The Week in Vegetables

While you were partying... (at least I hope you took a bit of time), plants were growing in beautiful summer weather, faster than most diseases and insect pests could keep up with. But of course, the weeds love it too, and I’m sure you all have your special “thorn in your side” weedy crop areas that you want to bring to the top of the priority list, but alas, too many other extra-top priority things to do. It will get done...

Diseases to watch for:

Temperatures between 65 and 75, high humidity, liquid water are perfect for Botrytis on high tunnel tomatoes, and I see more and more of it. This all takes place overnight, when well-watered tomatoes produce guttation droplets on the leaf edges. It’s a really common pathogen, causing a variety of infections. Avoid letting it get very established in the tunnel because it can infect flowers (reducing fruit set) and fruits, causing the “ghost spot” effect of whitish rings, which reduces marketability. An easy way to start with is to remove infected leaves and flower clusters (see picture). Use of a protectant fungicide can further reduce the spread.

Powdery mildew was seen on a large summer squash/zucchini planting this week, and it came on very fast. Conditions have been perfect since it hasn’t been so rainy and we’ve gotten into some real summer humidity. PM spores are thought to come from the nearby south but there seems to be local sources that can overwinter in greenhouses. Your first line of defense should be choosing RESISTANT VARIETIES. The newest varieties are amazing in this way, particularly for cucumbers, so much so that fungicides may be unnecessary for the larger growers. For summer and winter squashes, the resistance is not as outstanding, but still very much worth it to grow them. Fungicides may be needed as well, however. This would come in the form of a preventative type, such as chlorothalonil for conventional growers, or if organic, there are a few options: Potassium bicarbonate (there are a few products), copper octanoate or hydroxide, sulfur, potassium fatty acid (insecticidal) soap, and JMS Stylet oil. Remember that coverage under the leaves is better if you can manage it. Also, once you have a significant amount of PM, it’s there until the crop is done, which is sooner than if you didn’t have it to begin with...

Botrytis (left) on tomato blossoms and sepals on the fruit. Disease often starts on dead flower blossoms and petiole stubs left on plants after leaf trimming. Cut the stubs right up against the main stem to prevent infection. Infected flowers can drop onto lower leaves and cause infection in otherwise healthy leaf tissue.

Powdery mildew (right) on the top surface of a pumpkin leaf. In varieties that have some degree of resistance, you may see lesions on the undersides of lower leaves at first, and then it progresses upwards on the plant and onto the tops of leaves.
Insect pests to watch for:

We are growing some “vegetable amaranth” at the URI, which is eaten in many Latin American, Caribbean, and African countries. You may also be aware that one of our most difficult weeds, Pigweed, is also an amaranth. It seems we have a pest on our amaranth, and it’s someone I’ve seen at another farm this year as well. It’s called the Pigweed Flea Beetle (*Disonycha glabrata*). In fact, I was walking through a patch of ground at the agronomy farm on the URI campus that was grown up with a lot of pigweed and I saw feeding damage all over, and I quickly found one of these critters (see picture). I don’t think all the pigweed flea beetles in the world could eat all of Rhode Island’s pigweed, but it’s nice to fantasize... Anyway, I’ve also seen feeding damage like it on chard, that is, “shot-hole” feeding, only much larger than that perpetrated by brassica and potato flea beetles. In fact, the PFB is the size of a striped cucumber beetle, so it’s giant next to our other pest flea beetles. So naturally, the shot-holes are giant. Where I saw that damage to chard, I was able to quickly find a PFB. Hope this isn’t a new pest... let me know if you observe that kind of damage and you see these kind of beetles.

The adult scarab beetles whose larvae are root-feeding grubs are now out and feeding on foliage. This includes **Japanese Beetles, Asiatic Garden Beetles, and Oriental Beetles**. The first two cause the most damage. They seem to feed indiscriminately on many types of foliage, but basil is a favorite and I’ve seen significant damage in past years. Asiatics feed at night, so if you see damage but never see any culprits, it could be them. For basil, row covers may be the best answer, and though it doesn’t fully protect against downy mildew, it might slow the onslaught of that disease, which by the way, I haven’t heard about yet this year. If you see either Basil downy mildew or Cucurbit downy mildew, please let us know.

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**Pigweed flea beetle (left)**: damage is elongated shotholes, not edge-feeding. Look at pigweed patches to see if there is any damage. **Asiatic garden beetle (right)**: Leaf feeding damage is indiscriminate, with no typical pattern. Their grub stage feeds on many kinds of vegetable roots in May.