UMASS EXTENSION

VEGETABLE IPM MESSAGE

MAY 23, 2002 VOLUME 13, NUMBER 4

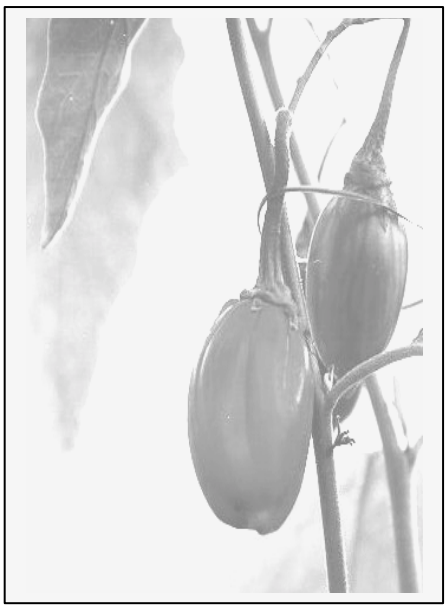
CROP CONDITIONS

Last Saturday brought cold rain and/or snow across the state (6 inches of snow reported in Hawleigh, MA!), followed by clearing and cold. Frost hit most areas of the state and in some locations made a repeat performance for four nights running, from Saturday through Tuesday night. Temperatures dipped to the low to mid twenties in some areas, and hovered near freezing in others. The good news is that lettuce and brassicas survive this treatment, although they certainly don't grow much, and we may see harvests bunch up in succession plantings. The bad news is that crop injury is widespread. Asparagus was frozen for a second time this season; early sweet corn crops have been hit hard. Those early zucchini, cucumber, and tomato plantings that everyone gambles on and that usually make it are, in many cases, gone. That includes some that were under row cover. Growers are glad for the next planting that is waiting in the greenhouse. Or, they are glad that they held off planting until after the cold spell. Or, they spent several nights running irrigation on tomatoes, strawberries, or other crops. Overall, we are likely to see a lot of gaps as well as some bunching up in early harvests. Fortunately, a warming trend is underway.

JILÓ GIVEAWAY

Jiló (*Solanum gilo*) is in the Solanaceae family and resembles eggplant in growth habit. It turns orange-red when ripe. This plant is originally from Africa and was brought to Brazil with the slave trade. Due to the growing Brazilian population in this state, we will be evaluating this crop at our Research Farm and on selected farms. The Brazilian Consulate in Boston estimates that there are over 200,000 Brazilians in New England, the majority of which are in Massachusetts. And the population is growing. The official language of Brazil is Portuguese; however, other Portuguese-speaking peoples in Massachusetts, such as people from the Azores, Madeira, Portugal, or Cape Verde, do not use jiló.

We were give seed from David Hill of the Connecticut Agricultural Experiment Station and also bought seed from a commercial source available in this country. We have transplants of these crops that we would like to give to interested growers to evaluate on their farms and markets. This crop would be most appropriate for growers who market in areas where Brazilians are found. Some cities that have significant Brazilian populations are Framingham, Marlborough, Hudson, and Lowell.



JILÓ, A BRAZILIAN EGGPLANT

If you are interested, contact Frank Mangan and I'll arrange to get transplants to your farm. We only have about 200 transplants available to give out. Even growing a few plants on your farm will allow you to evaluate this crop in your production and marketing strategies. I can also give

you production information developed by the Connecticut Agricultural Experiment Station.

--Frank Mangan (978 422-6374) fmangan@umext.umass.edu

Photo credit: Manfred Hahm-Hartmann (website: http://mitglied.lycos.de/rkraft/tomatenhahm.html#Auberginen)

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MASSACHUSETTS CULTIVATED BLUEBERRY GROWERS' ASSOCIATION

Massachusetts Cultivated Blueberry Growers' Association will hold their spring meeting on Saturday, June 1 at John and Carol Peterson's Town Line Farm, Plympton, MA. All blueberry growers are invited to attend, amateur or commercial growers.

The meeting will begin with a picnic lunch at noon. Please bring your own lunch and chairs. Following the lunch, will be a speaking program and tour of the Peterson's blueberry plantings. Soni Schloemann, University of Massachusetts Extension Small Fruit Specialist, will present an "Update on Blueberry Insect Pest Management & Blueberry Pollination". This will be proceeded by a review of methods of protecting blueberries from bird depredation by Dominic Marini, President of the Association.

In addition, Charles Harris Irrigation Company and Orchard Equipment Supply Company have been invited to display irrigation equipment and sprayers, pruning equipment, bird scaring devices and other equipment.

Peterson Town Line Farm is located at 202 West Street, in Plympton immediately beyond the Halifax Plympton line. From Route 106: Turn south on South Street in Halifax Center. Turn left on to East Street which becomes West Street at the town line.

From Route 44: Turn north on Route 58. Then take a left onto Elms Street to West Street.

Dominic Marini

PERMIT TO IMPORT WATER SPINACH FOR GROWTH AND SALE IN MASSACHUSETTS

Water spinach (*Ipomea aquatica*), also known as water grass, swamp cabbage, ung choi, kang kong, aong many others, is a popular vegetbale crop amoung Asians. I came across some growers cultivating this crop a few years ago. In researching this crop I found that water spinach is on the Federal Noxious Weed List. This is a list maintained by the Animal Plant Health Inspection Service (APHIS) of the USDA. Any plant that is placed on this list is illegal to grow in the US without a permit from APHIS.

Water spinach was placed on this list because it can become an established weed in waterways. Since water spinach is extremely frost sensitive, it has only become an invasive species in Southern states.

UMass Extension, Mass. Department of Food and Agriculture, and local and federal officials with APHIS worked together to create a permitting process for growers in Massachusetts. In particular, Brad Mitchell of DFA and Rick Mytkowicz of the local APHIS office took the lead in making this happen

Here are suggested steps for working with growers who want to grow and sell water spinach in Massachusetts.

1. Growers need to fill out the following permit: "PPQ Form 526". This form can be downloaded from the APHIS site:

http://www.aphis.usda.gov/ppq/permits/weeds/index.html

The permit, along with a cover letter, needs to be faxed to Polly Lehtonen of APHIS at 301-734-8700.

2. APHIS has coordinated a permit with a seed company in Hawaii that will allow them to legally sell seed to growers in Massachusetts. This is the Seed Company that should be listed on the permit:

Fukuda Seed Store, Inc.1287 Kalani St., Honolulu HI 96817

808-841-6719 – phone; 808 842-0295 – FAX

It is essential that growers understand that they can only buy seed from companies that have a valid permit from APHIS to sell to Massachusetts. Presently, the only company that has been identified with the proper permits is Fukuda Seed Store, Inc.

3. Fukuda Seed Company estimates that it will take between 3 and 6 weeks to fill an order. Once they receive and order and payment they order the seed from Japan. When the seed from Japan arrives in Hawaii it is impounded by USDA for about a week for verification. It is then released to Fukuda Seed for delivery.

When you place your order with Fukuda Seed you want to make sure that they understand when you need the seed. Orders placed now would be too late for this season.

For those growers who have seed left over from previous season, there is a way to grow this seed legally. Mass. DFA has created a permitting process that acknowledges the seed was not purchased legally and that this seed can be planted to deplete this source. You must complete and sign a separate permit in order to do this.

For more information contact Frank Mangan, University of Massachusetts (978-422-6374; fmangan@umext.umass.edu).

GET YOUR COMPOST ANALYZED!

Many growers have access to organic waste materials such as manure, horse bedding, lawn clippings, or leaves and are producing compost on their own farm. Others are purchasing compost from off-farm. If you are applying compost to your fields, you should know its composition – just as you need to know the composition of a fertilizer. Also, it is important to know if the decomposition process is complete – if your compost is "finished".

Many farmers are more knowledgeable about how to make compost than they are about the nutrient availability from compost in production agriculture. In most cases, finished compost is classified as a soil conditioner rather than a fertilizer due to the relatively low levels of nitrogen, potassium, and phosphorus. Finished compost adds these elements, and others, but releases them over a longer period of time than chemical fertilizers.

A compost is considered mature (i.e. finished) when the energy and nutrient-containing materials have been combined into a stable organic mass. The composting process results in a dark-brown material in which the initial constituents are no longer recognizable and further degradation is not noticeable. The length of the time needed to achieve finished compost will vary with many factors and can take anywhere from a couple of weeks to over a year.

Making sure that a compost is finished before adding it to the soil is very important. Application of an unfinished, carbonaceous compost could adversely affect plant growth since the compost may have its own demand for nutrients as the breakdown to maturity continues in the soil. In addition, immature composts made from nitrogen-rich feedstocks are often high in ammonium, which can be toxic to plant growth. Because of the risks with use of immature composts, farmers would be wise to allow a period of at least a week between application of any compost to land and planting or seeding of crops.

Finished compost is a dilute fertilizer, having an analysis of about 1-1-1 (N-P2O5-K2O), but varying with regard to the original materials that were incorporated into the pile and how they were composted.

Compost Analysis

In response to the increased interest and use of composts by farmers, the UMass Soil and Plant Tissue Testing Laboratory offers a compost test. The test will analyze the following: Extractable major and minor nutrients (phosphorus, potassium, calcium, magnesium, zinc, boron, iron, manganese and copper), water content, pH, organic matter, total nitrogen, nitrate, ammonium, carbon: nitrogen ratio, soluble salts, and extractable heavy metals (lead, cadmium, nickel and chromium). The current cost for this test is $25.00. Contact the UMass Soil and Plant Tissue Testing Laboratory to receive more information about getting your compost analyzed.

UMass Soil and Plant Tissue Testing Laboratory
West Experiment Station
University of Massachusetts
Amherst, MA 01003

(413) 545-2311

Making Compost

If you are interested in learning more about making compost on your farm, you can order hands-on manuals from the Natural Resource, Agriculture, and Engineering Service (NRAES) located at Cornell University. Two manuals available are On-Farm Composting Handbook ($25.00) and Field Guide to On-Farm Composting ($14.00). You can get information on ordering these resources from their webpage (http://www.nraes.org/), or contact them at (607) 255-7654, or NRAES@cornell.edu.

--Frank Mangan (978 422-6374), Allen Barker, and Steven Bodine

DISEASE DIAGNOSTICS UPDATE

Downy mildew of cucurbits has been seen in South Carolina. This is very early for that part of the country. It is possible that we will see the disease early this year. Growers should look for angular patches of dead tissue and call the UMass Disease Diagnostic Lab (413-545-1045). Last season, downy mildew of cucurbits arrived in the region in mid August and caused a rapid decline in the foliage in pumpkin and winter squash fields.

-Robert Wick, University of Massachusetts

COLD WEATHER AND VEGETABLE CROPS

B y Robert. Precheur, Ohio State University

The news this week was the record cold and scattered frosts throughout the northeast. This cold spell was felt in over 200 cities in the northeast, even into the deep south. The low temperatures recorded at many locations broke long- standing records that go back to 1893-1895.

What are the consequences on vegetable crops and what might you see in the next few days?

ASPARAGUS: Frost and freezes will kill spears and they usually turn them back and wilt. Production will be slowed but should resume. Yield or vigor may be affected depend ing

where you are in the cutting season.

BROCCOLI and CAULIFLOWER: Injury to the growing point may result in no heads or several small heads. In cauliflower, plants may button (development of a small head) depending on the stage of development. Some plantings may be normal.

COLLARDS and KALE: premature bolting is a possibility.

RADISH: Some bolting, but much of the crop will be normal.

SWEET CORN: Plants will be yellow and in some cases purple due to the cold weather. The purple color is due to phosphorus deficiency. Normal color will return as temperatures rebound. In cases where seed was planted before the heavy rains, expect some seed or seedling rot. This has already been observed in a few fields. Where there is frost or freeze injury, plants in the fourth or fifth leaf stage will regrow since the growing point is below the ground. In fields where plants are beyond the 6th leaf stage, these fields will probably need to be replanted. Frosted fields where plants are able to recover will be later in maturity than normal.

TOMATOES: Recently transplanted tomatoes, not yet established, will look deficient with a dark olive green and yellow color in the leaves. The undersides of some of the leaves will have a purple color. Again, this is phosphorus deficiency due to the cold temperatures. The normal bright green color will return as plants become established and temperatures return to normal. A starter solution at the time of planting allows for a quick recovery. If you already applied a starter solution, do not apply any additional solution since this could lead to salt injury. Some large fruited fresh market varieties may have a higher incidence of catfaced fruit due to the cold temperatures. Some cultivars are more sensitive than others to this disorder. Slightly frosted plants will have leaves that turn black and later appear wilted. If the injury is not too severe, plants should resume normal growth. Damaged tissue

will be susceptible to infection by diseases and a fungicide should be applied for protection.

Replanting is the best option with any amount of significant injury to stems and leaves.

VINE CROPS: Low temperature stress will result in slow germination and seedling emergence and cause a decrease in plant growth. Smaller stems and leaves are typical.

Since we had temperatures below 50 degrees, it will be common to see white areas on the cotyledons and white or light brown margins on expanded leaves. This is often confused with Command injury. Melons and cucumbers are the most sensitive and with temperatures below 50, these plants tend to go backwards and ultimately death. Chilling injury is increased by: duration of the chilling, lower temperatures, high intensity light during chilling, high wind speed and high growing temperatures before chilling. Frost or freezing usually results in death.

VegNet Vol. 9, No. 9. May 22, 2002, Ohio State University Extension Vegetable Crops

On the WEB at: http://vegnet.osu.edu

Invitation for Grower Contributors

Would you like to put your two cents into the field observations and topics that are reported this newsletter? Are you able to spend a few minutes each week jotting down what's happening on your farm? We are looking for growers who would like to contribute their observations to this newsletter. Your eyes, your expertise –and your questions – will help make this newsletter more timely, more complete, and more relevant to growers around the state. You can be sure that if you are noticing some pest or crop condition on your farm, other growers are too. What better way to have YOUR questions answered! We will send you a reminder via email every Tuesday, with a short list of questions that you can answer in 10 minutes. (FAX is possible, but email is much preferred.) If you would like to be part of a group of grower reporters, please contact Stephanie Degray and Ruth Hazzard at umassvegetable@umext.umass.edu or call 413-545-3696.

Drought Conditions in Massachusetts – A Look at the Groundwater

Are we out of the drought? With recent rainfall, stream flow in all areas is higher than normal, but drought experts caution us to look at the groundwater to make drought determinations.

The United States Geological Survey (USGS) maintains a series of observation wells throughout the country where depth to groundwater is digitally recorded (at 60-minute intervals), up-linked to satellite and posted on their website. In Massachusetts there are eight observation wells, and the website URL is:

http://ma.water.usgs.gov/ground_water/ground-water_data.htm

The table below is a summary of a small part of the data from the website. It indicates that some areas have higher than normal groundwater levels (those in the 75th quartile have higher groundwater levels than in 75% of previous years), normal levels (50th quartile), and some wells are lower than in the 75% of the previous years (25th quartile). The Q25 (25th quartile) is shown to provide an idea of what is a low level for that particular well. All sites are well above record low groundwater levels. (Measurements are from the ground surface to the groundwater level; higher numbers mean lower water levels.)

It appears that some areas are out of drought conditions, while other areas still have lower groundwater levels than are normal. However this is a snap shot of the immediate conditions. Reviewing additional information over the next month will provide more confidence in the assessment.

More drought information with links to many data-rich sites can be found at the UMass Drought Information website at **http://www.umassdroughtinfo.org**

Craig Hollingsworth, UMass Extension IPM Program

DEPTH TO GROUNDWATER AT USGS OBSERVATION WELLS IN MASSACHUSETTS

WELL SITE	COUNTY	YEAR THE WELL WAS ESTABLISHED	HISTORIC MEAN FOR MAY (FT)	RECORD LOW (FT)– YEAR	Q25 (FT)	DEPTH OF GW ON MAY 22, 2002	QUARTILE
LAKEVILLE	PLYMOUTH	1964	13.6	23.7 -1966	15.1	16.5	25
DUXBURY	PLYMOUTH	1965	8.2	10.7 - 1965	8.5	7.4	75
NORFOLK	NORFOLK	1963	5.8	8.0 - 1997	15.1	5.9	50
PELHAM	HAMPSHIRE	1981	13.2	NO DATA	14.8	15.6	25
PITTSFIELD	BERKSHIRE	1963	14.6	27.6 - 1964	15.1	14.8	25
ACTON	ESSEX	1965	17.8	21.9 - 1966	18.5	19.7	25
WAKEFIELD	ESSEX	1965	6.5	10.0 - 1965	7.0	6.0	75
WILMINGTON	ESSEX	1951	7.3	11.3 - 1957	7.8	7.2	50

Vegetable IPM Newsletter Ruth Hazzard, editor, published weekly from May to September and includes contributions from the UMass Extension Vegetable Program faculty and staff, growers, private IPM consultants, USDA agency staff, and University researchers and Extension specialists from around the region. Special thanks to John Devine, Franklin County FSA, for contributing to this week's crop report.

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