UAF Indoor Plant Program (IPP) - Pest Management Information

Updated 10/21/19

Most indoor plant problems are related to environmental stress. Table 1 shows symptoms, possible causes and treatments to help you recognize and deal with some of the many indoor plant problems. Stressed plants usually recover once they receive acceptable growing conditions but it may take weeks to months. If unsuccessful in controlling problematic issues, it may be best to discard or donate the plant and acquire varieties that are successful in the conditions you can provide. Other problems are caused by insects and prevention is key to managing. The key to success against pests is to control them during their life stages so know your pest. Reference table 2 for Pest Life Cycles
Information taken from Cooperative Extension Service Fairbanks Master Gardener Class, 2018 Curriculum

Indoor plant pests can be managed but not eradicated; over exposure or prolonged use of some pest management treatments may harm your plant.

Caution: Do not use chemicals. They can be harmful to humans and animals! Few pesticides are registered for indoor use on houseplants.

Listed below are a few suggested methods for pest management:

1. **Green Solution:** If there are only a few pests, dip a Q-tip in alcohol and gently swab them off. For a more widespread problem, start by using a spray of warm water mixed with a few tablespoons of biodegradable soap (Ivory). If that doesn't cure the problem, make a solution using 8oz. water & 8oz. alcohol, add two tablespoons of biodegradable soap and two tablespoons of mineral oil. Spray all areas of the plant. Use this solution on leathery leafed plants (except palms), never on fuzzy leafed plants like African violets or begonias. For palms, omit the alcohol from the Green Solution. Never spray a plant that's sitting in the sun or one with very dry soil. https://www.houseplant411.com/

2. **Peroxide:** A surprisingly easy, effective method for controlling fungus gnats is hydrogen peroxide! Simply mix one part 3% hydrogen peroxide with four parts water and water your plant with the solution. The peroxide will make quick work of any fungus gnat eggs or larvae. It also happens to oxygenate the soil and flush out compromising bacterial and fungal growth, making your plants extra happy and healthy. You may have to repeat the treatment a few times to catch any new eggs laid by adults. If this still isn't helping, consider releasing beneficial nematodes (microscopic predatory worms) into the soil which can make quick work of fungus gnats, or completely repot and replace with fresh soil. http://pistilsnursery.com/7-most-common-indoor-plant-bugs/

3. **Neem Oil:** Neem oil is pressed out of the seeds obtained from neem trees. The botanical name for this tree is *Azadirachta indica*. The tree is a broadleaf evergreen that is indigenous to India and adjacent areas. The tree belongs to the mahogany family and commonly becomes 50 to 60 feet tall. In addition to its use as an organic insecticide spray, this oil has been used medicinally and in the cosmetics industry. Neem oil and the tree from which it is derived are so called from the Sanskrit, *nimba*.
https://www.thespruce.com/using-neem-oil-as-an-organic-insecticide-2132579

4. **Diatomaceous Earth:** Is a type of powder made from the sediment of fossilized algae found in bodies of water. Because the cells of these algae were high in a compound called silica, the dried sediment produced from these fossils are also very high in silica. These deposits are found all over the world. The ancient Greeks used it to make building materials, like bricks and blocks. Later on it became popular in Europe for various industrial uses. Food grade diatomaceous earth can be used for treating high cholesterol, constipation, brushing teeth and much more. Diatomaceous earth is thought to kill insects by dehydrating them. Always use a mask when handling Diatomaceous because the fine particles could create lung problems.
https://www.webmd.com/vitamins/ai/ingredientmono-1531/diatomaceous-earth
https://balconygardenweb.com/if-youre-a-gardener-learn-about-these-13-diatomaceous-earth-uses/

5. **Sticky cards:** Are glue-based traps frequently used in pest control to catch and monitor insects and other pests. Typically sticky cards consist of a sticky glue layer mounted on a piece of cardboard that is folded into a tent-structure to protect the sticky surface. Most sticky traps contain no pesticides, although some may be impregnated with aromas designed to be attractive to certain pests.
https://citybugs.tamu.edu/factsheets/ipm/what-is-a-sticky-trap/

6. **Soil covers:** Replace the top inch of soil with a layer of sand, gravel or decorative moss soil covers. This will help control gnats in the soil, and deter them from laying eggs. Plus soil covers also add a nice decorative touch.
https://getgardentips.com/2018/04/20/get-rid-of-fungus-gnats-in-houseplants-soil/

7. **Nematodes:** Beneficial Nematodes are microscopic, non-segmented roundworms that occur naturally in soil throughout the world. Inside the nematode's gut is the real weapon — beneficial bacteria that when released inside an insect kill it within 24 to 48 hours. The nematodes enter the larvae via the mouth, anus, respiratory openings, or directly through the body wall of the pest. Next, nematodes eject their bacteria inside the pest's body. These bacteria multiply and cause blood poisoning of the pest, leading to death. They also convert host tissue into nutrition for the nematodes to feed on and multiply. As the food resources within the dead pest become scarce, nematodes exit the pest and immediately start searching for a new host.
https://www.arbico-organics.com/category/beneficial-nematodes-faqs
https://blog.bugsforgrowers.com/natural-predators/entomopathogenic-nematodes/beneficial-nematodes/twelve-important-facts-about-beneficial-entomopathogenic-nematodes/

Additional links:

http://nymag.com/strategist/article/best-nontoxic-pesticides-insecticides.html

https://www.gardenbetty.com/make-your-own-insecticidal-soap-for-natural-pest-control/

https://extension2.missouri.edu/g7273

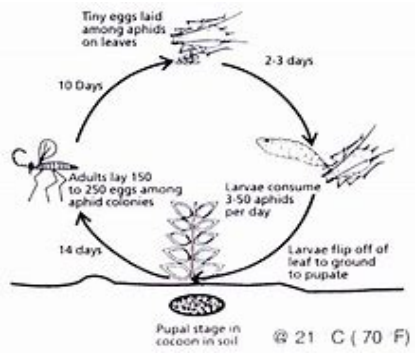
http://www.jasons-indoor-guide-to-organic-and-hydroponics-gardening.com/natural-pest-control.html

Table 1: Indoor plant problems, causes, and treatments

Symptoms (what you see)	Possible causes	Treatment (corrective action)
Spindly, stems grow abnormally long. Leaves lack color, are undersized and may fall off.	Too little light	Move plant closer to window or other light source. Don't fertilize when plants are dormant (winter)
Old leaves curl under. New leaves are smaller than old leaves. Leaves may brown.	Too much light	Move plant farther from window or light source, or filter light through a curtain.
Yellow, brown or white (bleached) spots on leaves (particularly on upper leaves).	Sun scorch caused by sudden increase	Shade plant. Move plants from shade to sun gradually so they can adapt. Some require shade.
Leaves turn yellow, curl downward or wilt.	Too much heat	Move plant to a cooler spot. Avoid placing plants near heat registers or hot-air outlets.
Wilt even if soil is moist. Margins and tips of leaves burn. White crust may appear on leaf edges and on the soil surface when dry.	Salt buildup in soil	Water three times at 30-minute intervals to wash the salts out the drainage hole. Do not use soft water.
White crust on rim and sides of porous pots. Leaves touching rim wilt and die.	Salt accumulation on pot	Leach soil as described above. Wash excess salts off pot with clear water. Wax the rim of the pot to prevent future salt deposits that might touch leaves.
White or yellow spots on leaves of African violets, gloxinias and other hairy leaved plants.	Cold water on leaves or in soil	Use room-temperature to lukewarm water for watering,
Dark brown spots around leaf margins of tropical foliage plants (especially philodendrons).	Raw natural gas or incompletely burned gas in room	Check gas lines and fittings for gas leaks. Adjust gas burners for blue flame. Have furnace checked for leaks or adjustments.
Plants wilt between watering, roots fill pot and may grow out drainage hole. Growth slow.	Plant is too big for its pot	Repot in a larger container with a good potting soil mixture.
Sudden wilting or shedding of foliage during cold weather.	Chilling	Move plant away from chilling drafts.
Wilting and loss of foliage after repotting or initial potting.	Transplant shock	Give optimum care until plant adjusts to its new situation.
Tips of leaves turn brown and leaves wilt. Lower leaves turn yellow and fall off.	Not enough water	Water until some water runs out the drainage hole, or submerge the pot in a pail of water for 5 minutes. Drain off excess water. Repeat when soil is dry to touch.
Lower leaves curl and wilt. Stems become mushy and rot. Soil in pot is usually wet.	Too much water	Water less frequently. Use pots with drainage holes in the bottom. Do not allow pot to stand in water more than 30 minutes.
Leaf edges are crinkly and brown. Tips of new leaves often dry up.	Lack of humidity	Increase humidity by standing pots on a bed of moist gravel or placing them in planters with moist sphagnum moss packed around the pots. Use a humidifier or move plants to a more humid area.
Plants grow rapidly with lots of foliage but few, if any, flowers.	Too much fertilizer	Fertilize less often or at half the suggested rate. Use low-Nitrogen fertilizer during blooming season. Do not fertilize when plants are dormant (winter).
Lower leaves lose color and may drop off. New leaves are progressively smaller than previous leaves. Stems are stunted.	Too little fertilizer	Fertilize regularly when plants are growing. Use a soluble fertilizer and apply per package directions.
Brown/black spots on leaves. Tip and marginal burning. Spider plants, corn plants (Dracaena) and alams are especially sensitive.	Fluoride in water supply	Use rain or distilled water. Keep pH up to 6.5.

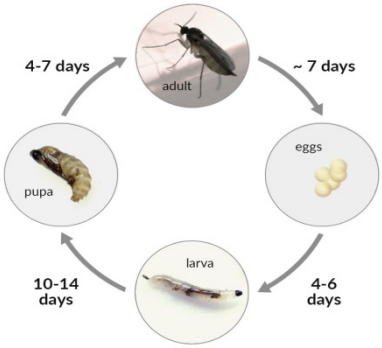
Table 2: Pest life Cycles

Aphids: Small soft-bodied insects with mouthparts that are made for piercing plant issue and sucking the plant's fluids. They can develop from birth to mature adults in less than two weeks; each adult aphid can produce up to 100 young per week.



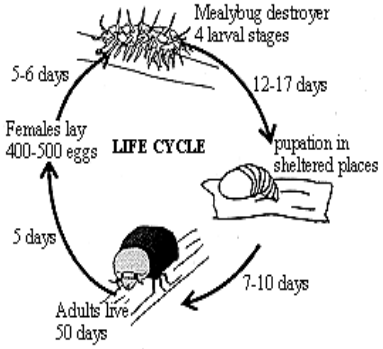
https://www.bing.com/images/
http://www.davey.com/arborist-advice/articles/aphids/

Fungus Gnats: Very small, delicate flying insects (about 1/8 inch long). The larvae feed on organic debris, plant roots, or the base of the plant stem in the soil line.



https://www.bing.com/images/
https://www.gardenguides.com/video_4774744_control-fungus-gnats-indoor-plants.html

Mealy Bugs: Small soft-bodied insects that appear to be covered with a white or grey powdery or waxy outer layer. Their mouthparts enable them to suck sap from the plant's leaves, shoots, stems, & roots.



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https://www.gardenguides.com/92586-rid-mealy-bugs-house-plants.html

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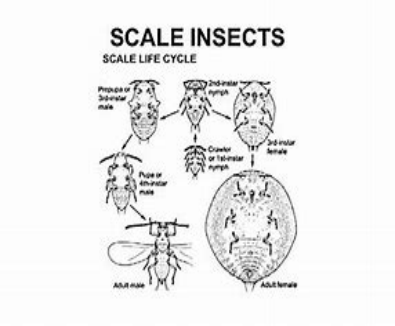
Scale: Sap sucking insects that resemble a disc like shield or a round wart or blemish adhering to the plant's leaves and stems.



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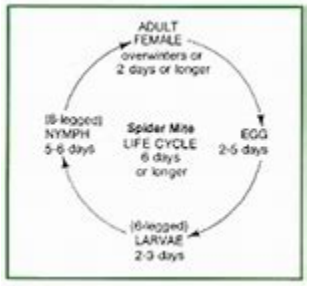
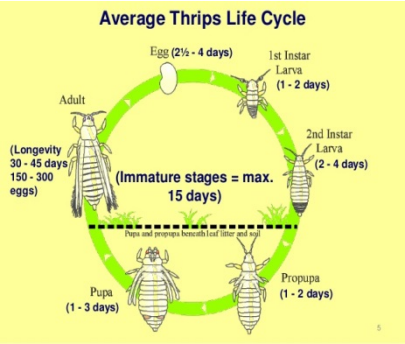
http://www.davey.com/arborist-advice/articles/scale-insects/

Spider Mites: Tiny web-spinning mites that will suck the cell contents from plant's.



https://www.bing.com/images/
https://www.gardenguides.com/about_6393590_life-cycle-spider-mites.html
http://www.davey.com/arborist-advice/articles/mites/

Thrips: Small, slender and elongated insects that damage plants by rasping and scraping the plant's surfaces, leaving brown or silvery scars on the infested tissues.



https://www.bing.com/images/
https://www.gardenguides.com/12565413-how-to-kill-thrips.html

For more information, contact: https://www.uaf.edu/ces/districts/tanana/
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