



NEW HAMPSHIRE VEGETABLE, BERRY & TREE FRUIT NEWSLETTER

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March 2007

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PERIMETER TRAP CROPPING FOR PEPPER MAGGOT

In the May 2006 issue of this newsletter, I published an article describing the basic concept of perimeter trap cropping (PTC) to control insect pests in vegetables. To recap, PTC entails planting a more attractive crop to surround the main crop that you want to protect, and controlling insects in that attractive ‘trap’ crop before they reach the main crop. I had mentioned that PTC is very effective for some crop-pest combinations, but not for all. So... why am I bringing all of this up again?

One of the pests for which PTC is very effective is the pepper maggot. Pepper maggots haven’t historically been a problem in New Hampshire, preferring the warmth of Southern New England. But last summer, we confirmed the existence of pepper maggots in Rockingham county, and had an unconfirmed sighting in Coos county. As a result, it is probably a good idea to start keeping an eye out for the pepper maggot, particularly if you live in the warmer parts of the state.

Jude Boucher, University of Connecticut’s Vegetable IPM Coordinator and Specialist, is quite possibly the world authority on pepper maggot management. Jude spoke at the NH Vegetable & Berry Growers’ Association Meeting on March 10 about the work he has done on CT farms using PTC to manage this pest. To briefly summarize what we learned about the pepper maggot:

- The pepper maggot has one generation per year. Adult flies emerge in July over a 10-12 day period and fly for 3-8 weeks. They lay eggs (producing scars called stings) on the fruit. The eggs hatch 10-12 days later, producing maggots in the fruit.
- When not laying eggs in the pepper fruit, pepper maggots hang out in trees adjacent to the fields. They can be trapped using pheromone traps, but the traps need to be placed 20 feet high in maple trees bordering the fields in order to be effective. (This is a hassle).
- Pepper maggot flies strongly prefer hot cherry (e.g. Cherry Bomb) type peppers over other varieties. In general, they prefer blocky, bell-shaped peppers over tapered ones.
- There are not many insecticides that control pepper maggots. Orthene and dimethoate, both systemic materials, work; but spinosad, neem, and malathion do not.
- Visual monitoring for the presence of stings on pepper fruit is a good indicator that flies are also present. Any insecticide sprays should be timed to start 1 week after the first stings are noticed, and coverage should be maintained for 3 weeks after that.
- Based on Jude’s on-farm work, a single row of Cherry Bomb peppers surrounding a pepper crop field is an effective trap crop. To be effective for more than one year, the trap crop must be monitored for pepper maggot stings, and once stings are observed, the trap crop must be treated with insecticides. Otherwise, PTC will give good control the first year, but the maggots will overwinter and PTC won’t work a second year. The good news is that the cash crop itself does not need to be treated.

Since we don't have a history of pepper maggot pressure in the state, full-scale perimeter trap cropping for pepper maggot is probably not warranted. However, planting a few Cherry Bomb peppers, evenly spaced around the perimeter of your pepper planting (especially on the side of the field bordering trees), may help you focus your monitoring efforts. If and when you do see stings on the hot peppers, you will have time to confirm the diagnosis and still manage the pest in your crop.

George Hamilton and Alan Eaton will be using pheromone traps to monitor for pepper maggot across Southern NH this summer. We also plan to include some Cherry Bomb peppers on the perimeters of those plantings as indicator plants. I will also be using some in my research plots in Durham. Stay tuned to this newsletter - we will keep you posted as the season progresses.

If you would like more information about the pepper maggot, an excellent reference is the 'Northeast Pepper Integrated Pest Management Manual', written in 2001 by Jude Boucher and Richard Ashley. It can be ordered from the UConn bookstore website at <http://www.hort.uconn.edu/IPM/veg/htms/pprmanl.htm>.

OF POMES AND STONES: LATE WINTER THOUGHTS - BY BILL LORD

Pruning apples has been a chore so far this season. The warm December got us off to a late start and cold temperatures combined with ice have not helped. If time is short, concentrate on the important cuts. Remove those more aggressive branches in treetops to keep tops narrow and limit shading of lower limbs. In lower portions of the tree, make the few larger cuts that keep the tree open and facilitate harvest, mowing and weed management. Summer prune in early August to clean up smaller branches and suckers to finish the job.

Deer damage so far this winter appears to be light. The temperate temperatures of fall and early winter coupled with lower than normal snow levels have no doubt helped, but another key factor is protection being afforded by superior fencing. Late winter is a great time to double check the integrity of the fence, making sure it has not been damaged by fallen trees and branches before deer move in when things open up. Deer only need a 10-inch or so hole (or gap under the bottom of the fence) to get in, so good fence maintenance is essential.

And while speaking of fixing things, early spring is a great time to repair or replace failing tree stakes or trellis. If you are using drip irrigation, setting a support wire at 4 inches or so above ground will likely improve irrigation system performance (plugged emitters, ruptures, etc are easily seen and repaired). This will also help tie the system together but does mean you need to be careful with equipment use under tree. Trellis wire tightening is generally about all that is needed but when a top wire/individual tree stake system is being used, stake/wire ties are often in need of tightening or replacement by the time trees start bearing. Spring is really the only practical time to get this job done.

At least a few new plantings are going in this spring and good early-life management is essential to making these pay. Hopefully, you have prepared the site with a cover-cropping program. The keys to getting these new trees off to a good start include:

- Plant early. Plant as soon as the soil is ready to maximize first year growth. Set graft unions 2 inches above ground.
- Support trees. Ideally, trees should be supported from the day of planting. If a single wire trellis with support stakes is planned, the support stakes should be planted with the tree and trees tied to their stakes immediately.
- Prune. If needed, make corrective cuts to eliminate leader competition. Unless they are a problem, other feathers should be left to maximize leaf surface that will fuel root and shoot growth.
- Get the drip system up and running. Soon.
- Fertilize. If the soil is properly prepared, no fertilizer is usually needed. If soil has not been prepped, apply up to 0.1 lb actual N per tree.
- Control weeds. Perfectly or at least very well.

As for spacings, if M.26 is the rootstock used for new apple planting, I recommend an 8 x 16 spacing. If soils are rich and/or if vigorous cultivars such as Pioneer or Gala are being planted, a wider spacing may be needed. If Bud9 or M9 is the rootstock of choice, a 7 x 14 spacing will generally work well. For peaches and nectarines, I suggest 12 x 20 or 15 x 20.

GROWER RESOURCES

The following guides and manuals are excellent references for commercial growers. Many of you already own copies, but for those who don't, before the growing season starts might be a good time to start perusing some new references. Ordering information is below.

2006-2007 New England Vegetable Management Guide: \$10.00. This guide is also online at <http://www.nevegetable.org>. The free web version was made possible by grants from the Environmental Protection Agency to the NEEVBGA, UMass Extension, and all the Vegetable Extension programs of New England. UNHCE is out of copies. To get the 2006-7 edition, purchase directly from the UMass Extension Bookstore at: <http://umassoutreachbookstore.com/catalog/> or via phone at (413) 545-2717. Note that the 2008-2009 edition will be ready in Fall 2007, and we will have plenty on hand once the new version comes out.

2006-2007 New England Small Fruit Pest Management Guide: This edition has the latest information about recommended pest control methods and product registrations for New England. Cost is \$10 plus shipping and handling. Purchase by contacting Sonia Schloemann, UMass Extension Small Fruit Specialist via e-mail <sgs@umext.umass.edu> or phone (413)545-4347.

2007-2008 New England Greenhouse Floriculture Guide: The cost is \$25.00 and growers can order it from University of Massachusetts. To order, write to: NE Floriculture Guide, UMass Cranberry Station, PO Box 569, E. Wareham, MA 02538. Include a check for \$25 payable to University of Massachusetts. Include your Name and Mailing address.

Tree Fruit Field Guide to Insect, Mite and Disease Pests and Natural Enemies of Eastern North America was published at Cornell in October, 2006 (NRAES-169). 230 pages, many actual size color photos of tree fruit pests. Purchase from NRAES for \$32 plus shipping, at <http://www.nraes.org> or (607) 255-7654.

Resource Guide for Organic Insect and Disease Management was published at by the NY State Agricultural Experiment Station in 2005. Great source of information compiled about common organic pest control materials (neem, insecticidal soap, Bt, etcetera). The whole thing is free and available online, at <http://www.nysaes.cornell.edu/pp/resourceguide/>. If you want a hard copy, Becky Grube has a few copies left, available for \$15; otherwise you can purchase directly from the NYSAES at <http://www/nysaes/cornell.edu>.

A NEW ENGLAND TREE FRUIT GUIDE?

The fact that we have fewer tree fruit extension and research specialists in New England have made it difficult to update and reprint the New England Apple Pest Management Guide. This year, we are trying something new. We are cooperating with colleagues at Cornell to put out a New England version of their tree fruit guide.

Hard copies should become available for sale this spring. We'll evaluate this effort (and ask your opinion, too) before deciding whether we'll continue with this method in future years. We don't know about the final cost or purchasing details yet, but we will inform you as soon as we know.

Alan Eaton's *Fabulous* Fruit Pest Updates

Alan Eaton, UNH Cooperative Extension IPM Specialist, publishes a newsletter that specifically focuses on insect pests, mostly of tree fruit. He also has a phone hotline. Both of these are designed to give very timely information about exactly what fruits and fruit pests are doing throughout the growing season. Unlike this newsletter, Alan's is published every two weeks until mid-June, then switches to monthly for July and August.

This year, the IPM newsletter will be 100% electronic. New issues and backissues will be posted online at <http://extension.unh.edu/Agric/AGPMP/IPMNews.htm>. If you would like an email reminder when each issue comes out, you can send Suzanne Hebert your email address. Make sure to specify that this is for the IPM NEWSLETTER (Suzanne deals with other newsletters, too). You can reach Suzanne by mail (G28 Spaulding Hall, 38 College Rd, Durham, NH 03824), telephone 862-3200 or email suzanne.hebert@unh.edu.

The IPM telephone hotline number is still 862-3763. Alan will do them weekly, starting Tuesday April 3rd and running until early September. As usual, this will cover FRUIT pest management and related upcoming events. Messages will usually be 3 minutes long. It runs continuously, so why not call at a time of day when the rates are low for you?

UPCOMING MEETINGS AND EVENTS

Mon. Apr 9. Peach Pruning Demo. Carter Hill Orchards, Concord, NH. 5-7pm.
Contact Sadie Puglisi, (603)225-5505. **TF**.

Sat. Apr 7. Fruit Tree Pruning Demo. Butternut Farm, Farmington, NH.
9:30am-12:30pm. Contact Geoffrey Njue. (603-749-4445. **TF, PAT**.

Wed. Apr 11. Tree Fruit Growers' Twilight Meeting. Meadow Ledge Farm, Loudon, NH. 5:30-8pm. Contact: George Hamilton, (603) 641-6060. **TF, PAT**.

Thurs. Apr 12. Vegetable Growers Meeting – Managing Vegetable Insect Pests. Goffstown, NH. 6-8pm. Will cover identification and management of pepper maggot, squash borer, and European corn borer, and a review of the 2006 Hillsborough county sweet corn insect monitoring program. Contact: George Hamilton, (603) 641-6060. **V, PAT**.

Sat. Apr 14. Grape Pruning & Disease Management Workshop. Jewell Towne Vineyards, South Hampton, NH. 9:30-noon. Contact Peter Oldak, (603)394-0600. **SF, PAT**.

Thurs. Apr 26. NH Giant Pumpkin Growers Association. Demers Garden Center, Manchester, NH. 6:30-8:30pm. The meeting will feature backpack spray calibration, pesticide application safety, and pesticide application math. Contact: George Hamilton, (603) 641-6060. For more information about the NH Giant Pumpkin Growers' Association, contact Rober Demers at (603)625-8298. **V, PAT**.

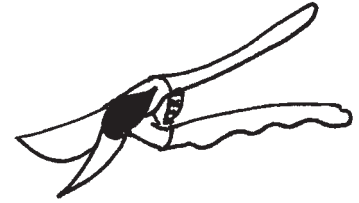
Wed. May 16. Tree Fruit Growers' Twilight Meeting. Brookdale Fruit Farm, Hollis, NH. 5:30-8pm. Sponsored by the NH Fruit Growers Association. Topics will include pest management, orchard management techniques, and apple thinning options. Contact: George Hamilton, (603) 641-6060. **TF, PAT**.

Fri. June 1. The Whys and Hows of using Drip Irrigation – for Vegetable and Fruit Growers. Brookdale Fruit Farm, Hollis, NH. 5:30-8pm. Review drip irrigation options and strategies. Trevor Hardy from Brookdale will give a hands-on demonstration of setting up a drip irrigation system. Contact: George Hamilton, (603) 641-6060. **AC**.

Wed. June 6. Fruit and Vegetable Twilight Meeting. McKenzie's Farm, Milton, NH. Jock and Annie McKenzie grow greenhouse tomatoes, strawberries, raspberries, and apples. We will tour the farm and learn about how they produce and market their crops. UNHCE specialists will be on hand to answer questions. Contact: Geoffrey Njue, (603) 749-4445. **SF, V, PAT**.

Mon. July 23. Vegetable and Fruit Growers Twilight Meeting. Edgewater Farm, Plainfield, NH. Pooh and Anne Sprague operate a highly diversified farm featuring bedding plants, strawberries, blueberries, mixed field vegetables, and greenhouse tomatoes. We will tour the farm and learn about how they produce and market their crops. UNHCE specialists will be on hand to answer questions. Contact: Seth Wilner, (603) 863-9200. **SF, V, PAT**.

Meeting topics: F = flower, O = certified organic, SF = small fruit, TF = tree fruit, V = vegetable, AC = all crops. PAT = pesticide applicator recertification credits available.



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