UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
EXTENSION

Vegetable Pest Alert

May 27, 2022

Imported cabbageworm butterflies are flying now and eggs are being laid. It is especially important to check cabbage or broccoli plantings as they begin forming heads. Feeding damage can be found on the underside of leaves or in the center of the plant where heads are forming. Look for tiny feeding holes, clustered together. Often it is easier to spot the feeding damage first, and then find the caterpillar.

Imported cabbageworm adult *left* (photo: Dan Ferro), eggs *center* (photo: Utah State Univ.) and caterpillar (photo: S. Ghimire)

Scout fields by checking leaves (top and bottom) on 25 plants across the field. Treat when 35% or more of the young cabbage, broccoli and cauliflower plants (before head formation begins; pre-cupping) are infested. Treat plants between the start of heading and harvest if 20% or more of the plants are infested. The most critical time to scout and apply chemical controls is just prior to head formation. Use a 10% to 15% threshold throughout the season for kale, collards, mustard, and other leafy greens. Bt products XenTari (*Bt aizawai*) and Dipel (*Bt kurstaki*) work well against all caterpillar pests and are OMRI-approved. Use a spreader-sticker to help materials adhere to waxy brassica leaves. For other spray options see https://nevegetable.org/crops/insect-control-3.

Colorado potato beetle (CPB) adults are emerging now from overwintering sites in field edges of last year's eggplant and potato fields. Start scouting, looking for clusters of yellow eggs on the undersides of leaves, to be ready to treat when larvae begin to hatch. CPB eggs look very similar to ladybeetle eggs, although ladybeetle eggs tend to be lighter yellow and more widely spaced within each cluster, so if you see ladybeetles around your potato or eggplant crop while scouting for CPB eggs, keep this in mind.

Photo: Pam Cooper, UConn

CPB adults are very poor flyers and primarily walk from their overwintering sites into new host crops. Because they disperse themselves so poorly, cultural controls like crop rotation and physical barriers including trench traps surrounding fields, early-planted trap crops, and mulching with straw can delay and reduce infestation. See http://nevegetable.org/crops/insect-control-18 for action threshold and management options.

Solanaceous flea beetle feeds primarily on eggplant, tomato, pepper and potato and some weeds including black night. They leave a characteristic small shot hole injury to the leaves. Potatoes, once well established, can withstand considerable feeding damage. Eggplants are vulnerable even at later stages. Treat newly set transplants if they have 2 flea beetles per plant, seedlings 3" to 6" tall if they have greater than 4 beetles per plant, and plants over 6" tall if they have 8 beetles per plant.

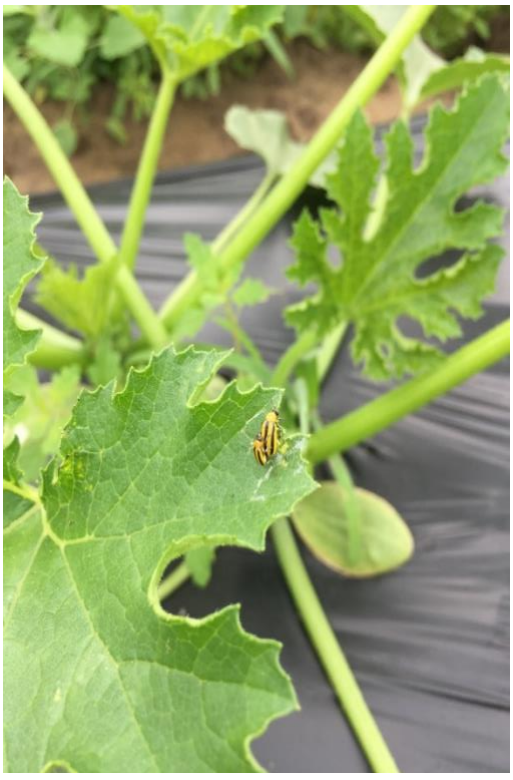
Row cover or exclusion netting can be used to exclude flea beetles early in production, before flowers develop. Spinosad (e.g. Entrust) is the most effective material for organic growers but cannot be applied more than 2x consecutively; pyrethrin (e.g. Pyganic) will provide a quick knockdown of flea beetle for organic growers as well. Other chemical control include pyrethroids (e.g. Azana XL, Baythroid XL, Brigadier, Bifenture, Mustang Maxx, Warrior II), and Admire Pro (soil treatment only). See NEVMG for more spray options.

Onion thrips populations are favored by hot, dry weather. Heavy rain or overhead irrigation can lower populations. Scout plants along field margins where infestations build early, as well as checking across the field. Look closely between the leaf blades to find the light-yellow nymphs or darker adults. Damage may appear as silver lines, white patches, tip dieback, curling and twisting of leaves, slowed growth, reduced bulb size and yields, or if severe enough can result in plant death. Begin applications when damage is first noticed or when there are 3 or more thrips per leaf.

Thrips nymphs on onion leaf (Photo: UMass Extension)

The most effective material for organic growers is spinosad (e.g. Entrust). Apply with insecticidal soap (e.g. M-Pede, at the 1.5% v:v rate) to increase efficacy. Entrust can only be used two times in a row before rotating to a different insecticide class. Neem oil (e.g. Trilogy) and azadirachtin (e.g. Azatin O) may be effective also if applied when populations are still low. Pyrethrin (e.g. Pyganic) can provide knockdown control. See http://nevegetable.org/crops/insect-control-14 for more spray options.

Striped cucumber beetles (SCB) have been reported in our region. Young plants are particularly vulnerable to the feeding damage from SCB, as well as to bacterial wilt, the disease vectored by SCB. Adults overwinter primarily in field edges near last year's crop, with a small proportion remaining in the field. With the onset of warm days (> 50° F), beetles feed on pollen in early-blooming wild plants. High tunnel and greenhouse cucumbers draw beetles first, followed by early field crops.



Striped cucumber beetles (Photo: S. Ghimire)

Cucumber and muskmelon are highly susceptible to bacterial wilt; treat those crops if 1 beetle is found for every 2 plants. Butternut, watermelon, and most pumpkins are less susceptible to bacterial wilt and can tolerate 1-2 beetles per plant. There aren't many bee-friendly options for chemical control, so get populations under control early on to prevent the need to spray during flowering or consider spraying in the evening after bees have stopped foraging. The most effective OMRI-listed material is pyrethrin (e.g. Pyganic). Small plants can also be protected using kaolin clay (e.g. Surround), which needs to be reapplied to protect new growth. See https://nevegetable.org/crops/insect-control-7 for the list of pesticides that can be used to control SCB.

Beet and spinach leafminer larvae are active– scout any uncovered beet, chard, or spinach plantings. The oblong white eggs are laid in neat clusters on the underside of the leaves.

Spinach leafminer injury and larva (photos: S. Ghimire)

The larva (also called maggot) tunnels between the layers of a leaf eating everything but the epidermis. Early damage is a slender, winding ‘mine’, but later these expand and become blotches on the leaves. Inside the mine is a pale, white maggot. The larvae may migrate from leaf to leaf down a row. They become fully grown in just a few weeks and drop into the soil to pupate. The entire life cycle is 30-40 days. There are three to four generations per season.

For organic growers, Spinosad (e.g. Entrust) plus a spreader-sticker to aid in leaf penetration is the best chemical control option. It will be most effective if applied before eggs hatch and larvae enter the leaf. Deep plowing in early spring or fall to destroy infested weeds and plant material can reduce the severity of leafminer outbreaks. Covering susceptible crops with floating row cover to exclude adult flies from laying eggs may also help. Another best practice is thorough harvesting where all leaves are removed, as well as destroying crops at the end of harvest to reduce the egg and larval population. Alternate weedy hosts such as pigweed, lamb’s quarters, plantain, chickweed, and nightshade should be destroyed to reduce overwintering populations.

Precautions when transplanting vegetables into plastic mulch:
When transplanting seedlings into black plastic mulch (polyethylene or biodegradable), you can take some precautions to avoid heat and abrasion injury to the seedlings.

- First make sure planting holes on the mulch is wide enough so the transplant does not touch the edge of the plastic.
- Fill the holes with soil to keeps the plants from leaning over and touching the plastic. This will minimize the potential chimney effect that could burn the plant when hot and sunny days occur shortly after transplanting.
- Placing soil around the transplant will prevent water from puddling around the plant and will reduce the chances of root and crown diseases.
- If an herbicide is applied in pathways that is harmful to the crop planted into the plastic mulch, filling the hole with soil from pathways could be damage or kill the crop. Read the herbicide label before using row middle soil to fill in the planting hole.

This pepper seedling is wilting because the stem is severely burned where it touched the hot plastic mulch (Photo: Richard VanVranken).

In addition to reports from CT farms, it also includes inputs from vegetable specialists from MA, NY, RI, NH, VT, and ME. Your contribution to next vegetable pest alert is welcome. Pest observations can be submitted to shuresh.ghimire@uconn.edu.

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