



Aphids are big enough to see with the naked eye. These frolicking bugs are what you'll get if you don't keep your garden clean.

Introduction

Insects, mites, and maggots slither into indoor gardens eating, reproducing, and wasting your beautiful plants. Outdoors, they live everywhere they can. Indoors, they live anywhere you let them. Fungi are present in the air at all times. They may be introduced by an infected plant or from air containing fungus spores. Fungi will settle down and grow if climatic conditions are right. Pests, fungi, and diseases can be prevented, but if allowed to grow unchecked, extreme control measures are often necessary to eradicate them.

Prevention

Cleanliness is the key to insect and fungus prevention. The indoor garden should be totally enclosed so the environment can be controlled easily. Keep the floor clean. Keep all debris off soil surface. Do not use mulch indoors. Insects and fungi like nice hideaway homes found in dirty, dank corners and under decaying leaves or rotting mulch.

Gardeners and their tools often transport microscopic pests, diseases, and fungi that could ultimately destroy the garden. This does not mean gardeners and their tools have to be hospital-clean every time they enter an indoor garden, even though that would be nice. It does mean normal and regular sanitary precautions must be taken. Gardeners who wear clean clothes and use clean tools reduce problems considerably. A separate set of indoor tools is easy to keep clean. Pests, diseases, and fungi habitually ride from plant to plant on dirty tools. Disinfect tools by dipping in rubbing alcohol or washing with soap and hot water after using them on each diseased plant. Another quick way to sterilize

pruners is with a hand-held torch. A quick heating with the torch will sterilize metal tools immediately.



Simple hygiene in the indoor garden keeps pests and diseases in check.



Dirty indoor gardens contribute to pest and disease problems.



Sweep the indoor garden floor every few days to avoid problems with pests and diseases.

Personal cleanliness is fundamental to preventing pests and diseases. Wash your hands before touching foliage and after handling diseased plants. Smart gardeners do not walk around the buggy outdoor garden and then visit the indoor garden. They do it vice versa. Think before entering the indoor garden and possibly contaminating it. Did you walk across a lawn covered with rust fungi or pet the dog that just came in from the garden outside? Did you just fondle your spider mite-infested split-leaf philodendron in the living room? Avoid such problems by washing your hands and changing shirt, pants, and shoes before entering an indoor garden.

Once a crop has been grown in potting soil or soilless mix, throw out the grow medium. Some gardeners brag about using the same old potting soil over and over, unaware that this savings is repaid with a diminished harvest. Used soil may harbor harmful pests and diseases that have developed immunity to sprays. Starting a new crop in new potting soil will cost more up front but will eliminate many potential problems. Used soil makes excellent outdoor garden soil.

Once potting soil is used, it loses much of the fluff in the texture, and compaction becomes a problem. Roots penetrate compacted soil slowly, and there is little room for oxygen, which restricts nutrient uptake. Used potting soil is depleted of nutrients. A plant with a slow start is a perfect target for disease, and, worst of all, it will yield less!

Companion planting helps discourage insects outdoors. Pests have nowhere to go indoors, so companion planting is not viable in indoor gardens.

Plant insect- and fungus-resistant varieties of fast-growing annuals and ornamen-

tal plants. If buying seeds from one of the many seed companies, always check for disease resistance. Choose healthy plants that you know are resistant to pests and diseases.

Keep plants healthy and growing fast at all times. Disease attacks sick plants first. Strong plants tend to grow faster than pests and diseases can spread.

Forced air circulation makes life miserable for pests and diseases. Pests hate wind because holding on to plants is difficult, and flight paths are haphazard. Fungal spores have little time to settle in a breeze and grow poorly on wind-dried soil, stems, and leaves.

Ventilation changes the humidity of a room quickly. In fact, a vent fan attached to a humidistat is often the most effective form of humidity control. Mold was a big problem in one indoor garden I visited. The room did not have a vent fan. Upon entering the enclosed room, the humid air was overpowering. It was terrible! The environment was so humid that roots grew from plant stems. The gardener installed a vent fan to suck out moist, stale air. The humidity dropped from nearly 100 percent to around 50 percent. The mold problem disappeared, and harvest volume increased.

Indoor horticulturists who practice all the preventative measures have fewer problems with pests and diseases. It is much easier to prevent the start of a disease than it is to wipe out an infestation. If pests and diseases are left unchecked, they can devastate the garden in a few short weeks.

Control

Sometimes, even when all preventative measures are taken, pests and diseases

Logical Progression of Insect Control

1. Prevention removal	2. Manual Re-
a. Cleanliness	a. Fingers
b. Use new soil	b. Sponge
c. One indoor set of tools	3. Organic Sprays
d. Disease-resistant plants	
e. Healthy plants	4. Natural Predators
f. Climate control	
g. No animals	5. Chemicals
h. Companion planting	

still slink in and set up housekeeping. First, they establish a base on a weak, susceptible plant. Once set up, they launch an all-out assault on the rest of the garden. They move out in all directions from the infested base, taking over more and more space, until they have conquered the entire garden. An infestation can happen in a matter of days. Most insects lay thousands of eggs in short periods. These eggs hatch and grow into mature adults within

a few weeks. For example, if 100 microscopic munchers each lay 1000 eggs during their two weeks of life and these eggs grow into adults, two weeks later 100,000 young adults would lay 100 eggs each. By the end of the month, there would be 100,000,000 pests attacking the infested garden. Imagine how many there would be in another two weeks!

Sprays often kill adults only. In general, sprays should be applied soon after eggs hatch so young adults are caught in their weakest stage of life. Very lightweight (low viscosity) horticultural oil spray works well alone or as an additive to help kill larvae and eggs.

The availability of some sprays can be seasonal, especially in areas that are more rural. Garden sections of stores are changed for the winter, but extra stock is sometimes kept in a storage room. Look for bargains on sprays at season-end sales. Today, there are many indoor gardening stores that carry pest and disease controls all year round.

Common chemicals with their trade names and the insects they control:

Note: Do not apply these substances to edible plants

Generic Name	Purpose	Enter System
Griseofulvin	fungicide	systemic
Streptomycin	bactericide	systemic
Carbaryl	fungicide	systemic
Tetracycline	bactericide	semisynthetic (Terramycin®)
Nitrates	foliar fertilizers	systemic
Avid	insecticide	not truly systemic, actually translaminar
Pentac	miticide	systemic
Temik	insecticide	systemic
Neem	insecticide	systemic
Funginex	fungicide	systemic
Vitavax	fungicide	systemic
Orthene	insecticide	systemic

NOTE: This list is not all-inclusive. The basic rule is to not use systemic products.