

**PEST ALERTS:** See five pages of pest issues below.

--> Need to discuss? Got something you need looked at? URI Extension: 401-874-2967/andy\_radin@uri.edu, hfaubert@uri.edu

## All kinds of issues...

**There are a lot** of potential insect and disease issues out there now, so here is a gallery of what's been seen in the last few weeks, and some information on prevention where possible and treatment when necessary.

### Alliums (Onion, Leek, Shallot, Garlic)

**Onion Thrips.** Given that you are reading this on your computer (phone not recommended), you will be able to zoom in, not only to the scarring damage caused by the onion thrips' "rasping/sucking" mouthparts, but to the tiny orange nymphs down near the growing tip. The damage gets serious when nymphs are out in numbers because there's that many more rasps damaging leaves. If things are going right for your onions, leaves should be fat, green, and large right to the end of July, when lower leaves begin to yellow, and this progresses upwards on the plant until mid-August, when it's about time to pull them out to dry down. The bigger and greener and longer lasting the foliage is into July, the bulkier your onions will be by the end of August. Onion thrips hasten the dying down of the foliage (so does purple blotch and botrytis), which will reduce bulb size. Control of onion thrips is in your best interest. A grower in CT (as of 2016) had virtually eliminated onion thrips from his farm by using silver reflective mulch, as reported by Jude Boucher, former CT IPM specialist. (<http://ipm.uconn.edu/documents/raw2/html/992.php?display=print>). Searching around, I found that while this is a recommended practice, it is not a "silver" bullet... Straw mulch also has some limited efficacy in reducing onion thrips. As for available treatments, only Spinosad has efficacy for organic growers, while the "semisynthetic" Spinetoram (chemically modified Spinosad) is effective for others. A systemic chemical called Spirotetramat is used in the commercial onion producing areas in Orange County, NY.

**Salt Marsh Caterpillar.** This erroneously named (first described feeding on salt marsh grasses outside of Boston but this is rarely a host plant) occasional pest can do some dramatic damage on onions (and brassicas.) It is a member of the family Arctiidae, which





includes the wooly bear caterpillars we see in the fall. (Photo courtesy of Shuresh Ghimire, UConn). They are common and have many host plants. A few find their way into vegetable fields and can cause some real damage. If you are already applying B.t. for control of brassica caterpillars, these will succumb as well. And if you are treating thrips with Spinosad, they will also be controlled.

## Beans

**Potato leafhopper.** Some in New England have noted that PLH arrived later in the spring than usual- that was probably the case here in RI by a few weeks. But now they are causing a lot of hopper burn, mainly on potatoes and beans. On the right is one potato leaf. See if you can find all of the PLH nymphs. If untreated, the field that this leaf came from will be toasted. Like thrips, the more mouths (piercing/sucking mouthparts) feeding means the more damage, in this case, toxic



feeding fluids that are injected into the leaves. See damage on beans, below. However, eggplants suffer a lot of burn damage as well, particularly the Asian varieties.

These can be dramatically slowed-down by PLH. Don't be surprised if you find them causing damage on certain hot pepper varieties (Numex, for instance), Okra, and Roselle (a hibiscus grown for it's flower petals used in tea). PLH produces at least two generations once they arrive in New England but this early summer generation is the worst. Don't let burn get too out of hand. Organic growers can rely on pyrethrum for good control, others have multiple options.





## Report from Middletown

Garman Family Farm, Jim and Michelle Garman

Yesterday morning I was pulling the last of the garlic while Michelle was on the other side of the field getting some kale from under a row cover. From 100 yards away I heard her yell "it didn't look like this two days ago!" And I knew that wasn't a tribute to its magnificence.

That's the way it goes this time of year. Cabbage moths and caterpillars are everywhere, cucumber beetle pressure is high, and if you don't cultivate that bed right now, it's going to disappear. We've been impressed with pyrethrum's ability to control leafhoppers, especially on beans. Surround WP was effective in getting the pumpkins and winter squash to the five-leaf stage. They are on their own now, as they start to sprawl and become impossible to cover with spray. Pumpkins love plastic, irrigation, and fertigation, so we are hoping to beef them up before downy mildew arrives.

Lots of positives, though, so far this season. Our garlic yield was way better than expected, with just about 70% of it grading at No. 1. A frustrating crop - it grows so well in our maritime climate, but we can only get a few serious chefs to buy it. There's good demand for specialty crops - this is our first year with artichokes and they are budding much more quickly than expected. If there was a demand, we would plant an acre of them, because although the vernalization period was tricky, they have had no pests other than a few salt marsh caterpillars that flew in.

We finally had a cool day to get Fall transplants out. We hope everyone's hanging in there and that your accounts are buying lots of produce!



OH Yeah- Beans: Keep an eye out for Mexican Bean Beetle activity... should be in high gear soon.

### Brassicas

Caterpillar pests are mainly what we are looking for now. In my travels, I've seen very little Imported Cabbage Worm damage, and not all that many of the adults, the white butterflies with the spot, flying around. Cross-striped caterpillars don't usually get too abundant until August, while Cabbage Loopers aren't often a problem in RI, though I've seen them badly damaging a large planting of eggplant during the month of September. What we do see now are Diamond-back Moth larvae, which are fairly

inconspicuous until the late stage larvae do damage. B.t. is always effective; good coverage is essential, especially down in the rapidly growing centers- especially cabbage.



No culprits were found on this Chinese cabbage- the damage is old, but very noticeable. Sometimes damage like this is caused by Blister beetles, but in this case, it was most likely slug feeding. Chinese cabbage is definitely slug/snail favorite.



## Cucurbits

**Striped cucumber beetles are very active** and Bacterial wilt is beginning to show in local spots within plantings. Midday wilting of single plants is usually the first sign. These should be pulled if the planting isn't very large: continued feeding by adults can continue to spread the disease around the rest of the patch. Control is possible with pyrethrum for organic growers, and for others, seed treatments are highly effective.

**Squash bugs** are active and laying eggs, though nymphs have not been seen yet. Heavy infestations can be a real problem, though I have rarely seen this in RI (but did in Ulster County, NY 20 years ago).

**Squash vine borer** moth trap catches are through the roof in Southern NH and Northern MA. Well established vines can handle some damage, but young plantings, if attacked, may not fare well. Populations of this native insect tend to be localized, so if you haven't had trouble with them in the past, you may not this year either.

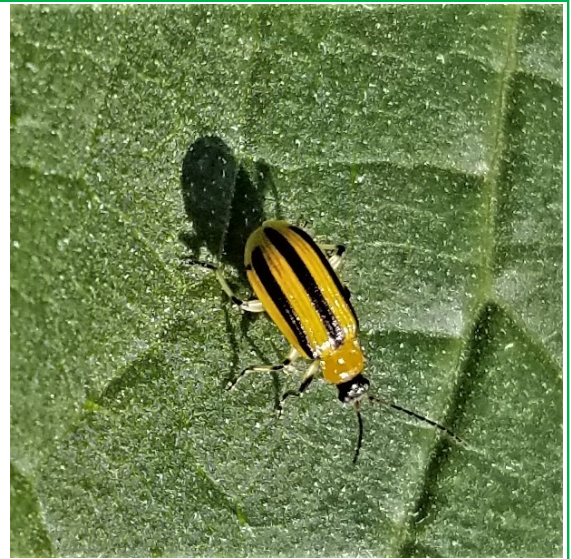
**Powdery mildew** has been reported in CT and MA. If you are growing varieties with less resistance, you might want to apply protectant fungicide. For organic growers, there are a few good options, including JMS Stylet oil and Microthiol disperss (avoid blazing heat when applying this). Chlorothalonil is a good option for others. But coverage of leaf **UNDERSIDES** is important if you are able to do it. Does a drop nozzle assembly exist for backpack sprayers? If not, someone could make a million bucks...



**Eggplant** has already gotten a mention, but it's worth displaying damage of two-spotted spider mites, which attack eggplant regularly, but can also make a mess of squash, cucumber, tomato, and beans. This is a pest whose damage seems to suddenly appear, but the fact is, the mites had been there for a few weeks but their numbers increase exponentially in hot dry conditions. Like thrips, they feed by rasping/sucking, scraping off tiny patches of leaf tissue, and leaving webbing behind. This damage was in a high tunnel, where their populations can really explode. Stylet oil is a

good bet for organic growers or anyone else. **BUT** do not apply in real heat (>upper 80s).

*Verticillium* wilt is common in eggplant and you should expect to see symptoms shortly if you have a history of this problem. This is a disease that you have to live with, and boosting plant nutrition is a way to do it. If you are equipped to fertigate, do it with small doses regularly. Otherwise, side-dress. Very often, the yellowing will be on one side of the main leaf vein only, as in the diseased leaf on the right in this picture.





## Tomato

The big news in tomato this week is the unfortunate appearance of **Tomato Spotted Wilt Virus** on both a producer's farm as well as in my very own research project. It has also been identified on that farm in bell pepper and ground cherry. First described in 1915, it has been reported in over **1000 plant species in 85 families**. Seed transmission is rare; **nine species of thrips are the primary vectors**. The most common thrips species in greenhouses is the Western Flower Thrips, which the URI greenhouses are heavily infested with. The RI growers raised their transplants in rented space in which the owner had long term specimen plants. This from a Cornell fact sheet: "While the virus can be acquired only by the larval stage, transmission is due almost exclusively to



adult thrips. Larvae of *T. tabaci* can acquire the virus within 15 minutes. Larvae cannot transmit the virus immediately, but after a latent (incubation) period of 3-10 days (depending on the vector species), transmission occurs. Once thrips become infective, they can transmit virus for a maximum period of 22-30 days, or for the remainder of their adult lives. Adults do not transmit virus to their progeny. Overlapping stages in the thrips life cycle can account for continuous virus spread." The symptoms of the disease are odd, and plants could seem to be humming right along and then they begin succumbing. The terminal bud usually begins to twist or curl, and in tomato, often turns purplish. At the same time, lower leaves begin showing irregular brown lesions. Once it has progressed, however, there are peculiar ring lesions, sometimes in curlicue patterns.



If your operation also involves growing significant amounts of flowers, vigilance is very important in order to keep thrips populations in control. They can survive on weeds in the greenhouse prior to turning on the furnaces. If you bring in plugs in February, thrips can have a month to build their population before you start vegetable seedlings. Thrips can be successfully managed in the greenhouse using predatory mites.

