

GREENHOUSE BASICS

For New Owners

Capillary Mats

Capillary mats are a watering system in which an absorbent fabric is laid under potted plants and kept moist so that the plants will be watered as needed by capillary action through contact between their growing medium in the bottom of the pot and the wet mat.

These mats are usually laid over some kind of raised grid or insert in a low tray, which serves as the water reservoir. If the mats feel dry, it's time to refill the water in the tray and also re-moisten the mat. Be sure that the growing medium in the pot is kept moist to allow the plant to draw water from the mat as needed.

One drawback to this system is that some plastic pots have drainage holes that are slightly recessed and then the potting medium does not come in contact with the mat. It's a good idea to check the bottom of each pot to be used in watering by capillary matting to be sure there is direct contact between the holes in the pot, the growing mix and the wet mat.

In those instances when the holes and growing medium are not in direct contact with the capillary mat, the situation can be remedied by making a "wick" of a strip of the capillary matting or other absorbent material and pushing it up through the holes in the pot into the growing medium. This strip should then be moistened and put in contact with the mat to draw up the moisture.

Turn the pots on the matting occasionally to discourage the plants from taking root in the capillary matting. Can't blame the plants for taking advantage of a good thing!

Clay pots generally work very well on capillary matting because they are porous and absorb the moisture then transfer it to the growing medium.

Another benefit of growing on capillary mats is the extra humidity they add to the atmosphere, which can be a big help in winter when heat dries the air.

Tips for Plants sans Pesticides

Inevitably greenhouse plants will have problems with pests, but it's not always necessary!! To use pesticides when this happens....Green-house plants can develop problems with a variety of insect and insect-like pests. Here are some common pests;

Mites - These tiny animals are related to Spiders. They are so small that they look like little dots, often red, yellow, or green, moving on the plant- Mites typically make webs, and some cause bronzing, yellowing, or browning of leaves.

Thrips - These insects are also tiny, but shaped like a sliver. The adults have wings that fold up when they're not flying. You'll also see little black flecks (their excrement) scattered on the leaves. Thrips damage to plants looks similar to the damage caused by mites, but there won't be any webs.

Mealybugs - These insects look like little bits of cotton that are greasy or waxy. They are oval in shape, have a segmented body, and are about 1/4 inch long. You'll usually find them hidden between leaves and stems or under leaves.

They move slowly. They make a sticky liquid called honey-dew and also cause leaves to become distorted and spotted.

Scales - These are insects, but they don't really look like insects. They are usually less than 1/8 inch long and look like scales or bumps. They can be a variety of colors: white, black, brown, gray, and tan. Like mealybugs some scales make honeydew.

Aphids - Aphids are insects with winged and un-winged forms. They can be colored, powdery, or woolly. You'll find them on buds, the tips of stems, and under leaves. They're usually less than 1/8 inch long and often make honeydew. They can cause plants to develop curled leaves.

Whitefly - These insects look like tiny moths. They're only about 1/12 inch long. They can make honeydew and often cause the plant to look wilted and faded. The immature whitefly is flat, oval, and legless. Most often you'll find them under leaves.

One of the most important steps you can take to prevent plant problems is to provide them with good growing conditions. Tips for watering indoor plants include using enough water to run out the drainage hole in your pot, only watering when the surface of the soil has become dry, and not allowing the pot to sit in excess water.

Aphids thrive on plants that contain high levels of nitrogen. Adequate, but not excessive, fertilization will make your plants less attractive to aphid.

You can also prevent plant problems by being careful not to allow the pests into your greenhouse. When you buy a new plant, inspect it to make sure that there are no pests on it. Sometimes they are hard to spot, so search carefully. Put new plants in a separate place for a few weeks and inspect again. If you put plants outside, inspect them when you bring them inside. When you repot your plants, commercial sterilized potting soil can be a better option than soil from your garden. If you pick up plants at stores or friends' homes, inspect first to make sure you're not picking up pests that you can then bring home.

Many pests need places to hide in order to thrive. You can minimize pest shelters by removing fallen debris from your pots.

Finally, reflections from aluminum foil disorient flying thrips and aphids. If you regularly have trouble with those insects, try placing a piece of foil around the base of your plant. It will make it more difficult for these pests to land.

Nearly all pest problems are easier to deal with when there are only a few pests. Here are some tips to make finding pests easier:

- Look for pests regularly, every time you feed or water the plants,
- Breathe on the plant and look for pests that react to your breath by moving.
- Put a piece of paper under the branches or leaves of your plant.

Then tap or brush lightly. Pests will drop on the paper. Use a magnifying glass to help identify them.

- If you're looking for whitefly, check all parts of the plant, as well as the rim and the bottom of the pot.

Sticky traps for aphids and thrips are commercially available. Color is used to attract the insects to the trap; yellow attracts aphids, and blue attracts thrips. You can stake the traps into your plants' soil or hang them from larger plants. If you want to make your own traps, a simple technique is to fill a small colored

dish with water and let the insects drown when they are attracted to the color.

Probably the most straightforward way to get rid of pests is just to pick them off the plant; if you don't want to touch them you can use a toothpick or a damp cloth. Or use a cotton swab dipped in rubbing alcohol for aphids or mealybugs.

A vacuum cleaner can be a useful tool for removing insects from greenhouse plants, and a forceful stream of water is an effective way to remove some pests. Try this technique with aphids, whiteflies, mealybugs, thrips, and spider mites.

You can also use sprays of soapy water to control house plant pests. Some plants are damaged by certain soaps. It is recommended that you start by testing your soap on small parts of the plant.

If only a few leaves of your greenhouse plant are infested, you can remove that part of the plant. Then dispose of the infested parts to keep pests from spreading. If your plant is badly infested, it might be time to get rid of the plant. Cuttings of many plants will produce roots, so you can actually keep growing your favorite plants that have to be discarded. Be sure to discard the potting soil and wash the pot thoroughly.

Based on an article by Caroline Cox in the *Journal of Pesticide*.

The First Winter

The first winter in your new greenhouse can be challenging! This is what to expect;

- Slow plant growth or none at all unless you have supplemental lighting.
- Some orchids will spike and bloom to gladden a dreary day.
- Even though this may be a "slow time, it is not a good time to repot any plants unless it is necessary. Wait for new growth in a few months.
- Watch carefully for pest invasions, and take immediate action to stop them.
- Some plants like Lavender, Cineraria, Chrysanthemums, miniature roses, etc., are prone to spider mite attack. Spider mites thrive in dry air, so spray susceptible plants with a fine mist of water, or wash them under the faucet, daily.
- Position cool-growing plants in the cooler section of the greenhouse usually near the floor or farthest from the heat source. Plants that prefer warm temperatures may do better near the ceiling or close to the heat source. The greenhouse can also be sectioned with sheets of plastic to achieve cool and warm areas.
- In northern areas, disconnect automatic ceiling vents so that they won't open when the heat comes on. But do keep interior fans running. Good air circulation is essential. If you have small fans, position them so that air flow is horizontal around the whole interior of the greenhouse.
- In case of a break in the greenhouse glazing, it's a good idea to have some extra sheets of acrylic handy for such an emergency. The acrylic can be taped over the crack.
- A sheet of polyethylene is also handy in an emergency. It can cover plants temporarily in case of a power or heater failure.
- Be sure that your temperature alarm is working.
- Keep the roof of the greenhouse clear of snow. Raising the heat in the greenhouse when snow is predicted may help to melt ice and snow from the roof.

Favorite Winter GH Plants

If there's not much blooming in your greenhouse this winter, by nil means go to your local garden center and pick up a few plants in flower. Some of my favorites are:

Kalenchoe: This little succulent with the flat, rounded, scallop-edged leaves is available with pink, rose, or yellow flowers that last a long time. The plant will re-bloom after a rest-

Primula: A nosegay of flowers in a pot the white, purple, red, pink, or variegated cluster of blooms sits in the midst of bright green leaves. Check to be sure there are more buds underneath the blossoms for a long display. Primulas can be planted outside in the garden in the spring and will re-bloom there each spring.

Winter Jasmine: The scent from a spray of the small white Jasmine flowers is incredible. This vine does well as a hanging plant,

Freesias: Wonderfully accented blooms of white, yellow, lavender, rose, and a combination of rose and yellow hang from a slender arched stem. The leaves are tall and thin. The corns can be saved and regrown another year (just don't leave them in a pot of growing medium into which you put another kind of plant next year, or you will have the same surprise that I did — two different plants growing in the same pot.)

Daffodils: Potted, miniature yellow daffodils in bloom are usually available in garden centers at this time. A cheery reminder that spring is on the way. They can be planted outside when the ground thaws and will naturalize.

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