



NEW HAMPSHIRE VEGETABLE, BERRY & TREE FRUIT NEWSLETTER

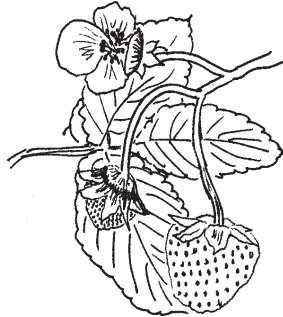
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IN THIS ISSUE...

- **Blueberry Disease Update – Mummyberry, Phomopsis and Fusicoccum Cankers**
- **Cucurbit Disease Update – Plectosporium Blight, Powdery Mildew scouting**
- **Strawberry – predicting maturity**
- **Foliar tissue testing vs. Soil testing**
- **SARE grower grants**
- **Upcoming Events**



BLUEBERRY UPDATE

In the past couple of weeks, we have seen some mummyberry shoot strikes throughout the state. Generally the incidence has been pretty low, less than five strikes per plant. This is consistent with the fact that we didn't see many of the apothecia, or tiny mushroom-like structures, in late March or early April. This is probably from a combination of good cultural practices to reduce the inoculum and, possibly, environmental conditions not being quite right for the fungus.

The shoot strikes are dark brown areas that can include blossom or fruit clusters as well as stems and leaves. If you look closely, you can often see fungal growth on the shoot strikes. They can look like Botrytis infections, but the 'Christmas-tree' pattern on infected leaves (see photo) is characteristic. Strikes produce spores that will act as secondary inoculum to infect fruits after being transferred by bees to any available flowers. To prevent fruit infections, fungicides should be applied throughout the entire bloom period, which can be a long time if you have varieties with a range of maturity dates.

Indar remains the best fungicide choice for mummyberry alone, but we recommend rotating to Captivate after 2 applications to control other fungi (like anthracnose and botrytis), and prevent the mummyberry fungus from developing resistance. When the weather is humid and rainy, stay with the 7 day schedule for sprays. If you do not see any of the shoot blight or if you are well past bloom, there is very little risk of blossom infections and spraying is not likely to be beneficial.

Reminder – You have probably sprayed your last Indar spray of the season, or are about to do so. Once the harvest season has begun and you can estimate your losses due to mummyberry, **please don't forget to send in the survey of what you sprayed and how much!** This is imperative so that we can apply for a Section 18 approval in 2006. If you prefer to email it, please send to becky.grube@unh.edu.

Other diseases to watch out for now are Phomopsis and Fusicoccum cankers. These look very similar in the field. Both start with small circular cankers around leaf scars that expand into large dead areas. Look for lesions and tip dieback on weak or dead new (2nd year) canes. Applying Bravo (chlorothalonil) after petal fall will control both diseases, but it is important to prune out and remove the infected canes from the field.



Mummyberry shoot strike on a flower cluster



Typical symptom of primary mummyberry infection

CUCURBIT DISEASE UPDATE

Now that pumpkins and squash should be getting enough sun and warmth to grow, it's time to think about scouting for fungal diseases. A new disease to watch out for is *Plectosporium* blight, in addition to the ever-present powdery mildew. Powdery mildew will reduce yields and fruit sizes, but *Plectosporium* can cause total yield losses if not controlled.

Plectosporium blight is caused by the fungus *Plectosporium tabacinum*. Jude Boucher (UConn Cooperative Extension) has a nice factsheet with photos: <http://www.hort.uconn.edu/ipm/veg/htms/plectosp.htm>. *Plectosporium* blight is favored by cool, rainy weather. The fungus overwinters on crop residue and can persist in the soil for several years. Spores are dispersed by wind over long distances. Lesions are small (<1/4 inch) and white. On vines, petioles and leaf veins, the lesions tend to be diamond to lens-shaped. On fruits and leaves, lesions are usually round. The lesions increase in number and coalesce until most of the vines and leaf petioles turn white and the foliage dies. Severely infected pumpkin vines become brittle and will shatter if stepped on. Early in the infection cycle, foliage tends to collapse in a circular pattern before damage becomes more universal throughout the field. These circular patterns can be easily detected when viewing an infected field from a distance. Numerous fruit lesions produce a white russeting on the surface and stems that render the fruit unmarketable. Fruit lesions also allow for entry of soft rot pathogens that hasten the destruction of the crop.

Disease management recommendations include:

- a three-year crop rotation
- planting in sites with good air circulation to encourage rapid drying of the foliage

- switching to trickle irrigation
- scouting fields to confirm the presence of *Plectosporium*, applying fungicides, and plowing under crop residue after harvest
- resistant varieties? none are known to be resistant, but the pumpkin varieties Sorcerer, Gold Standard and sugar pumpkins seem to be less susceptible than other varieties grown in the same fields

Fungicides: Chlorothalonil (e.g. Bravo) will control *Plectosporium* blight on pumpkins but does not control powdery mildew. Several systemic fungicides (like sterol inhibitors) or protectants like sulfur work well on powdery mildew but do not control *Plectosporium* blight. Contact fungicides such as copper hydroxide and maneb aren't likely to provide sufficient protection when used alone. So, fungicides must be mixed or alternated to produce a combination that will provide a full range of disease protection.

SCOUTING: Starting at fruit set, scout weekly for both powdery mildew and *Plectosporium*. Examine the lower surface of 50 leaves for small (1/4"), white powdery mildew colonies. When scouting for *Plectosporium*, look for a few white, elongated, diamond-shaped lesions on lower vines and leaf petioles.

If your farm did **not** have *Plectosporium* blight in the past, scout pumpkin and summer squash plantings weekly starting at fruit set for both *Plectosporium* and powdery mildew. If *Plectosporium* blight is detected before powdery mildew, apply chlorothalonil (e.g. Bravo) every 7 days until powdery mildew is found. Once powdery mildew is found, add a systemic material or sulfur to the spray mix for mildew control, using a different fungicide group each time to help prevent resistance. Continue the 7 to 10-day spray schedule, keeping with 7 days under wet conditions. Crop rotation is an essential component of this management program.

If your farm **had** *Plectosporium* blight last year, it is suggested that you begin a spray program as soon as the disease is detected or at fruit set (especially if it is a wet season).

Condensed and adapted from UConn IPM bulletin, J. Boucher.

STRAWBERRY CROP & PREDICTING MATURITY

The cold snap (29F in Durham, colder elsewhere) we experienced in mid-May did not affect growers equally. Several irrigated for frost protection, and experienced little or no damage. For some of the growers who didn't irrigate, flowers had not emerged from the crown far enough to

experience damage, and for others, the majority of flowers were killed.

Although the strawberry ripening season is usually considered to be 6/10-7/15 in this part of the U.S., diverse microclimates and the use of rowcovers for season extension have expanded that range. Our unusually cool spring probably has expanded it even further, since berries that were not under rowcovers will be quite a bit later than normal. Berries are typically ready to harvest 21-28 days after bloom, given normal weather conditions.

MANAGING CROP FERTILITY SOIL TESTING VS. PLANT TISSUE ANALYSIS

Crop fertilizer needs are usually based on predicted macro- and micronutrient needs. Overapplying is expensive, and may not help the crop. To develop a fertility program for a given crop, both soil and plant tissue tests can provide valuable information. Understanding what you learn from each type of test helps you get the most reliable information with the least expense.

Soil tests: *Macronutrients and pH* - Soil pH affects the ability of the crop to take up and use available nutrients. Soil tests will reveal total amounts of major or minor nutrients or pH that is outside the desirable range. Macronutrients include potassium, phosphorus, magnesium & calcium. Based on these results, you can make sure to select fertilizers, lime or other amendments that will raise pH or supplement any missing elements. *Micronutrients* - Many factors influence the plant's ability to take up and use micronutrients, including boron, molybdenum, copper, manganese and zinc. Therefore, availability of these elements in the soil does not guarantee that the crop won't be deficient. Further, for many crops, the optimal levels of these nutrients have not been determined. If you are using organic amendments such as manures or composts, micronutrient levels are usually present in sufficient quantities for plant growth. For all of these reasons, the standard soil test (\$12 through UNHCE) does not include micronutrients. They can be tested for an additional \$6 charge, and we would typically recommend this when a deficiency is suspected. *Nitrogen* - Standard soil tests will not provide accurate information about the amount of nitrogen that is available for plants to use because nitrate nitrogen is not stable and levels fluctuate widely. Pre-sidedress soil nitrate tests give this information, but must be done during the growing season and require special handling in order to give accurate results. For this reason, nitrogen applications are usually determined based on crop need rather than on soil tests.

Tissue tests: Leaf analysis tells you exactly what nutrients the plant has successfully taken up and used from the soil. Although more expensive than soil testing (currently \$26

through UNHCE), tissue tests are highly informative for perennial crops such as fruit trees, blueberries, raspberries, or grapes. They are also commonly used for high value greenhouse crops that are continuously fed. One advantage of tissue tests is that they can reveal problems or deficiencies before the plants show external symptoms. They also reveal deficiencies caused by the plant's inability to take up nutrients that are present in sufficient amounts in the soil - which can be caused by incorrect pH or competition with other nutrients.

Timing:

Soil tests are often done in the spring, prior to planting. Although this is effective, we encourage soil testing in the fall (October). Reasons to do this is that you will have time to apply lime in November if needed, and this will give plenty of time to develop a fertilization plan prior to planting in the spring.

Tissue tests provide a snapshot of what's going on in the plant when the leaves are sampled, so the timing is somewhat sensitive. For perennial fruit crops, tissue tests are done during the peak growing season, just before harvest. Tissue testing is rarely done for field-grown vegetables, but it can be informative for greenhouse grown vegetables such as tomatoes, where the fertility regime could easily be altered mid-growing season. For this purpose, tissue testing could be done at any point when it's important to know the nutrient status of the crop.

Stay tuned for July's newsletter, which will have more information about tissue testing of fruit & vegetable crops!

VEGETABLE INSECT PEST UPDATE

Colorado potato beetles begin their annual munching in early June here. Imported cabbageworm does the same; I've already seen the white butterflies laying eggs. Spinach leafminers are active now, and striped cucumber beetles should be out in force by the time you get this. In some years, our first hornworms on tomato are in June. The adults can't overwinter here, so fly in from the south. European corn borer moths should be just starting their flight as I write this on June 8th. Shotholes from the young larvae should start to show up on late whorl stage corn soon.

Contributed by Alan Eaton, UNHCE IPM Specialist.

SARE GROWER GRANTS

The Northeast Region Sustainable Agriculture Research and Education program has just posted applications for Partnership Grants. Each grant can provide up to \$10,000

to support on-farm research and demonstration projects. If you are interested in testing new techniques, equipment, or ideas that can increase profitability and sustainability of your farm, these are a great way to do it with minimal cost to you. Applications are due in early December, but now is the time to start thinking about projects. See <http://www.uvm.edu/~nesare/FGinfo.html> for more information. Several of us at UNH Cooperative Extension are interested in working with you to develop projects. Let us know if you've got an idea you'd like to discuss!

UPCOMING NH TWILIGHT MEETINGS

The second statewide Twilight Meeting of 2005 will be held on July 7th in East Conway at Sherman Farm. Sherman Farm began in 1964 as a dairy farm, and now has 50 acres of vegetables, fruit & cut flowers. The Shermans also produce their own high quality milk, beef and pork. The farm stand employs a full-time chef and sells homemade foods made with Sherman Farm products. The meeting will be held from 5:30-7:30pm, and dinner is available for \$5. Topics to be covered include record-keeping and documentation, value-added products and marketing, and education and community involvement. Pesticide credits (1.5) are available. Contact Tina Savage in Carroll County at (603)539-3331 for more information and to RSVP if you will join us for dinner.

The fourth meeting this season for commercial tree fruit growers will be held on Mon., July 11th at Apple Hill Farm in Concord, NH. This meeting is part of the outreach program for the Commercial Orchard Implementation of Alternative Control for Apple Maggot Fly on-farm research project funded by the NH Department of Agriculture - IPM Grant Program. Starker Wright will be the featured speaker. Starker Wright is the Research Director of Pest Management Innovations (PMI), a small business in Harpers Ferry, West Virginia focused on development of commercially viable behavioral control strategies for insect pests of agriculture. Also, John Sarkes, an Area Claim Representative for Rural Community Insurance Services will be presenting how crop insurance companies conduct apple yield assessment for determining a claim. Pesticide credits will be available. Call George Hamilton at Hillsborough County UNHCE, (603)641-6060, for more details.

Thurs. Jul. 7 (**new date!!**), **Sherman Farm Twilight Meeting.** E. Conway, NH. Contact Tina Savage (603)539-3331. **V, F, SF**
Mon. Jul. 11. **Apple Hill Farm Twilight Meeting.** Concord, NH. Contact George Hamilton (603) 641-6060. **TF**
Wed. Jul. 13, **Organic Garden & Farm Tour, Berry Hill Farm,** Stratham, NH. Contact NOFA-NH (603)224-5022. **O, V, SF**
Wed. Jul. 22, **Organic Gardens & Farms Tour,** Andover, NH. Contact NOFA-NH (603)224-5022. **O, V, F**
Tues. Jul. 26, **Green Wagon Farm Twilight Meeting.** Keene, NH. Contact Carl Majewski (603)352-4550. **V, SF**
Sat. Jul. 30, **Organic Garden & Farm Tour, Peaked Hill Farm,** Gilmanton, NH. Contact NOFA-NH (603)224-5022. **O, V, F**
Tues. Aug. 16, **UNH Horticultural Farm Twilight Meeting.** Durham, NH. Contact Cheryl Estabrooke (603)862-3200. **V, SF, F**
Wed. Aug. 17, **Beginning Farming on Leased Land, South Village Garden,** Acworth, NH. Contact NOFA-NH (603)224-5022. **O, V, F**

Meeting topics:

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

OTHER UPCOMING EVENTS

Thurs-Sun Aug. 11-14, **NOFA (Northeast Organic Farming Association) Summer Conference,** Amherst, MA. Phone (978)355-2853 or email nofa@nofamass.org. **V, F, SF, TF, O**
Tues-Thurs. Dec 13-15. **New England Vegetable and Fruit 2005 Conference,** Manchester, NH. For more info see <http://www.nevbc.org/>. **V, SF, TF, O, F**

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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