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NEW HAMPSHIRE VEGETABLE, BERRY & TREE FRUIT NEWSLETTER

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ROWCOVERS TO CONTROL SPRING INSECTS

Early season insect feeding can stress or kill young vegetable seedlings – flea beetles and cucumber beetles are widespread and cause problems for many crops. Floating rowcovers can greatly reduce damage by these and other insect pests, especially when used with effective weed control, trap cropping & chemical options. Medium or heavier weight covers can also provide some frost protection and stimulate growth by increasing temperatures. Spunbonded polyester or polypropylene rowcovers such as *Reemay* or *Typar* are widely available in a range of sizes.

Flea beetles include several species. Most are small (1/16") dark brown or black shiny beetles that overwinter as adults, and emerge in very early spring. They feed on most vegetable crops - brassicas (broccoli, mustard, kale, cabbage), cucurbits (melon, cucumber), solanaceae (eggplant, potato), and others…corn, grape & spinach. Feeding produces large holes in leaves, and can cause complete defoliation. New brassica transplants are especially vulnerable. Radish and giant mustard are preferred, and have been effective as trap crops to protect less-preferred crops such as broccoli.

Cucumber beetles both overwinter as adults and can migrate from Southern states. Both striped and spotted cucumber beetles commonly feed on cucurbit crops (melon, cucumber, squash & pumpkin). They start feeding as soon as the crops germinate, and can defoliate seedlings quickly. Because they also vector bacterial wilt, it's important to minimize feeding for as long as possible. Blue Hubbard squash is a preferred host, and has been shown to be an effective trap crop.

A few things to keep in mind:

- Apply rowcovers early – as you direct seed, or immediately after transplanting. Leave enough room for the plants to grow for as long as you intend to leave the covers on! Make sure to seal/bury edges well to prevent insects from entering.
- For cucurbits, make sure to remove rowcovers at bloom to allow pollination
- For some crops (e.g. pepper, tomato), you may need a support structure such as hoops to protect the growing points from abrasion by the rowcover.
- Remove rowcovers from peppers & tomatoes at bloom to keep high temperatures under rowcovers from reducing fruit set.
- Rowcovers will also afford some protection against aphids or leafhoppers, and therefore also against viruses vectored by these insects.
- Rowcovers provide a great environment for weeds as well as crops; many growers use them in conjunction with weed-suppressing mulches for this reason.

MANAGING FIRE BLIGHT

Despite the destructive potential of fire blight, it is usually sporadic in its occurrence. The disease may cause minimal damage in an area for several years, then 'suddenly' become more serious in subsequent growing seasons. In the last two years, blight fire strikes have been increasing in incidence in several orchards in NH. Effective management of fire blight requires reducing the initial inoculum, preventing establishment of the pathogen, and reducing host susceptibility to infection.

Removal of cankers during winter pruning is critical. Excessive vegetative growth increases host susceptibility to fire blight. Orchards should be pruned yearly to avoid having to make larger cuts that encourage the development of highly susceptible suckers.

Early season copper sprays reduce primary inoculum in the orchard, and pruning out early season infections after bloom will reduce secondary inoculum available for shoot infection.

Although applications of antibiotics are effective in preventing blossom infection, the timing is critical. Antibiotics must be applied precisely to coincide with fire blight infection periods. Several models, such as those used by the Maryblyt and Cougar Blight software, can predict the occurrence of blossom infection periods. In general, antibiotic applications are recommended during bloom when weather has been relatively warm, and there is a high probability of rain and temperatures greater than 65 F during the next 24 hours. Antibiotics should not be used to control shoot infection because they have limited efficacy and increase the risk of the fire blight bacteria developing resistance to the antibiotic. However, application of antibiotics is recommended following a hailstorm in orchards with fire blight infections.

Based upon: Norelli, J.L. Nov. 2004 presentation

Plant Diagnostic Lab

Submitted by Cheryl Smith

As the season gets underway, remember that the UNH Plant Diagnostic Lab can help diagnose problems. Samples of sick plants can be sent or delivered to the UNH-PDL for problem diagnosis.

Hints for collecting & submitting samples: Avoid mailing samples at times when they will remain in the mail over weekends (mail no later in the week than Wednesday) or holidays. All packages should be marked 'hand cancel'. Ideally, samples should include healthy, moderate, and advanced/severe examples of the problem.

Whole plants: Small plants should be dug, not pulled, from the soil. Shake the excess soil from the roots and wrap the root ball in a plastic bag. A second plastic bag with holes punched in it may be loosely placed over the foliage to reduce drying. Do **not** water the plants before submitting. Place the plants in a box and pack securely with newspaper.

Leaves: Collect leaves when the foliage is dry. Press the leaves between two sheets of DRY paper or paper towels and then between two pieces of cardboard or stiff paper.

Roots, Fruits, Vegetables, Tubers, etc.: Select samples that are in the early stages of disease or decay. (severely rotted specimens cannot be diagnosed). Wrap the sample in DRY paper towels and enclose in an 'unzipped' plastic bag. Pack securely with newspaper in a crush-proof box. It is best to hand-deliver these samples directly to the UNH-PDL.

Twigs, Branches & Stems: Select samples to include the 'transition zone'. This includes the area between the affected area of the branch and the healthy area of the branch. Wrap the cut end of the branches or twigs in a moist paper towel then follow the paper towel with a plastic bag.

Please provide as much information as possible about the sample & the problem.

- What is the host plant?
- When was the plant planted/transplanted?
- What is the problem? Describe the symptoms.
- When was the problem first noticed?
- What pesticides and/or fertilizers were used on or near the plant (fungicides, insecticides, herbicides, fertilizers)?

Mail samples to: Plant Diagnostic Lab, Plant Biology Dept., G37 Spaulding Hall, UNH, Durham, NH 03824. Each completed diagnosis is returned with the identification of the causal agent and information about management of the disease, pest or disorder.

Digital Sample Submittal –UNHCE County Educators can take photos with a Nikon digital camera. This capability may expedite diagnosis and can eliminate the need to send a sample. Please contact your UNHCE County Educator for this service.

Fees: There is a $15.00 charge for samples (including digital ones!) submitted to the UNH-PDL. A sample is one or several specimens of a single plant species (several tomato plants would be one sample; one tomato and one pepper plant would be two samples). All samples need to be accompanied by a Disease Identification form (available at UNHCE county offices, on the web at http://ceinfo.unh.edu/Agric/AGPDTS/PDform.pdf, or by calling 862-3200).

Early Season Strawberry Diseases

In Alan Eaton's NH IPM Newsletter, he mentions that it's time to start checking for tarnished plant bugs in strawberries. What about diseases?

Botrytis fruit rot (gray mold) infections often begin at early bloom. Early infections are brown firm spots on

unripe berries, but when berries ripen, these become powdery gray-brown masses of spores. Spring applications of nitrogen increase the likelihood of disease, as do poor air circulation.

Two fungicide applications - one at early bloom and one 10 days later – should provide good control. Elevate (fenhexamid) or Topsin-M (thiophanate-methyl) should be combined *with* Captan or Thiram to prevent resistance development, and rotate to avoid applying either one more than twice. Captan or Switch (cyprodinil/fludioxinil) can also be used on their own. Trilogy is an organically acceptable fungicide, but it is not currently registered in NH and it's efficacy compared with the other options is not known.

Anthracnose infections start on immature or ripe fruits as tan spots, which then become black and sunken lesions. Warm, wet weather favors this disease. It is spread through splashing rain or irrigation, so mulching will minimize spread. Rotation away from ground that has had previously had anthracnose is the best option. Proactive application of a fungicide like Captan, Thiram, Cabrio (pyraclostrobin), or Abound/Quadris (azoxystrobin) will provide limited control, but won't stop an epidemic. **Note –** Abound/Quadris is *very phytotoxic* to Macintosh apples and their relatives!

Seed Corn Maggot

Submitted by Alan Eaton

Will you have a seed corn maggot problem this year? A major deciding factor is the weather. Seed corn maggot attacks germinating seeds of many crops, including corn, beans, peas, melon, squash, even cabbage, beets and radish. Cool, damp weather is ideal for them. Soils with high organic matter content are more prone to the problem, especially if manure was recently applied. If you want to lower the risk of having this in direct-seeded crops, avoid planting early in soils with high OM content, or in those where you recently applied manure. Plant at the appropriate depth, so the seed sprouts quickly. For early plantings, select light soils, and consider shallow planting depth. Treated seed can help. There are a few situations where an insecticide treatment at planting may be used. One example is phorate, used on beans. There are several choices for sweet corn. In some cases, seed is available that is treated with an insecticide such as imidacloprid (Gaucho) or thiamethoxam (Cruiser). Please think of the cultural methods I described as your first line of defense.

Upcoming NH Twilight Meetings

The first statewide Twilight Meeting of 2005 will be held on **June 16th in Bradford** at Doug and Carol Troy's Stoneridge Farm. The Troys farm approximately 23 acres. Certified organic flowers, small fruit (strawberry and raspberry) and vegetables are grown on 9 acres. The farm also includes a newly established apple orchard and produces certified organic maple syrup. Topics to be covered include scouting IPM, fertility management, and marketing issues for diversified new farms. Contact Sadie Puglisi in Merrimack County at (603)225-5505 for more information.

- Tues. Jun 7, **Management of sweet corn insects & vertebrate pests**. Brentwood, NH. Contact Nada Haddad (603) 679-5616. **V**
- Wed. Jun. 15, **High Hopes Orchard Twilight Meeting**. Westmoreland, MA. Contact Carl Majewski (603)352-4550. **TF**
- Thurs. Jun.16, **Stoneridge Farm Twilight Meeting**. Bradford, NH. Contact Sadie Puglisi (603)225-5505.**V, SF, F, O, TF**
- Early July (final date TBA), **Sherman Farm Twilight Meeting**. E. Conway, NH. Contact Tina Savage (603)539-3331. **V, F, SF**
- Tues. Jul. 26, **Green Wagon Farm Twilight Meeting**. Keene, NH. Contact Carl Majewski (603)352-4550. **V, SF**
- Tues. Aug.16, **UNH Horticultural Farm Twilight Meeting**. Durham, NH. Contact Cheryl Estabrooke (603) 862-3200. **V, SF, F**

Meeting topics:
F = flower, O = certified organic, SF = small fruit, TF = tree fruit, V = vegetable

Other Upcoming Events

- Wed. Jun.15, **Weston Farm Twilight Meeting**. Fryeburg ME. Contact Mark Hutton (207) 933-2100 or visit http://www.westonsfarm.com/.
- Thurs-Sun Aug.11-14, **NOFA (Northeast Organic Farming Association) Summer Conference**, Amherst, MA. Phone (978)355-2853 or email nofa@nofamass.org.

This newsletter is a cooperative effort of the Vegetable, Small Fruit, Tree Fruit, and Sustainable Agriculture Specialists and Extension Educators at the University of New Hampshire. It is published monthly throughout the growing season. Its purpose is to keep you updated on issues and research relevant to production of vegetable and fruit crops in NH.

Comments and questions are welcome. Address corrections, additions and deletions should be faxed to (603)862-2717, emailed to becky.grube@unh.edu, or phoned in to Cheryl Estabrooke at (603)862-3200.

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