Pest Management

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Pest Control for Vegetable Transplants

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Many producers grew more vegetable transplants this year as the interest in vegetable gardening increased significantly. A review of pesticide labels shows many of the products labeled for ornamentals are not labeled for vegetables, so growing vegetable transplants can be a challenge.

Growing transplants in a clean, weed-free, disinfected greenhouse separate from ornamentals helps prevent many problems. Here are some tips on the insects and diseases to watch out for, plus options for control. If using biological controls, they are best used preventatively before outbreaks occur. (For information on chemical compatibility with biological control agents, consult the pesticide side effects databases found at www.biobest.be or www.koppert.nl.)

**Aphids.** Monitor for aphids by inspecting the plants as often as you can—at least once a week. Look on the underside of the leaves and along the stems on eggplant, peppers, tomatoes and leafy greens. You can also gently tap the foliage over a white sheet of paper to look for the aphids.

Foxglove, green peach and melon aphids often seem to spontaneously generate. If you are releasing parasitic wasps against aphids, they are very host specific. Aphidius ervi is released as a preventative measure against larger aphids, such as potato or foxglove aphids, while A. colemani is released against melon or green peach aphids. Some biological control companies also offer a mix of different species of parasitic wasps.

Some growers have reported that adding a neem-based IGR (such as Ornazin or Azatin) or insecticidal soap to Beauveria bassiana (Mycotrol O or Botanigard) seems to increase its effectiveness against aphids. Repeated applications are often needed. Systemic insecticides (Safari, Marathon II or 60WP) are also labeled for some vegetable transplants.

**Spider Mites.** Look for characteristic signs of their feeding (light flecking or stippling) on eggplants, beans and tomatoes. Vegetable transplants near hot, dry locations or mite-infested weeds may be the first to show symptoms.

Predatory mites (Phytoseiulus persimilis or Neoseiulus californicus) are commercially available for use against spider mites. Predatory gall midges (Feltiella acarisuga) are particularly useful on hairy-leaved plants such as tomatoes. Adults can fly and locate difficult-to-reach colonies of spider mites in hanging baskets.
Contact insecticides, including horticultural oils and insecticidal soaps, are labeled for spider mites. Spot test for plant damage before large scale treatments. Floramite is labeled for greenhouse tomatoes and Pylon is labeled for certain greenhouse fruiting vegetables.

**Thrips.** Yellow sticky cards, fava bean indicator plants and plant tapping alert you to a thrips infestation. Watch for curled emerging leaves and distorted new growth on peppers, tomatoes and eggplant. Predatory mites (Neoseiulus cucumeris and Amblyseius swirskii) feed upon the first instar thrips larvae. Many of the same materials labeled for aphids are also labeled for thrips. In addition, Pylon is labeled against thrips on greenhouse fruiting vegetables.

**Tospoviruses.** Western flower thrips can spread tospoviruses to tomatoes, peppers and eggplant. Look for stunting, ring spots and black lesions on foliage and stems. (Grower-friendly test kits are available from Agdia, Inc.) If your plants become infected, begin a strict thrips management program. Infected vegetable plants planted into a garden will be stunted and not produce a harvestable crop. Because these viruses are not carried in the seed, keeping vegetable transplants isolated from vegetatively propagated crops helps reduce your risk of acquiring the virus.

**Powdery Mildew.** Powdery mildew is easily recognized by the white talcum-like growth on tomatoes and eggplants, as well as cucurbit crops. Growers who produce cucurbit transplants, as well as verbena, should be especially careful to separate these two crops. The powdery mildew fungus that affects certain cultivars of verbena can also infect squash, cucumber and pumpkin transplants. It’s possible that transplants can become infected when they might not have otherwise, such as when the fruit was beginning to form in the garden.

**Blight and Leaf Spots.** Most blights and leaf spots (except for Botrytis blight) are generally more common after tomato transplants have been planted in the garden. This past season, the exceptionally cool, rainy weather in the Northeast and Mid-Atlantic states helped lead to the late blight epidemic on tomatoes and potatoes.

Late blight can only be carried on live plant tissue. Retailers should help educate their customers to destroy any potato plants that come up from volunteer tubers left in the garden this past season. These infected potato tubers could serve as a source of the disease next season, especially if the weather is cool and wet.

Consider offering more disease-resistant transplants to both new and savvy gardeners next spring. Consult with your seed supplier, look through seed catalogs (codes for disease resistance are usually on their variety descriptions), and check with your local university vegetable specialist.

Mountain Magic is a tomato variety developed at North Carolina State University (available in 2010) with good tolerance to early blight and resistance to late blight. It is an indeterminate cherry tomato that will continue to produce fruit until a killing frost occurs.

For more information on pest management for vegetable bedding plants, see www.nevegetable.org.

Consult and follow pesticide labels for registered uses. To avoid potential phytotoxicity problems, spot test
before widespread use. No discrimination is intended for any products not listed.

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