Q AND A ASK THE EXPERTS

Q: My greenhouse is located in Ohio and is quite small. I've noticed a problem with my petunias regarding shoreflies and/or fungus gnats. The flowers and leaves are healthy looking but around the soil, I've noticed a few of the leaves are almost gel-like. I lifted a few out of the inserts and the roots are half gone.

A: Your observation of the roots is time well spent! Plants with half a root system are under great stress and may not provide enough water or nutrients to sustain the plant. Wet soils will provide extra moisture to the roots but also provide an excellent environment for pests such as fungus gnats, shoreflies, algae and root rots like pythium.

Fungus gnats can be found in and around the soil medium and resting on leaves. The larvae will feed on roots and have been known to travel into the vascular system. Shoreflies tend to be more of a nuisance, feeding on algae and depositing "fly speck" on plant leaves, fly-poo that is.

Both pests are capable of vectoring disease such as pythium, which can quickly devastate plant root systems as well as spread rapidly under wet soil conditions. Early treatment with a fungicide like Terrazole® or Fenstop® will help stop and prevent pythium root rot. There are a number of insecticides (Azatin XL®, Decathlon®, Pylon®) labeled for control of the adults and larvae. Some are insect growth regulators (Adept®) which disrupts the larvae's development into mature adults. These two pests, though small, are one of the toughest and most persistent pests to control. Managing soil moisture, using adulticides, larvaecides and sticky traps are all good steps to controlling them.

Q: What is the best spider mite control program?

A: The key word in the question is program. Depending on the crop, the best spider mite management program could be entirely biological using predatory mites, entirely dependent on applications of miticides, or somewhere in between.

On crops (e.g. some foliage plants) where spider mites are the main pests, biological control programs have been very successful, and few, if any, miticide applications are needed. On other crops that are attacked by many insects, mites and plant diseases, biological control is less successful, and miticide applications are required. The question then becomes which miticides? There are numerous products on the market today that are registered for control of spider mites. There also are spider mite populations that have developed resistance to one or more of these registered products. To further complicate this issue, mite resistance to any product varies with location and often depends on what products have been used the most in that area.

So, for mite control using miticides, the answer to the original question is to use three or four effective mite-control products from different mode of action groups, properly applied, in a rotation or alternation program, according to product label directions. Do not depend on one or two products. Mode of action information can be found in the OHP Chemical Class Chart, as well as on similar charts from other companies. The mode of action group number is also appearing on some product labels. For a current version of the OHP Chemical Class Chart and suggestions on spider mite control programs, see the OHP web site (www.ohp.com).

Q: Water use restrictions are in place in our area. How can we reduce water use and still grow quality crops?

A: Water is a key ingredient in growing a quality crop. Too much will cause root rots and other soil borne diseases. Too little can cause wilted, weak plants that develop poorly, and that are susceptible to insects and mites. For example, in the Southeast a summer of water restrictions have severely hurt the ornamental industry. Growers are growing beautiful crops that landscapers cannot plant as they could not water. Not much you can do there!

The key to successful water use is to use the correct amount. Many greenhouse crops are grown in media other than dirt. The most common contain peat that can become very hydrophobic (water repellent) and growers tend to water it heavily to regain the original wetness after it has become dry. By using a wetting agent like Suffusion* you can re-wet the hydrophobic areas allowing the entire media to participate in the growing of the crop. It also will allow for proper drainage by wetting the dry areas that tend to hold moisture in that cause wet spots or pockets of water that will not drain. This can lead to root problems and disease. Media wetting agents also help with the uniform movement of other soil applied products such as pesticides and fertilizers, again allowing the entire root system to better utilize these treatments.