



UMASS
EXTENSION



Vegetable Notes

For Vegetable Farmers in Massachusetts

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CROP CONDITIONS

It's been wet, cool and humid this past week. Weekly rainfall for the week ending Monday August 16 ranged from about 1 to 6 inches across New England. Within Massachusetts the range was 1- 4 inches. As is typical for this time of year, temperatures have been relatively cool, with highs in the low 80's. What's not typical is that we never had really hot periods in the high 80's and 90's. Some strong sun and a drying breeze would be welcome for a few days, to give us dry foliage early each day. Keep an eye out for fungal and bacterial diseases - in most crops.

For growers in cooler, higher locations, tomato ripening has been slowed by the cool, wet weather. In general the harvest is excellent. Late blight has not been reported in Massachusetts yet. However, early blight (*Alternaria*), Septoria leaf spot and bacterial canker are widespread. A common symptom for bacterial canker, when it occurs late in the season, is "marginal scorch" or "firing" on the margins of the leaves. Often there is a yellow halo or line, between the healthy tissue and the scorched area. This may start on older leaves, but tends to spread across the foliage. Other symptoms include irregular one-sided leaf wilting, cankers on stems or petioles, and 'bird's-eye' spotting of fruit. Under current conditions, weekly fungicides are recommended. Include copper if a bacterial disease is present. The press continues to be interested in whether late blight will cause a problem in this region.

Sweet corn crop harvest passed the halfway point this week. Some growers are finding that picking is hampered by wet conditions, which makes the ears harder to snap off in addition to being generally unpleasant for the pickers and causing equipment to get stuck. Corn earworm moths rode the hurricane winds north and arrived in massive numbers on Sunday. CEW counts jumped over the weekend and growers are on a three-day schedule in most of the state.

Potato harvest is about 10% complete. Peppers and eggplants are producing well, for the most part. Winter squash and pumpkins are sizing up and a few fields of butternut are nearly mature. A few fields have had fruit set problems. Greens and brassicas are growing well.

Fall and late summer cover crops are going in –everything from sudex to oat/hairy vetch mix. Congratulations to

growers who take time to get their cover crops in during the hectic harvest season.

Correction: the phone number for the UMass Extension Bookstore is 413-545-2717. You may call to order the **New England Vegetable Management Guide, Photo ID Supplement**, or other publications.

-R. Hazzard

CUCURBIT DISEASE UPDATE

How do I know if its downy or powdery...?

Growers and crop consultants are reporting that powdery mildew has progressed rapidly in the past week or two. We know that downy mildew has been in states to the south of us for several weeks, and that the hurricane have moved a lot of organisms northward. Downy mildew has been confirmed in one pumpkin field in MA. This disease can destroy the foliage of a squash or pumpkin field very rapidly. Its progress can be slowed by use of fungicide; however, the most effective fungicides are somewhat different than those that would be the first choice against powdery mildew or plectosporium. Hence, its good to know which disease is present in your field. Scout and look at both upper and lower surfaces of the leaves, on both older and younger leaves.

Powdery mildew – Powdery mildew is widespread on a variety of winter squash and pumpkin. It can cause rapid defoliation very quickly if not controlled properly, and has progressed in the past weeks.

The diagnostic characteristics of powdery mildew are pure white 'fuzzy' growth on the upper and lower leaf surface, petioles and stems. Symptoms typically begin on older, lower leaves and can develop and spread rapidly under dry, humid conditions. Control of powdery mildew begins with regular scouting for symptoms and fungicide applications every 7-10 days. Sometimes yellow spots remain on the upper leaf surface after a fungicide has killed the fungus. Fungicide resistance management of the fungus which causes powdery mildew is critical. Rotate classes of fungicides (see previous issues of Veg Notes or **2004-2005 New England Vegetable Management Guide**). Strobilurins (Flint, Quadris, Cabiro), and DMI's (Nova) should be used once per season. Sulfur or chlorothalonil (Bravo or equivalent)

are good choices to combine with these materials, or used alone; neither is likely to develop a resistance problem.

Downy Mildew – Downy mildew has been confirmed in Hadley near the Connecticut River. Hence it is likely that it is present elsewhere in the state. In some fields in New Jersey, where it arrived much earlier in the season, downy mildew has caused 100% loss. While we are approaching full fruit growth in some fields, most crops need a few weeks more with a good foliage canopy to complete their crop development. The death of the leaves can also expose the fruit to sunscald.

Symptoms of downy mildew are: first symptoms are small, slightly yellow areas on the upper leaf surface, the color is less vivid on the corresponding lower leaf surface. Lesions start on older leaves and move progressively onto younger leaves. As lesions expand, they may be yellow or brown. They may be angular in shape, bounded by the leaf veins. Spores are produced on the undersides of the leaves, giving the leaf a downy appearance, which ranges from no color, to light gray, to deep purple. This purplish color is quite distinct from powdery mildew. As the disease progresses, increasingly larger areas of the leaf turn yellow or brown and die.

Growers should take precautions to keep downy mildew under control. If downy mildew has been found, a weekly fungicide maintenance program. There are a number of fungicides labeled for control of downy mildew and many will help control other important diseases in cucurbits. Most effective materials would be those with Ridomil (eg Ridomil/Bravo) or Alliette; Bravo by itself or a strobilurin would also be effective.

Plectosporium has been found on additional farms. Symptoms have been described in past newsletters. Spray materials that are effective against powdery mildew should control this disease; however Alliette and Ridomil would not be effective.

Organic disease management in cucurbits: most organic growers use cultural practices to reduce disease, but tend to let these diseases take their course if they do occur. There are few organic fungicide options, and a large sprayer is needed to cover most cucurbit crops. However, there are some choices that are allowed. Sulfur is quite effective against powdery mildew, as is potassium bicarbonate (check for specific formulations); neither has systemic activity however so good coverage is needed.

'Whatever happened to the good old days when you could just plant your pumpkins and walk away until harvest time....?'

Call for diagnostic information: Dr. Rob Wick, UMass Disease Diagnostic Lab: 413-545-1045.

-R.Hazzard

HEIRLOOM AND SPECIALTY TOMATO VARIETY MEETING

August 26, 2004

5 - 7 pm

Vegetable Research Farm

NYS Agricultural Experiment Station, Geneva, NY

Come see and taste 116 heirloom and specialty tomato varieties from the US, Europe and Mexico! These tomatoes have been planted on plastic and staked in an observation plot at the NYS Agricultural Experiment Station Vegetable Research Farm just west of Geneva. (The farm is on Co. Rd. 4, about 1 mile west of PreEmption Rd. and the main Station buildings.) Staff from Cornell University, NOFA-NY, the Public Seed Initiative, and Cooperative Extension will be getting together with interested tomato growers to look at and taste the tomatoes, and to share what we know about these varieties. Light food (including tomatoes!) and beverages will be available. For a list of

the varieties ahead of time, and so we can plan for food, please contact: Carol MacNeil, Cornell Cooperative Extension vegetable specialist, at 585-394-3977 ext. 33 or mail to: crm6@cornell.edu by Tuesday, Aug. 24th.

-Carol R. MacNeil

Senior Extension Educator

Commercial Vegetable Program in Ontario, Wayne, Yates and Steuben Cos.

NORTH AMERICAN FARMERS DIRECT MARKETING ASSOCIATION CONFERENCE

Farm direct marketers will "Start a Revolution" in Boston in 2005 In February 2005, more than a thousand farm direct marketers will gather for the annual conference of the North American Farmers' Direct Marketing Association (NAFDMA). The last time this many farmers gathered in Boston, they started a revolution! The conference will be held on Feb. 11-12, 2005, at the Park Plaza Hotel. A trade show with more than 80 vendors, pre-conference bus tours (four tours: Agritourism, On-Farm Retail, Farm Direct Marketing and Farmers Markets, Feb. 7-9) and a post conference tour in New York City (Feb 13-14), plus a full-day workshop (Feb 10) will be held in conjunction with the conference

The convention rotates to a different part of North America each year; it was last in the Northeast in 1996, when it drew a record 1,400 people to Saratoga Springs, N.Y. The conference will feature nine different tracks; topics include agritourism, business management, retail markets, farmers' markets, local food initiatives and livestock. Another track will take attendees Beyond Fruits & Vegetables, and another will take a close look at Featured Farms. For con-

vention information, visit www.nafdma.com. Or, e-mail info@nafdma.com or call (413) 529-0386. Registration will be available on-line around Nov. 1.

--Kelly Fuerstenberg, NAFDMA

MANAGING LETTUCE DROP

- from Sally Miller, Ohio State University Extension Vegetable Crops, VegNet Vol. 11, No. 18. August 19, 2004

Midwestern vegetable growers have reported increasing losses due to drop in lettuce during the past several years. Cool, wet weather is very favorable for lettuce drop, caused by *Sclerotinia minor*, and in some areas *Sclerotinia sclerotiorum* as well. Both pathogens produce structures called sclerotia that can survive for many years in soil. These structures are small (< 1/16 inch) and generally round in *S. minor*, and irregularly shaped and considerably bigger (about 1/16 – 1/4 inch x 1/8 – 3/4 inch) in *S. sclerotiorum*. All lettuce cultivars are susceptible to this disease, which has been managed in the past using applications of the fungicides **Rovral** and/or **Ronilan**. However, growers are seeking alternative products for effective, long-term management of this disease.

Note: This disease also affects many other vegetable crops, including cabbage, tomato, beans, and cucurbits. The methods described below apply to management for any affected crops. See the *2004 New England Vegetable Management Guide Pest ID Supplement* for photos of *Sclerotinia* in bean and tomato.

New products for lettuce drop management

Research in 2002 and 2003 in Arizona (Dr. Mike Matheron, University of Arizona) has shown that the fungicide **Endura** (boscalid, BASF) significantly reduced drop caused by both *S. minor* and *S. sclerotiorum* in lettuce, and was more consistent from year to year than Ronilan or Rovral. In our on-farm trial in Ohio in 2003, under very severe disease pressure (60% incidence of drop in the untreated control), Endura applied twice (alternated with Rovral) did not significantly reduce drop. In the Arizona trials, the biofungicide **Contans** (distributed by Sylvan Bioproducts, contact Bill Stoneman (billstoneman@charter.net), a fungus (“mycoparasite”) that kills sclerotia of both *S. minor* and *S. sclerotiorum*, was highly effective in controlling drop caused by *S. minor* when combined with an application of Endura. Recent results by researchers studying white mold (caused by *S. sclerotiorum*) of canola in Germany have shown that the best time to apply Contans is just after harvest, when sclerotia are on the surface and can be readily attacked by the Contans fungus. Reducing the population of sclerotia of either pathogen using Contans may take several years: deeply buried sclerotia may not be exposed to the Contans mycoparasite at the time of application. As sclerotia are continually mixed and brought

to the soil surface through cultivation, they will be exposed to the mycoparasite and eventually sclerotia numbers will decrease. According to the manufacturer, Contans **MUST** be incorporated 4-8 inches into the soil after application in order to maximize contact of the mycoparasite with sclerotia. They also concur that the product should be applied after harvest (with incorporation) in order to allow plenty of time for the mycoparasite to find and kill the sclerotia. Lettuce drop is a persistent problem that may require a multi-year, multi-tactic approach to management. The high levels of drop that have occurred in lettuce fields over the past three years in many Midwestern growing areas have contributed to increasing numbers of sclerotia in soil, which will increase disease pressure. Now is the time to start thinking about managing lettuce drop for next year and years to come.

SWEET CORN UPDATE

SWEET CORN TRAP COUNTS 8/13 - 8/18

Town	Date	ECB Z1	ECB E2	Total ECB	CEW (Avg.)	FAW	%PT
Berkshires/ Champlain Valley							
Sheffield	8/19	0	0	0	41	-	-
Westminster, VT	8/18	7	14	21	21	0	-
CT River Valley							
S. Deerfield	8/18	39	10	49	-	1	-
N. Hadley	8/18	107	6	113	70.5	-	-
Hatfield	8/18	151	55	206	180	-	14
Hadley (pepp.)	8/18	37	1	38	-	-	-
Feeding Hills	8/17	1	2	3	32	-	6
C.&E. MA							
Dighton	8/1	3	13	16	96	1	-
Still River	8/18	6	4	10	322	-	-
N. Andover	8/12	2	11	13	54	-	46
Concord	8/16	1	21	22	59	4	31
Ipswich	8/13	11	10	11	41	4	32
Leicester/ Spencer	8/18	6	11	17	36	0	12
Northbridge	8/18	1	6	7	25	2	10
Tyngsboro	8/16	13	15	28	31	0	20
Monson	8/18	11	10	21	35	0	2
Seekonk	8/17	5	6	11	148	-	-
Sharon	8/17	45	15	60	404	-	-



Summer 2004 Sweet Corn Trapping Locations

Corn earworm counts remain very strong, and at some locations jumped dramatically over the weekend as the storm front passed through New England. Counts ranged from 20 to 50 moths per week in the Berkshires, central and northeastern Mass and southern Vermont. In the Southeastern coastal region and scattered other locations (Hatfield, Still River), catches were in the hundreds. A three-day schedule is recommended where captures are over 90 moths per week; a three to four-day schedule where captures are 20-50 moths. The most critical period for the first spray on each block of corn is in early silk, when the fresh silk is very attractive to corn earworm moths and egg laying is highest. Conditions which make it safer to stretch the interval include maximum daily temperatures below 80; using a longer-residual material such as Warrior; and excellent spray coverage of the ear zone. Conditions which make it wise to tighten up to 3 days are frequent, heavy rains; poor spray coverage on the ear zone; and high temperatures (e.g. 85° F and above). Try to time your sprays so there are at least 4 hours of drying time before a rainstorm. Sprays can stop when the corn is 5-7 days from the first harvest. European corn borer captures also rose this week. Eggs are plentiful and at the locations we have scouted, borers are hatching out and pretassel infestations are rising. However it may still be that scouting at whorl or pretassel turns up mostly fall armyworm, not borers. In either case, spray if infestations are >15%.

Pepper growers should keep a regular schedule of insecticides for European corn borer control. This is probably peak flight date; counts are likely to go down after this, but new hatch of borers will continue for a while yet.

CORN EARWORM THRESHOLDS

Moths/Night	Moths/Week	Spray Interval
0 - 0.2	0 - 1.4	no spray
0.2 - 0.5	1.4 - 3.5	6 days
0.5 - 1 days	3.5 - 7	5 days
1.0 - 13.0	7 - 91	4 days
Over 13	Over 91	3 days

-J. Mussoni, D. Rose, J. Golonka, P. Willard, B. Howden, W. Kingsley, A. Duphily, P. Westgate, T. Harlow, S. Peabody, and R. Hazzard

Vegetable Notes, Ruth Hazzard, editor and Ben Hunsdorfer, Assistant Editor. *Vegetable Notes* is published weekly from May to September and includes contributions from the faculty and staff of the UMass Extension Vegetable Program, other universities and USDA agencies, growers, and private IPM consultants. Authors of articles are noted; author is R. Hazzard if none is cited.

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