UMASS EXTENSION

VEGETABLE IPM MESSAGE

MAY 17, 2001 VOLUME 12, NUMBER 2

CROP CONDITIONS

It remains brutally dry, despite a few brief showers and cooler, cloudier conditions. Only Worcester County reported measurable rainfall last week. Where irrigation has been available or fields hold water very well, cool-season crops such as corn, cole crops and lettuce are doing well. Asparagus fields are being irrigated to maintain production. Growers are irrigating before and/or after planting, where possible. Floating row covers are providing an excellent growth benefit, although covers did not save all the frost-sensitive crops on cold nights last week. Dry soils do not hold the day's heat as well as moist soils, increasing risk of frost damage on cold nights in dry conditions. Sweet corn is being cut out of plastic along the Connecticut River, which means the rest of the state will follow suit within a week or two. **Flea beetles** remain active in cole crops, especially in non-rotated fields. Corn flea beetle index for Stewart's wilt in sweet corn is low, based on the model that uses sum of December, January and February temperatures as an indicator. A sum above 90 indicates high likelihood of wilt; for the Connecticut Valley, the sum was 78 this winter. Though snow cover would moderate temperature extremes, based on relatively low levels of wilt in Massachusetts last year, we can expect low transmission of wilt this spring. In addition, some growers are using imidacloprid-treated seed in corn, to reduce damage from seedling pests.

2001 RESEARCH ON PHYTOPHTHORA BLIGHT

This year, the vegetable IPM program will be trying to learn more about Phytophthora blight of cucurbits and peppers in southern New England. We have hired a summer assistant (Nicole Smith) who will be making field visits to collect isolates of Phytophthora capsici for study. We will be investigating mating types (which relate to pathogen survival in soil), fungicide resistance, and host range. The host range studies are designed to look at whether or not squash isolates are pathogenic to pepper and visa versa. Historically, it has always been believed that squash isolates are pathogenic to pepper but there have been reports that some isolates have a more restricted host range. This information would be very important for recommending appropriate crops for rotation. We will also be trying to improve our ability to detect Phytophthora in irrigation ponds and pond mud. We are inviting farmers to participate. If you believe you have an outbreak of P. capsici in cucurbits or peppers, call the Plant Disease Clinic at (413) 545-1045 and notify Rob Wick. We will probably ask you to mail in or hand deliver a specimen for conformation. We will try to visit as many farms as possible but we cannot guarantee a visit.

This work has been made possible by funding from the Massachusetts State IPM Program, and by donations from individual vegetable growers to the Vegetable IPM Program.

--Robert L. Wick, rwick@pltpath.umass.edu

UPCOMING TWILIGHT MEETINGS

Strawberry IPM Meeting in Vermont

May 22, 2-5 pm, Norris Berry Farm, Monkton, VT.

Norma and Rick Norris grow 40 acres of vegetables, 8 acres of fruit and they have several greenhouses. The 4 acres of strawberries are among their most profitable enterprises. Integrated pest management is one of their keys to success. Sonia Schloemann, UMass small fruit specialist will join us for a discussion of strawberry pest scouting, identification and management.

Directions: Take exit 12 off I-89 onto route 2A south, to route 116 south into Hinesburg. At the very sharp corner just past the IGA stay to the right and get on Silver St., go 5 miles to the first right, Davis Rd., the farm is one mile on the left.

For more information contact: Vern Grubinger, 802-257-7967, vernon.grubinger@uvm.edu

Annual Strawberry Hill System

June 11. 6 pm, Bramble Hill Farm, Amherst.

Come learn about a newly established annual strawberry production system being used at this an other farms as well as a unique mulching system using waste wool from their sheep. Livestock, vegetables and greenhouse crops are all integrated into this farm system. Bramble Hill Farm consists of 128 acres of rolling pastures and cropland.

Founded in 1997, Bramble Hill Farm is owned by the Open Field Foundation, a non-profit educational corporation dedicated to the promotion of agriculture, open space and public education. The farm currently markets USDA natural lamb; certified organic vegetables, herbs, and flowers; and wool products directly to local retailers and restaurants and is actively involved with the "Be a Local Hero - buy local!" campaign in the Connecticut River Valley. Pesticide applicator rectification credit: 1 hour.

For more information, contact: Sonia Schloemann, 413-545-4347, sgs@umext.umass.edu. **Directions:** Bramble Hill Farm is located at 593 South Pleasant St. (Rt. 116) in Amherst. Travel south on Rt. 116 from the center of Amherst for about a mile and Bramble Hill Farm is on your right.

VERMONT VEGETABLE AND BERRY NEWS: REPORTS FROM THE FIELD

Vern Grubinger, vegetable and small fruit specialist at the University of Vermont Extension, publishes an email newsletter every two weeks during the season. Of special interest are reports from growers in western Massachusetts, Vermont, and Quebec about what's happening on their farms. If you are interested in receiving this contact Vern at vernon.grubinger@uvm.edu. Get the latest news - straight from the field! Available only on email .To avoid duplication, we generally do not reprint the same articles here.

VINE CROPS, EGGPLANTS & PEPPERS: TAKE ACTION NOW TO PREVENT PHYTOPHTHORA

The dry conditions make it hard to believe that fields could be saturated with water again this season, but it could easily happen with just a couple of weeks of rainy weather. As we have learned over the past couple of years, standing water and saturated soils bring with them a high risk of Phytophthora outbreaks. Given the number of already-infected fields in the region, we need to take precautions now to reduce the risk of outbreaks later in the season. At the Phytophthora workshop in Chicopee, Massachusetts this March, a group of growers and plant pathologists discussed what we know, what we don't know, and what we can (and can't) do to manage this disease. Growers came away with a better understanding of the disease and some strategies for the coming year. The following article was written by Meg McGrath (Dept. of Plant Pathology, Long Island Horticultural Research and Extension Center, Cornell University) after that meeting. The list of management practices is long, but many are feasible and they ***will*** make a

difference. See also the announcement of UMass Phytophthora research projects this season -- let us know if you want to participate!

WHAT HAVE WE LEARNED ABOUT MANAGING PHYTOPHTHORA BLIGHT IN CUCURBIT CROPS?

Phytophthora blight continues to be a challenge to manage, with potential to cause total crop loss. Unfortunately it has been increasing in importance in the Northeast region, as well as elsewhere in the United States, as it spreads into new areas and frequently eludes control. Symptoms include crown rot, tip blight, and fruit rot (pictures can be found at http://vegetablemdonline.ppath.cornell.edu/Home.htm). Several important points have been learned in our efforts to control this potentially devastating disease:

1. There is no 'silver bullet'. No single management practice will effectively control Phytophthora blight, thus an integrated management program is essential.

2. Management practices should be implemented before Phytophthora blight occurs on a farm because after it has occurred, it is challenging to continue growing susceptible crops without Phytophthora blight reoccurring.

3. Prevention is very important because Phytophthora blight is very difficult to suppress once it starts to develop in a field.

4. **It is critically important to avoid having standing water in production fields, including driveways, following rain or irrigation**. This was stressed by both growers and researchers who spoke at the Phytophthora Workshop on 27 March 2001.

5. The pathogen (*Phytophthora capsici*) evidently can be easily moved between fields on a farm, based on the more common occurrence of Phytophthora blight in new fields on a farm that already has the disease than on farms where it has not yet occurred. Therefore it is necessary to be scrupulous about cleaning equipment and boots after working in an infested field.

Current recommendations center around preventing the pathogen from being moved into a new field and managing soil moisture to avoid saturated conditions which favor disease onset. It is important to use an integrated program with as many of the following practices as possible.

1. Select fields where Phytophthora blight has never occurred when possible. The fungus that affects cucurbits also causes blight in pepper, fruit rot in eggplant, and buckeye rot in tomato. An effective rotational period has not been identified yet. Two years has been shown to be insufficient, therefore select a field where susceptible crops have not been grown for at least 3 years. Both mating types of the pathogen have been found in fields in New York, Massachusetts, Michigan, and in other states. Therefore it is possible for the pathogen to produce oospores, which are capable of long-term survival. Rotation will be more successful where only one mating type occurs. Selected fields should be isolated from fields where Phytophthora blight has occurred to avoid the potential of the fungus being moved (in run-off or on farm equipment) from the infested field into the cucurbit crop. Late blight of potato and tomato is caused by a different fungus (P. infestans); therefore, previous occurrence of late blight is not a concern in field selection.

2. Select well-drained fields.

3. Make sure water will be able to drain out of the field. Use a land plane to level the field as much as possible. If water does not normally drain out of the field, then make a trench between beds or rows at their ends, make a ditch or waterway across the end of the field for water coming out of the field in the trenches, and continually grade soil at the end to allow water to leave.

4. Physically separate plantings of susceptible crops (cucurbits, pepper, eggplant, and tomato). Plantings should be located such that there is no opportunity for water to move from one planting to another. The pathogen can also be dispersed in rain splash during storms. Therefore it is prudent to consider prevailing wind direction when deciding where to locate multiple plantings of susceptible crops on a farm.

5. When growing small-fruited pumpkins, select varieties producing hard, gourd-like rinds (such as Lil' Ironsides). These have been shown to be substantially less susceptible than varieties with conventional rinds.

6. Minimize hardpans and plowpans by subsoiling or chisel plowing before planting.

7. Do not plant the crop in areas of the field that do not drain well. Plant a cover crop in place of the crop in these areas.

8. Prepare raised dome-shaped beds for summer squash and other bush-type crops. Ideally beds should be a minimum of 9 inches high. Use a bed shaper to provide more lasting beds as opposed to a simple ridge. Use a transplanter that doesn't leave a depression around the base of the plant. Fill in any depressions.

9. Minimize hardpans and plowpans by not driving through wet fields.

10. Clean farm equipment, shoes, etc. of soil between fields. Movement in soil on equipment and shoes probably is an important means by which Phytophthora has been spread between fields on farms and may account for the occurrence of Phytophthora blight in fields with no previous history of susceptible crops.

11. Subsoil between rows after planting and before vining to improve drainage. Subsoil again as needed after rain. Good drainage is also important for driveways in fields, as symptoms have been observed first on plants next to the compacted soil of driveways, therefore, subsoiling along the edge of driveways is also needed. It is preferable to plan driveways before seeding leaving ample space, instead of seeding the entire field and then driving over plants.

12. Avoid over irrigating. Normal irrigation practices usually do not encourage Phytophthora blight except when leaks frequently occur. Do not irrigate at night time when temperatures are above 70? F.

13. Do not irrigate from a pond that could contain water that drained from an infested field.

Other practices that will improve water management will help control Phytophthora blight.

Straw mulch and compost are additional practices that may contribute to control of Phytophthora blight. Research is planned to investigate these. Mulch could provide a barrier between the pathogen in the soil and the crop. Compost would work by increasing the activity of microbes in the soil, including those that are antagonistic to Phytophthora. Yard-waste compost was not effective when evaluated recently on Long Island; however, the material used had low microbial activity. A brewery-waste compost with high microbial activity is being tested this year.

--Margaret Tuttle McGrath, LIHREC, Cornell University

TARNISHED PLANT BUG INJURY IN BRASSICA GREENS

In scouting early transplanted Chinese mustard greens this week we found both flea beetle and tarnished plant bugs (TPB) present on the leaves. TPB were hidden in the heart of the new leaves. Two types of damage were observed: small round scars or holes, typical of flea beetle feeding; and slightly larger, more irregular holes with brown margins. The latter are likely caused by tarnished plant bug feeding. Similar injury can be caused in lettuce. While scouting procedures and thresholds for TPB are well established in small fruits, it is an uncommon pest in greens and thresholds are not established. This variety may be especially susceptible. However, it may be worth keeping an eye on early plantings of mustard or lettuce for presence of TPB or injury.

Vegetable IPM Message, Ruth Hazzard, Editor. The Vegetable IPM Message is published weekly from May to September and includes contributions from the UMass Extension Vegetable Program faculty and staff, growers, and private IPM consultants. Authors of articles are noted; author is R. Hazzard if none is cited. Send comments or questions to rhazzard@umext.umass.edu, 413-545-3696

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