UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

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CROP CONDITIONS

Growers report that most crops are taking off, catching up after weeks of slow growth. Catching up on seeding and transplanting along with weed management and scouting for early-season pests is keeping everyone busy. Most farmers markets, farmstands, and CSA's are up and running by now, featuring early greens and root crops, scallions, asparagus, rhubarb. Certain crops have not responded well to the sudden change to heat, strong sun, and drying soils. High soil moisture, especially saturated soils with low oxygen levels, do not foster deep root growth. Plants with limited root growth are not as able to scavenge nutrients and water as soils dry out, and may show signs of nutrient deficiency including nitrogen. Tipburn may be most likely to occur after a period of low evapotranspiration, as occurs in cloudy cool weather, followed by bright sunny days that rapidly increase evapotranspiration and increase the demand for calcium in rapidly growing leaves. Brassicas, both larger longer-season crops like broccoli and short-season crops like salad mix or bok choy, could bolt or button in response to the cold temperatures of the first week of June, when temperatures were in the low 40's at night, followed by intense heat of the past week. We observed rapid increase in the numbers of thrips in onions this week, especially the light-yellow nymphs. Scout for thrips in onion, CPB in potato, striped cucumber beetle in cucurbits, and ECB in sweet corn as tassels start to emerge.

WHAT WILL THE 'COMMONWEALTH QUALITY' SEAL MEAN FOR GROWERS?

The Massachusetts Department of Agricultural Resources (DAR), UMASS Extension, industry associations from many commodities and local farms have worked together to create a new set of food safety and sustainability standards for the "Commonwealth Quality" program. The Commonwealth Quality Seal serves to identify locally sourced products that are grown, harvested, and processed right here in Massachusetts using practices that are safe, sustainable and don't harm the environment. Commonwealth Quality encompasses not only vegetables and fruits, but forest products, lobster, and seafood as well.

The sustainability practices are based Best Management Practices Guidelines that were written by UMass Extension in collaboration with MA Farm Bureau and DAR. Best Management Practices for vegetables and fruits include soil and water conservation, integrated pest management (IPM), worker protection, and food safety. These standards serve as a prerequisite for farms that wish to become certified to sell products using the Commonwealth Quality label. Becoming part of Commonwealth Quality (CQ) involves taking a self-assessment survey of practices and agreeing to follow guidelines on the use of the Commonwealth Quality Seal. Agricultural goods must be grown, harvested and processed within Massachusetts in order to qualify. Most state agriculture label programs do not necessitate that a product or business meet specific standards to qualify for use of a promotional logo. Commonwealth Quality establishes a clearly defined set of standards for program participants. This highly structured program and the collaboration behind it represent a significant advancement over traditional state label programs. As a result, consumers will be able to easily identify and enjoy certified products, knowing they are grown, harvested and processed in Massachusetts using practices that are safe and environmentally friendly. Commonwealth Quality is not designed to replace full USDA GAP certification but may be considered an alternative by some customers.

Vegetable and fruit growers submit their self assessments, their signed Commonwealth Quality contract, and a fee of $50 to cover costs of printing, postage, and time for the New England vegetable & Berry Growers Association, which will work with DAR to complete the process.

The program, launched in September 2010, has gained support from prominent trade organizations and Massachusetts farms alike. To date, the initiative has been endorsed by the New England Vegetable and Berry Growers' Association and the Massachusetts Fruit Growers Association, and more than 50 farms have registered to become certified. Each agricultural sector – produce, dairy, forest products, lobster, and seafood – will have its own unique set of standards that focus on safety and sustainability.

Growers who participate will be able to use the Commonwealth Quality in the marketplace, and highlighting their proactive approach to food safety and sustainability practices. It is yet one more way to showcase the extra value of Massachusetts-grown food and farm products!

For more information about Commonwealth Quality, visit www.mass.gov/cqp, or contact Michael Botelho at (617)-626-1721 or michael.botelho@state.ma.us

To view the sustainability standards for fruits and vegetables, please visit the UMass Extension Agriculture and Landscape site:

http://extension.umass.edu/agriculture/index.php/services/commonwealth-quality-seal

COMMONWEALTH QUALITY PRODUCE KICK-OFF EVENT

June 15 at Verrill Farm: Announcing the first 20 local farms with Commonwealth Quality certified products

Wednesday, June 15, 2011

9:45 a.m. – 12:00 p.m.

Verrill Farm, 11 Wheeler Road, Concord, MA 01742

Light refreshments will be served.

Massachusetts Department of Agricultural Resources Commissioner Scott J. Soares will join Verrill Farm of Concord and other growers to announce the first Commonwealth Quality certified farms and provide details about food safety and sustainability standards adapted for the state's Commonwealth Quality Program (CQP).

The program, launched in September 2010, was created as a means to help consumers identify high-quality agricultural and seafood products that are produced, harvested, and processed responsibly within Massachusetts. Since the launch, 50 farms have applied and several industry organizations have pledged support for the program.

At this event, farm owners will present how these specialized standards came to be, how they are being put into practice, and how they benefit consumers. Demonstrations will be used to highlight key practices.

Come learn about what's being done to encourage responsible farming in Massachusetts and meet the industry professionals who are leading this effort.

Please RSVP by contacting Michael Botelho, Commonwealth Quality Program Coordinator

(617)-626-1721 or michael.botelho@state.ma.us

Massachusetts Department of Agricultural Resources

251 Causeway Street, Suite 500, Boston, MA 02114-2151

MEXICAN BEAN BEETLE: PLAN AHEAD FOR EFFECTIVE BIOLOGICAL CONTROL

If Mexican bean beetles have historically been a problem on your farm, you will very likely see them again this year. They may be pests on snap beans, lima beans, and, more recently, soybeans. While they are not a pest on every farm, some

farms report significant damage from these pests and have to take action to prevent crop loss. Using biological control can reduce the need for insecticides.

Mexican Bean Beetle Adults & Larvae

Mexican bean beetle (MBB) adults are coppery brown with black spots. They look very much like large ladybeetles and in fact are closely related – but unlike lady beetles they feed on leaves, not other insects. Shortly after adults arrive in a bean field, they lay yellow-orange egg masses on the underside of bean leaves. These hatch into bright yellow, spiny, oval larvae, which feed, molt several times as they grow, and pupate on the underside of leaves. Feeding damage from adults and larvae can reduce yield and injure pods if numbers are high. There are 2-3 generations per season, usually increasing in numbers with each generation. Adults and eggs were spotted in beans in the Connecticut valley this week. In response, The UMass Extension Vegetable Program will be releasing the parasitic wasp, *Pediobius foveolatus*, in bean fields throughout the state starting early next week and then again the following week.

Pediobius foveolatus is a commercially available biological control agent for Mexican bean beetle control and has a good track record in the mid-Atlantic states and among New England growers who have tried it. (Pediobius is pronounced "pee-dee-OH-bee-us"). It is mass-reared and sold by the New Jersey Dept of Agriculture and is also available from other beneficial insect suppliers. This small (1-3 mm), non-stinging parasitic wasp lays its eggs in Mexican bean beetle larvae. Wasp larvae feed inside the MBB larva, kill it, and pupate inside it, forming a brownish case or 'mummy'. About twenty five adult wasps emerge from one mummy. Adult wasps will emerge from mummies within 14 to 18 days after stinging, or 2-3 days of receipt. The parasitoids are shipped to farms as mummies or as adults.

Mexican Bean Beetle Larvae Parasitized by Pediobius foveolatus

Pediobius is well suited to our succession-planted snap bean crops. The first bean planting serves as a 'nurse crop' to establish the population of Pediobius that will be hard at work in successive plantings all summer. Control continues and in fact gets better as the season progresses and successive generations of the wasp emerge and search out new bean beetle larvae. Planning 2-3 releases at 7-10 day intervals will help ensure good timing and coverage on several plantings. After a release in the first planting, it is advisable to leave that planting intact for a while, until the new generation of wasps has emerged from their mummies.

As with any biological control, make releases as soon as the pest is present, not after it has built up to damaging numbers. The New Jersey Dept of Agriculture Beneficial Insect Rearing Laboratory recommends two releases, two weeks in a row, coinciding with the beginning of Mexican bean beetle egg hatch. Wasps will lay their eggs in larvae of any size, but it is best to target the newly-hatched young MBB larvae. This will give control before damage has been done. Thus, timing is important. Watch for eggs and time the shipment for the first hatch of eggs into larvae. If in doubt about the timing of the hatch, release as soon as you see the eggs – if you wait for the larvae you may be playing catch-up. Since we saw eggs this week, we plan to release mummies containing adult *Pediobius foveolatus* early next week that will be targeting larvae hatching from these egg clusters. Wasps will remain near the release site for 7 to 10 days following release. To insure success, we will repeat the release 7 days later in the same fields.

The release rate should be at least 2000 adult wasps per field for less than an acre, or 3,000 per acre for fields of one acre or more. Mummies are frequently shipped in screen bags. Simply secure to the underside of a bean plant. IPM Laboratories recommends 160 mummies/A, split between 2 releases for light infestations, 640 mummies/A, split between 2 releases for heavy infestations and for the home garden, a minimum of 10 - 15 mummies.

Like beans, Pediobius wasps are killed by frost so annual releases are necessary. Most fungicides will not be harmful.

Many insecticides will be harmful.

If you would like assistance in using these biocontrols in your bean crops please call Amanda Brown at the UMass Extension Vegetable Program at 413-577-3976 or 413-545-3696 or email at brown@umext.umass.edu.

Plan ahead by contacting a supplier to inform them of your expected release dates and acreage. Contact information for New Jersey source: Tom Dorsey, 609-530-4192; address; NJDA, Phillip Alampi Insect Lab, State Police Drive, W. Trenton, NJ 08628. http://nj.gov/agriculture/divisions/pi/prog/beneficialinsect.html. You'll also get advice on how to use the wasps from this office. Pediobius is also available from the following suppliers: Green Spot Ltd., NH., www.greenmethods.com 603-942-8925; IPM Laboratories, NY 315-497-2063; ARBICO, 800 -827-2847 (AZ), http://www.arbico.com/; Network (TN), 615-370-4301, http://www.biconet.com/.

-- A.Brown, R. Hazzard

BROWN MARMORATED STINK BUG

Halyomorpha halys

Brown Marmorated Stink Bug

The brown marmorated stink bug (BMSB), an insect not previously seen on our continent, has now been found in Massachusetts and at least 22 other states.

This true bug in the insect family Pentatomidae is known as an agricultural pest in its native range of China, Japan, Korea and Taiwan. It was first observed in the US Allentown PA in 1998 and since then has become a serious pest of fruit, vegetables and farm crops in the Mid-Atlantic region. It is probable that it will become a pest of these commodities in other areas in the United States.

Description

The adult BMSB has a shield-shaped body (a trait of most stink bugs). It is about 3/4 inch (14-17 mm) long, 3/8 inch (8 mm) wide, and mottled or marbled grey-brown in color. Its underside is white, sometimes with grey or black markings, and the legs are brown with faint white banding. One way to distinguish a BMSB from other stink bug species commonly found in Massachusetts is by the alternating dark and light bands on the insect's last two antennae segments as well as darker bands on the membranous, overlapping part at the rear of the front pair of wings. They have patches of coppery or bluish-metallic colored puntures (small rounded depressions) on the head and pronotum. The name "stink bug" refers to the scent glands located on the dorsal surface of the abdomen and the underside of the thorax. BMSB is also commonly confused with the Western Conifer Seed Bug, another insect which often invades homes in the fall looking for a place to overwinter.

Brown Marmorated Stink Bug Adult. Note the Light Banding on Antennae and Darker Bands at the Rear of the Front Wings

Fresh Hatch of Brown Marmorated Stink Bug Nymphs

The eggs are elliptical (1.6 x 1.3 mm), light yellow to yellow-red with minute spines forming fine lines. They are attached, side-by-side, to the underside of leaves in masses of 20 to 30 eggs. There are five nymphal instars (immature stages). They range in size from the first instar at 2.4 mm to the fifth instar that is 12 mm in length. The eyes are a deep red. The abdomen is a yellowish red in the first instar and progresses to off-white with reddish spots in the fifth instar. Protuberances are found before each of the abdominal scent glands on the dorsal surface. The legs, head and thorax are black. Spines are located on the femur, before each eye, and several on the lateral margins of the thorax.

Life History

This species probably has a single generation per year in Massachusetts depending on the temperatures. However, in parts of sub-tropical China, records indicate from four to possibly six generations per year. Adults will emerge sometime in the spring of the year (late April to mid-May), and mate and deposit eggs from May through August. The eggs hatch into small black and red nymphs that go through five molts. Adults begin to search for overwintering sites starting in September through the first half of October.

Damage

In its native range, it feeds on a wide variety of host plants. In the United States, BMSB damage has been reported on vegetable crops such as sweet corn, tomatoes, lima beans and green peppers. It is likely that the list of affected crops will grow as this pest spreads and populations become established in new areas. Fruits attacked include apples, peaches, figs, mulberries, citrus fruits and persimmons. This true bug has also been reported on many ornamental plants, weeds, soybeans and beans for human consumption. Feeding on fruits and vegetables results in scarring, cat-facing, and spotting of developing fruits and vegetables, reducing marketability. Crop damage can be significant.

Reporting

The MA Dept of Ag Resources is interested in collecting early-season detections of BMSP. If you suspect you have found BMSP, please submit a report to Massachusetts Introduced Pests Outreach Project at massnrc.org/pests/report.aspx. The UMass Extension Vegetable & Fruit Programs have traps up at a number of farms across the state and will report any significant captures.

- excerpted and adapted by A. Cavanagh from original work by Steve Jacobs, Sr. Extension Associate, Penn Sate.

POSTEMERGENCE YELLOW NUTSEDGE CONTROL IN VEGETABLES

Yellow nutsedge (*Cyperus esculentus*) is a perennial sedge (not grass) that emerges in early May from a small tuber or 'nutlet'. The plants will begin to form new tubers in July and August, so it is important to manage it before this occurs. In general, between-row cultivation will not control emerged nutsedge well, but only move the plants down the row with the cultivator and spread it in the field. However,

in fallow fields, regular tillage during the season can manage this weed well for future crops.

There are postemergence herbicide options that are available to manage it. Sandea (or Profine) (halosulfuron) is registered on a variety of vegetable crops. It is in the sulfonylurea class of herbicides and is effective at very low rates, so it is important that application equipment be well calibrated. Sandea can be applied preemergence or postemergence in several crops. The crops that Sandea can be used on include asparagus, sweet corn, tomatoes, beans, cucumbers, pumpkins and some melon types. For pumpkins, applications can be made to direct seeded crops after seeding but before 'cracking'. Postemergence applications should not be made until the crop has two to five leaves. A nonionic surfactant, but not a crop oil, should be added for optimal control. Although Sandea will control or suppress yellow nutsedge and a number of broadleaf weeds, common lambsquarters will not be controlled with postemergence applications.

Weeds should be in the 1-3 inch stage when treated. Weeds that are larger than this will not be well controlled. Slight stunting and yellowing of the crop has been observed within a few days of postemergence applications. Usually the crop recovers quickly with little effect on yield. Basagran (bentazon) offers an alternative selective control option in sweet corn, beans and peas.

Basagran will also control many broadleaf weeds but it will not control grasses. Experience with Basagran suggests that application in high relative humidity (>80%) and high temperature (>80°) will afford optimal control. Often, a repeat application of either herbicide is necessary if yellow nutsedge is dense.

- reprinted from A. Senesac, Cornell's Long Island Research Lab

Corn report

Some early plantings are now reaching pre-tassel or even tassel stage. Row cover has been removed from early fields and later succession plantings continue to go in including bare ground and transplants. Farms that are using the biological control for European corn borer, Trichogramma ostrinea, are into their second week of releases with at least one more release to go. European corn borer trap counts are still low. Total trap captures in Hadley MA were at 9, 4 adult moths were found in Millis MA and 0 in Amherst. Southern New Hampshire reported trap counts in the low teens this week. High temperatures this week pushed ECB development and trap counts are anticipated to rise over the next few days. Next week we will have many more sites to report as traps are now up on all cooperating farms.

No field damage from ECB feeding has been seen yet, but scouting has begun in pre-tassel or tasseling fields. It is best to control ECB caterpillars when they are feeding on emerged tassels. This is when the caterpillars are most vulnerable to sprays which can easily target the exposed tassels. Many early plantings will be reaching this stage soon, so now is a good time to think ahead and consider a less toxic spray material to conserve the population of beneficial insects that feed on the aphids in your fields. Conserving beneficials may save you from having to spray for aphids later on in the season. Now is also a good time to develop your weekly scouting and monitoring routine.

There have been a few reports of suspected army worm in early corn fields this season. Common armyworm, also known as armyworm or true armyworm, migrates from southern areas anytime from March to September. Eggs are laid on grasses and grains in preference to corn and other crops. Larvae feed at night and are grayish green with a broad stripe on each side and a yellow-brown head. Damage is similar to fall armyworm and is usually sporadic and not sufficient to require treatment. Outbreaks are not common in New England but may occur and cause significant damage. The last significant outbreak in Massachusetts was about ten years ago. For current information on registered control for common armyworm please consult the New England Vegetable Management Guide or visit their website www.nevegetable.org.

For information on scouting procedures and implementing a sweet corn IPM program on your farm, visit www.umassvegetable.org to download a copy of the UMass Extension publication Using IPM in the Field Sweet Corn Insect Management Field Scouting Guide or email umassvegetable@umext.umass.edu to request a free hard copy.

- A. Brown

Farmers' Market Promotion Program

The USDA Farmers' Market Promotion Program (FMPP) announced availability of 2011 funds in the Federal Register. See www.gpo.gov/fdsys/pkg/FR-2011-06-01/html/2011-13483.htm. The FMPP was created through an amendment of the Farmer-to-Consumer Direct Marketing Act of 1976. The grants, administered by the FMPP, are targeted to help improve and expand domestic farmers' markets, roadside stands, community-supported agriculture programs, agri-tourism activities, and other direct producer-to-consumer market opportunities.

NOTE: Applications due by July 1! Approximately $10 Million is available.

The FMPP home page is here: www.ams.usda.gov/FMPP

FOR FURTHER INFORMATION CONTACT: Ms. Carmen Humphrey, Branch Chief, Marketing Grants and Technical Services Branch, Marketing Services Division, Transportation and Marketing Programs, AMS, USDA, on 202-720-8317, or via facsimile on 202-690-0031.

Upcoming meetings

Commonwealth Quality Produce Kick-Off Meeting

Wednesday, June 15, 2011 9:45 a.m. – 12:00 p.m.

Verrill Farm, 11 Wheeler Road, Concord, MA 01742

Light refreshments will be served. Please RSVP by contacting Michael Botelho, Commonwealth Quality Program Coor-

dinator (617)-626-1721 or michael.botelho@state.ma.us

High Tunnel Workshop and Vegetable & Berry Twilight Meeting.

Thursday June 16 3-7PM

Ledgewood Farm, Moultonborough NH.

Hosted by Ed Person of Ledgewood Farm. For more information, contact Russ Norton at 603-447-3834 or russell.nor¬ton@unh.edu

Eastern CRAFTS Meeting

June 22 4-6pm

Waltham Community Farm

Organic insect management with Ruth Hazzard. Includes backpack sprayer calibration. Bring insect samples and ques¬tions. For more information contact Amanda Cather, Waltham Fields farm manager 781-290-8521 or UMass Extension Vegetable Program at 413-545-3696. Sponsored by Eastern Mass CRAFTS & UMASS Extension. Open to all farmers.

Massachusetts Beekeeper's Association Field Day Meeting

Saturday June 25

UMASS Agronomy Farm, 89-91 River Road North South Deerfield, MA

Hosted by: Franklin County Beekeepers' Association

Admission free. Lunch requires preregistration. The menu will be pulled pork sandwich, beans, cole slaw or potato salad and corn bread, and bottled water. For more information see www.massbee.org

Mass. Farm to School Project Invites Distributors/Vendors to Discuss Institutional Demand for Locally Grown Foods

Wednesday June 29th, 2:00 - 3:30 pm

Rovezzi's Ristorante, 2 School St. Sturbridge, MA

Farmers with an interest in selling products to institutions are welcome to join a statewide "shoptalk" meeting with distributors, aggregators, and trucking operations. In preparation for Mass. Harvest for Students Week (Sept. 23-27), we'll discuss procurement and promotion of locally grown products, transparency and traceability of food from the farm to the customer, recently-passed legislation mandating local food purchasing by state agencies, and more. Primarily intended for businesses interested in being a "go-to source" for local product for institutions, we will hear from the procurement director of a college about his local foods requirements.

This meeting is free and refreshments will be served. Please RSVP to info@massfarmtoschool.org or by calling 413-253-3844.

Mid New England Grain Conference and Festival: 'Bread, Beer & Biodiversity'

July 14 - 15, 2011 9:00 a.m. – 4:30 p.m.

Join us for our two day event to learn about the reintroduction of grains into NE farming systems and to celebrate the harvest with a festival on the second day. Come and listen to a variety of speakers whose expertise in grain breeding, production, marketing, and value-added products will have you planting your own field of grain in no time!

Day 1: July 14 – Growing Local Grains Conference

UMass Crops, Animal, Research and Education Farm, 89-91 River Rd, North of RT. 116, South Deerfield MA (Exit 24 on I-91)

Day 2: July 15 – Community Grain Festival

Colrain Seed Farm, 400 Adamsville Road, Colrain, MA 01340

Cost is $25* per day per person or $40* for both days per person. (* includes lunch)

Please Mail Registration by July 8, 2011 to:

Att: Jacqui Carlevale University of Massachusetts Extension

305 Bowditch Hall, 201 Natural Resources Rd., Amherst, MA 01003-9294

If you have questions or would like to register by phone or email,

Phone: 413-545-5221 Email: jcarleva@psis.umass.edu

For further information visit: http://extension.umass.edu/vegetable/

Fruit Growers Summer Meeting

Wednesday July 18, 9:00 - 2:00pm

Parlee Farm, Tyngsborough MA

For more information contact Fruit Growers Association, Wes Autio 413-545-2963 autio@pssci.umass.edu.

UMass Extension Field Days

August 2-3

UMASS Crops Research & Education Center

Stay tuned for details!

Vegetable Notes. Ruth Hazzard, editor and Amanda Brown and Andrew Cavanagh, assistant editors. Vegetable Notes is published weekly from May to September and at intervals during the off-season, 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 and photographer is R. Hazzard if none is cited.