UMASS EXTENSION

VEGETABLE IPM MESSAGE

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CROP CONDITIONS

For Massachusetts last week, temperatures averaged 6 degrees below normal with night temperatures down to 22-28 F in many areas. Frost damage occurred in early bare ground corn and early strawberries. Rainfall ranged from about 1 to 2 inches for the week and helped to replenish surface soil moisture. Windy conditions caused some fields to dry out again and caused stress and wind damage to seedlings and asparagus spears. Asparagus harvest is underway in earnest now, after an early growth spurt in the April heat wave that followed by frost damage and a cold period that brought growth to a halt for one to two weeks.

Early season beetles (flea beetle, asparagus beetle) and flies (onion and cabbage maggot fly) are active. Given the warm winter, one can expect a high survival rate for the over-wintering stages of insect pests.

NEW ENGLAND VEGETABLE AND BERRY GROWERS ASSOCIATION: COST SHARING PROGRAM FOR FARM ADVERTISING

The New England Vegetable and Berry Growers Association has received a $15,000 advertising grant from the Massachusetts Department of Food and Agriculture as part of a Specialty Crops grant program from the USDA. Advertising cost sharing of 50% will be provided with a maximum of $500 per grower for newspaper ads placed from June through October.

Applicants must be Regular members of the NEV&BGA from Massachusetts. Ads must feature the "Massachusetts Grown and Fresher" logo on at least 20% of the ad space and must be for Massachusetts-grown fruits or vegetables.

For further information on the program or for an application to join the NEV&BGA contact NEV&BGA, 233 Union St., East Bridgewater MA 02333, or phone (508) 378-2546.

--Dominic Marini, Secretary, NEVBGA

TWILIGHT MEETING IN VERMONT: WOOD'S MARKET GARDEN, BRANDON

WEDNESDAY MAY 22, 5-7 PM

When Bob and Sally Wood retired from Woods Market Garden two years ago, their long-established farm was purchased by Jon Satz, with help from the Vermont Land Trust. Jon has built on the farm's reputation for high quality and diversity. He's put up 6 new greenhouses, expanded the farm stand, and converted to organic production methods. There are 25 acres under cultivation, including 2 acres of strawberries, and 10 acres of sweet corn. The greenhouses produce bedding plants, ornamentals and greenhouse tomatoes, and the farm stand also features a variety of local products. Among the many innovations on this farm, Jon will show us his technique for transplanting corn, and the tool he uses to roll up row cover that helps it last for several years. He will also share his experience with renovating the 'annual hill' strawberry system.

Note: Jon Satz lived and farmed and had many friends in western Massachusetts before he found this great opportunity to farm in the 'north country'. Here's a chance to see what he's created in central, western Vermont! Figure about two hours drive from Greenfield, MA. **Directions**: the farm is on

Route 7, 1½ miles south of Brandon and 15 miles north of Rutland. For more information contact Vern Grubinger at 802-257-7967.

ASPARAGUS BEETLES

Common asparagus beetles are active in asparagus fields at this time. The spotted asparagus beetle tends to become active somewhat later in the spring. These two beetles are closely related and have similar life cycles but it is the common asparagus beetle that is most damaging to the cut spears.

Common asparagus beetle (*Crioceris asparigi*) is blue-black, shiny, smooth and about 6 to 9 mm (1/4 inch) long, with three large yellow, squarish spots with red margins along each wing cover. (**see photo**). Eggs are black, laid standing on end in rows along the spears. Larvae are wrinkled, plump, hump-backed, and dull gray with black head and legs. They grow up to 1/3 inch.

Spotted asparagus beetle (*Crioceris duodecimpunctata*) is reddish orange or tan, with six black spots on each wing cover (hence its other name, 12-spotted asparagus beetle). Eggs are greenish, glued singly on their sides to leaves. Eggs are laid on fronds, not on spears. Larvae are similar to those described above, but are orange colored, and feed primarily on berries. Both species of beetles feed only on asparagus.

An egg of the common aparagus beetle, glued to the bud.

Winter habitat: Both species spend the winter as adult beetles. Sheltered sites such as under bark or in the stems of old plants are preferred. Some burrow into the soil. Thus they spend the winter in field borders, or within the asparagus planting itself.

Life cycle: Beetles feed as soon as they become active, and begin laying eggs after several days of feeding. Eggs hatch in 3 to 8 days depending on temperature. Larvae feed for 10 to 14 days, molt four times, then crawl into the soil to form chambers in which they spin cocoons and pupate. After 5 to 10 days, new adults emerge. There are probably two generations in this part of New England.

Scouting: At this time in the season, look for adult beetles, for feeding damage and for eggs laid on spears. Michigan State recommends a treatment threshold of 5-10% of the plants infested or 1-2% of the spears with eggs or damage.

Cultural and biological controls. Overwintering populations may be reduced if last year's fronds and stalks are disked lightly or burned in the fall. Maintaining a clean environment in the fall will force beetles to seek shelter outside the field or burrow in the soil, where many predators reside.

There are several beneficial insects that attack the asparagus beetle, including a tiny parasitic wasp (*Tetrastichus asparagi*) that attacks the egg stage. It kills eggs by feeding on them and by laying its own eggs, which hatch and grow inside the beetle eggs. Providing a nearby nectar source such as umbelliferous flowers for the wasps may increase their chances of survival, but until we can keep economic damage down with less toxic insecticides this may be futile. However, using well-timed applications based on scouting could make a difference in the survival of natural enemies.

Chemcial control. Scout fields regularly and apply an insecticide as soon as beetles become active or reach damaging levels (see *2002-2003 New England Vegetable Management Guide* for recommended materials). Organic growers have the usual options for difficult-to-control beetles: tough it out; or use rotenone or pyrethrin (Pyganic Crop Protectant is allowable though difficult to get). When harvesting, pick the field clean to reduce the number of stems where eggs will survive long enough to hatch and grow up into summer-generation beetles. All insecticides listed in the Guide have a one day to harvest interval. Apply immediately after picking to allow harvest the following day.

And excellent color photo can be found on the web at: http://entweb.clemson.edu/cuentres/cesheets/veg/ce106.htm

CRUCIFERS AND ONIONS

The heat wave in April appears to have encouraged early emergence of maggot flies. Cabbage maggot fly is active and laying eggs. Onion maggots were reported in early onion seedlings last week. **Scout fields for cabbage root maggot eggs**, especially on transplants.

Flies spend the winter as small brown pupae in the soil. Adults emerge in spring and seek out crucifer plants to lay eggs at the base of the stem. Adults can travel considerable distance in search of host plants (1/2 to 1 mile). Onion growers should also watch for root maggot activity at this time.

Cabbage root maggot flies are smaller and more delicate than a housefly, and can often be seen moving from plant to plant in early crucifers. To monitor for adult flies, use a flat water-pan trap painted bright yellow (Federal Safety Yellow), placed on the ground in the field. These can be made from any sturdy plastic dish, or purchased. Add a drop of soap to break the surface tension. Flies are attracted to the yellow color and to the moisture. Yellow sticky traps can also be used – these are placed vertically on stakes, near the soil. Check traps twice weekly. This will tell you when the flight peaks, and when it declines. Typically, flight declines after mid-May and many late May plantings do not need a soil drench.

Monitoring for eggs is the most critical. To check your field for eggs, look for the 1/8-inch long, torpedo-shaped white eggs that are laid along the stem, or on the soil next to the stem of young transplants. Often eggs are laid in neat rows, or inserted into the soil. They may be under a small clod of dirt near the stem. A pencil point helps stir the soil to look for them. Check 20-40 plants in the field, in groups of 2-4 plants. If you find more than an average of 1 egg/stem, it is likely to be a damaging population and a banded soil drench is recommended. Eggs may be more abundant in wetter areas of the field. Target the base of the plants and use at least 200 gallons of water per acre to help the insecticide penetrate to the root zone. Now that Diazinon is no longer labeled for this use, chlorpyrifos (Lorsban) is the only option. This material does not move readily in soil after the application is made, so it is important to provide adequate water so that the material penetrates several inches into the soil when it is applied. Under dry soil conditions, additional water may be needed to penetrate the soil.

Re-scout the field five to 7 days after application to note whether eggs have hatched; if there are few maggots active, then the application was effective. Because the materials are quite persistent in the soil, a second application is usually not needed.

By scouting each planting (which takes about 15 minutes) you can achieve the best timing for a soil drench. You'll be able to apply it when it is needed, and you can save the cost of application when it is not needed. By not applying too early, you avoid the need for a second drench later.

Floating row covers provide an effective barrier against this pest. Use in a rotated field only, as flies overwinter in fields of late season crucifers. Replace after weeding operations. If covers are not a practical option, and eggs are found, cultivation that brings soil up around the stem may help encourage formation of adventitious roots from the stem., which can help compensate for root loss.

--Ruth Hazzard

SWEET CORN

Early bare-ground sweet corn suffered some frost damage last week. Some fields have been harrowed down and replanted. Here are some notes on frosted sweet corn from Liz Maynard of Purdue University:

The growing point of sweet corn remains below the ground until plants reach the 6-leaf stage (6 leaf collars visible). While underground, the growing point is protected from light frosts. A frost on small sweet corn will injure or kill leaves that are above ground, but the growing point will typically survive and continue to produce new leaves. What affect will frost have on maturity and yield of sweet corn? Sweet corn maturity depends on the cultivar and growing temperatures. While the growing point is below the ground, the soil temperature plays a bigger role in determining the developmental rate than air temperature. Cool soil

temperatures will slow development whether or not a frost occurs. The damage that frost causes to leaves above ground robs those leaves of the capacity to make sugars, the primary source of energy and building materials for plant growth. Frost that occurs before the 3- leaf stage generally does not reduce yield.

--*Vegetable Crops Hotline, Purdue, May 3, 2001*.

CORN BORER BIO-CONTROL AVAILABLE

Trichogramma ostriniae is a tiny wasp that kills and reproduces inside **European corn borer eggs**. Since 1991 researchers from Cornell have been releasing this parasitoid in sweet corn fields and studying its effectiveness. It is exceptional at dispersing and attacking ECB eggs, and has repeatedly reduced the pest population by more than half. An on-farm trial of *T. ostriniae* is described in the video *'Farmers and their Ecological Sweet Corn Production Practices'* (this video can be obtained from UMass http://www.umassvegetable.org/soil_crop_pest_mgt/slide_set_videos.html). For detailed information and photos see the web site: http://www.nysaes.cornell.edu/ent/biocontrol/parasitoids/

Now in 2002 for the first time *T. ostriniae* will be commercially available in the U.S.; the cost is $15 or less per acre, depending on the number of acres treated. If you are interested in releasing this beneficial insect in your sweet corn this year you must contact the distributor and place your order as soon as possible. There are two distributors:

1. IPM Labs, Inc. (315) 497-2063, E-mail ipmlabs@ipmlabs.com

2. Insecterra Inc (514-524-2433),email ffournier@insecterra.com

The University of Massachusetts, along with several other northeastern states, will be working with several sweet corn growers this season to evaluate *Trichogramma ostrinaie* in commercial sweet corn. It also has potential for ECB control in peppers. Look to future newsletters for more information on how to integrate this biocontrol agent into your IPM system.

V. Grubinger & R Hazzard

Vegetable IPM Newsletter, Ruth Hazzard, Editor. The Vegetable IPM Newsletter is published weekly from May to September and includes contributions from the UMass Extension Vegetable Program faculty and staff, growers, and private IPM consultants.

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