stressed plant, and can cause problems.

Wait 6 weeks after plant has been transplanted to fertilize. Most soils have enough organic material to feed the plant for several months. Once new growth is evident, fertilizing can resume.

**N-P-K**

- N Nitrogen: The first number on a fertilizer package; nitrogen supports the production of new stems and leaves. Young plants and foliage benefit from a boost of nitrogen.
- P Phosphorus: The second number; phosphorus is essential for all plants, and encourages the growth of roots, buds, and blossoms. High phosphorous will help most blooming plants.
- K Potassium: The third number; potassium improves the function of the roots, and supports the plants ability to move moisture and nutrients to all tissues. Potassium helps the overall health of the plant.

**Signs of too little fertilizer:**

New growth appears spindly and pale. Add an all-purpose fertilizer and the leaves should take on a richer color in just a few days. This can also be a sign that the plant is stressed because of too much light.

Dark green veins and yellow leaves can indicate that a plant is low in iron. Feed with a high nitrogen fertilizer with chelated iron.

**Signs of too much fertilizer**

Very dark, lush leaves with some browning or curling of leaf edges suggest feeding too often or too much.

Leech soil by double watering. Blooming plants may refuse to produce buds, or buds may fall off. This indicates too much nitrogen, and not enough phosphorus. Lack of humidity may also cause bud drop.

### *Humidity*

Many houseplants originate in humid jungle environments, and may have spent a lot of time in greenhouses.

Modern homes and offices are usually quite arid, especially in winter. Leaf tips and edges may become dry and turn brown, or the plant may shed its inner leaves. You can provide more humidity by using an oversized saucer or tray filled with gravel and a small amount of water, ensuring that the plant isn't sitting in the water. The evaporation from the tray will help increase humidity. You may also try placing a humidifier nearby.

Misting plants does not create adequate humidity, and can actually foster the growth of diseases and promote pest infestation.

### *Grooming*

Remove yellow leaves and stems that are withered or brown. Try to avoid removing healthy foliage by cutting rather than pulling. A good pair of sharp shears or scissors works best.

As you remove withered or yellow leaves, check your plant for evidence of insect pests or disease. When entire branches show signs of pest problems, go ahead and snip it off. Remove leaves that have fallen on the soil's surface, as they can harbor diseases and insects.

## Disease

Remove leaves with suspicious spots. This will remove spores and interrupt the life cycle. Keep leaf surfaces dry, as most of these fungi thrive in damp conditions.

Stem and root rot is caused by fungus. Overwatering often contributes to this problem, especially when combined with cool temperatures. If the container or soil is contaminated and roots are damaged, this will likely lead to root rot.

Fungicides are best used as a preventative measure, not a treatment. Once the tissue is dead, it only continues to deteriorate. Leaf tissues do not regenerate once they have been devastated by fungus. If you suspect root rot, remove the plant from its container and inspect for rot. Change out old soil and use a clean container.

Scrub the container with soapy water and dip in a solution of 1/2 cup bleach to a gallon of water and let it dry. Make sure the container isn't too big. Prune back the plant by 1/3 to stimulate new growth.

## Insect Pests

The most common insects that easily colonize on our plants ore: Aphids, Fungus Gnats, Mealy bugs, Scale, Spider Mites, Thrips and White Fly. These insects may gain entry to your home or office by hitching a ride on new plants. Keep new plants separated for about 2 to 3 weeks. Look for what insects leave behind, like a sticky substance on leaf surfaces, or shed skin and droppings. You may see a fine web or stippled leaves.

**Aphids:** Green or black, tiny, sucking insects usually found in groups on the tender growing points and under the leaves. You will find sloughed off white skins on the lower leaves. Leaves will often be curled or distorted.

- Control: Cut stems that are infested. If only a few are present, you can remove them with a cotton swab dipped in alcohol. For more serious infestations, clean the plant thoroughly in a lukewarm shower or spray with soapy water. The spray will dislodge most of them. Use an Insecticidal Soap or an Insect spray containing Imidacloprid. Neem oil can also help when sprayed in 7 - 10 day intervals.

**Fungus Gnats:** Tiny black flies with clear wings. Usually flying around the plants, windowsill and computer screen. They often gain entry through open doors or windows and then breed in the damp soil of houseplant containers. Adults may lay up to 300 eggs at a time, which hatch a week later into tiny threadlike larvae. The

larvae feed on fungus and rotting vegetation in the soil. If their numbers get too high they can even eat on tiny plant roots. After feeding for 2 weeks, they pupate into adults. The adults only live for 10 days but in that time they mate and find a suitable place to lay more eggs.

- Control: the first thing is to try to allow the soil to dry out between waterings. Fungus gnats need constant moisture to survive. If problems persist, try trapping the adults with yellow sticky trap placed near the soil level of the plant and near a light left on at night. To trap larva, push a slice of raw potato into the soil, which attract the larvae. Gather the potato pieces and dispose of them every 2 days. If all else fails the best thing to do is to drench the soil with a special strain of Bacillus thuringiensis (BT), or Thuricide.

**Mealybugs:** Mealybugs are experts at hiding in small nooks where leaves join stems, and some species feed on plant roots. Adults appear like small bits of white fuzz, or cottony sacks loosely attached to stems, leaves and roots.

- Control: Begin by physically removing bugs with a cotton swab dipped in alcohol or vegetable oil to dislodge. Collect as many as you can find or take a paper towel that is soaked in soapy water and wipe down the leaves and stems. Pay close attention to areas where leaves attach to stems. To remove from the soil, drench in a solution of 1 tablespoon (biodegradable fragrance and lotion-free) liquid dish soap and 1 gallon water. If the problem persists, a systemic pesticide can be used on any plants that aren't meant to be eaten.
- Biological Control: A natural predator called the mealybug destroyer is an effective way to control if available.

**Scale:** Scale insects look like brown or white scabs or shells attached to leaves and stems. Young can be found crawling near adults. They can infest hundreds of different types of plants, but tend to be most troublesome on ficus and ferns. The evidence of scale is easy to detect. Affected leaves or stems may be weak and slightly yellow and there is often sticky honeydew on the lower leaves, table, or floors.

- Control: Physical removal is best. Remove infected areas. Wash leaves with a paper towel and oil-based soap or spray with horticultural oil. Repeat in 10-day intervals.

**Spider Mites:** These are tiny mites that can be red, yellow, black, or even clear. They weave a fine web on and around leaves and stems. They love hot, dry conditions, and usually hang around south and west-facing windows. Leaves will have a stippled affect if you look closely. If you spray the leaves with a fine mist, you can see their web.

- Control: Spider mites multiply quickly, so early detection is key. Mist plants or use pebble trays to help prevent problems with mites. Insecticidal soap or Neem oil will also help keep them at bay. Repeat in 5 to 7 day intervals. Be sure to wipe down the windowsill, walls, or shelves that the plant is sitting on, as they tend to flee during treatment and return afterward.
- Biological control: If the infestation is expansive, you can try releasing beneficial mite predators.

**Thrips:** Tiny, long insects that are not usually found in houseplants. They are usually found in the flowers of seasonal blooming plants like Chrysanthemums and Dahlias. If the infestation is severe it can spread to indoor plants. You will see puckered or curled leaves with silvery streaks on them.

- Control: The most effective control is physical removal by wiping the plant. You can also use a fine spray of water. Repeat in about 5 to 7 days. If the problem persists, use an insecticidal soap. If they are in the flowers, using a systemic may help. Yellow or blue sticky traps will trap the adults and keep them from laying more eggs.

**Whitefly:** These are small white insects that fly around when plants are watered. They tend to only attack plants that have veined leaves but can be especially difficult to control.

- Control: Systemic insecticides can be used preventatively to control larvae, but the adults have no mouths to injest poison. You can physically remove larvae from under the leaves by using a damp paper towel

soaked in soapy water. Prune the worst areas and spray with a pesticidal oil.