Vegetable Crop Update #3  
May 28, 2010

If you would like an electronic copy of the newsletter via email contact me at ajbussan@wisc.edu.

Events: Contact me for more information
June 8, Tuesday, 9-3, Fresh Market Vegetable Grower Field Day, King Berry Farm, Waupaca
June 16, Wednesday, Evening fresh market walking tour, Wilton, Monroe County
June 22, Tuesday, Evening fresh market walking tour, St. Croix County
July 6, 10 am, Walking Farm Tour, Tipi Produce, Rock County
July 12, Monday, Evening fresh market walking Tour, Columbia County
July 20-22, Farm Technology Days, River Falls, WI
July 27, Tuesday, Hancock Ag Research Station Field Day, 12:30 to 4:00 pm
August 10-11, Processing Snap Bean and Sweet Corn Demo, Hancock WI

Vegetable Crop Update – A.J. Bussan, Department of Horticulture, UW-Madison, Tel. No. 608-225-6842, email: ajbussan@wisc.edu

Warm and relatively dry weather continues to persist in much of the state. Scattered storms last Friday and Tu Wed this week led to locally heavy rains. The conditions continue to promote rapid growth of many crops and have created relatively good growing conditions for planting of summer annual crops.

Potatoes. The crop is quickly growing with stolons formed on most of the crop across varieties and different planting dates. Some have observed hooking in stolons and beginning of tuber initiation. We are seeing some stand issues in several varieties we are evaluating this summer. Rhizoctonia did prune some stems on the Superior, but they quickly branched and formed new stems. Rhizoctonia has also appeared to prune roots and girdle stems on other varieties which could stress plants during dry periods. We have seen up to 10% seed piece decay in several lines. Plants managed to emerge from the soil, but likely won’t produce much as the plants are smaller and the seed piece is completely gone already. Finally, several varieties had a high proportion of blind seed pieces leading to poor germination.

Potential ET has been well above 0.2” for many days over the past week. The small crop canopy means actual ET is lower than potential ET in many of the fields. The hot conditions can stress the crop with a small root system. The potato is not as susceptible to drought stress until the crop initiates tubers which has happened in some fields or is likely to happen within the week for late planted potatoes in other fields.

Vegetable Insect Update – Russell L. Groves, Vegetable Entomologist, Applied Insect Ecologist, UW-Madison, Department of Entomology, 608-262-3229 (office), (608) 698-2434 (cell), or e-mail: groves@entomology.wisc.edu.

Potato – Overwintering Colorado potato beetle (CPB) adults have begun to emerge and become very active during the warmer afternoons in the last week. Typically, adult CPB will over winter in the soil along field margins near windbreaks and other wooded areas surrounding potato fields. A portion of the population will also attempt to over winter inside fields previously planted to potato. Similar to last year, the snow pack arrived early and endured in many locations through much of the winter in protected areas around grower’s fields. Many of these non-crop locations surrounding crop fields in the Central Sands production area experienced very little frost throughout the winter period and this provides a good overwintering refuge for populations of CPB. Adult CPB is actively mating and initial egg deposition will soon follow. First egg masses are just beginning in southern Wisconsin at our Arlington Agricultural Experiment Station and many egg masses will soon follow in the Central Sands with the warm forecast temperatures. By this time next week, growers and pest management practitioners should have considered the use of the first of 2 successive applications of the reduced risk insecticide, novaluron (Rimon® 0.83EC) for control of immature CPB. This compound has been demonstrated
to be a very effective tool for management of 1st generation CPB and the initial application can be applied when approximately 10-50% of egg hatch has occurred. For most growers in southern Wisconsin, this milestone will be reached by mid to late last week and we should be considering a second application within 7 to 10 days following the initial application.

Onions - In 2009, onion growers experienced moderate to, in some cases, quite low populations of onion thrips. In 2010, however, we are beginning the year with above average temperatures and moderate precipitation. In the early spring, many ecological indicators suggested that the phenology of many insect pests was 10-14 days ahead of normal. In many fields, few onion thrips have been recorded on emerging direct-seeded or transplant onion crops. Populations have been estimated to be < 1 thrips per plant which is far below our current recommended threshold of 3 thrips / leaf. However, as these warm and dry conditions prevail in the 10 day forecast, onion thrips populations can be expected to increase and begin to approach established thresholds. Again in 2010, Wisconsin received Section 18, Emergency Exemptions from the US EPA for the use of spirotetramat (Movento®) against onion thrips which will terminate 15 September 2009. As stated on the exemption authorization, the product may be used consistent with all applicable directions, restrictions, and precautions outlined on the current Section 3 label. Movento may be applied by air or by ground at a rate of 5.0 fl oz / acre of formulated product (0.08 lbs ai/acre) and may not exceed a total of 2 applications per crop season with a 7 day preharvest interval (PHI). Applicators must possess a copy of the use directions for Movento on dry bulb onion in Wisconsin prior to any field application. Similar to 2009, Wisconsin onion growers have also received a recertification in 2010 for the Section 18, Emergency Exemption use of abamectin (Agri-Mek 0.15EC®) against onion thrips which will also terminate 15 September 2009. As stated on the exemption authorization, the product may be used consistent with all applicable directions, restrictions, and precautions outlined on the current Section 3 label. Agri-Mek may be applied by air or by ground at a rate of 10.0 – 16.0 fl oz / acre of formulated product (0.012 – 0.019 lbs ai/acre) and may not exceed a total of 2 applications per crop season with a 7 day preharvest interval (PHI).


Few highly effective products are available for onion thrips control. Although registered products span six insecticide classes (Table 1), control with many of these products has been mediocre to poor (e.g., many pyrethroids, carbamates and the neonicotinoid, Assail). Only two effective insecticides have been recently registered on onion in Wisconsin. The first is Radiant®, which is effective against both onion thrips larvae and adults and has very good residual activity lasting 7 and 10 days. The next is Movento which is systemic and has residual activity of 7 to 14 days. Because Movento may be somewhat slower in acting upon immature thrips, we propose that it should be used during the first half of the season when adult populations are relatively low or building. Also, reductions in numbers of thrips larvae may take 3 to 4 days after Movento is applied. Based on field research in WI, NY and elsewhere in the US over the past several years, Radiant, Movento, and Agri-Mek have provided very good control of onion thrips. Although not nearly as effective, a Section 24(c) for Vydate L is still current in Wisconsin.

Avoid mixing insecticides and other fungicides in the spray tank to control thrips. Although tank mixing products may provide logistic simplicity, it increases the risk that the thrips will develop resistance to both products used in the mix faster than if each product is used separately. Furthermore, because many fungicides contain spreader / stickers as part of their formulation, anecdotal evidence suggests that many systemic insecticides (e.g. Movento & Agri-Mek) may not gain entry into the plant vascular system. Entry into the plant conducting tissues is critical to ensure that these compounds will move systemically (Movento) or trans-laminar (Agri-Mek) within plants and reach immature thrips stages. Based on past studies, two applications of the same product timed 7 to 10 days apart are strongly suggested to see a reduction in thrips populations.
Table 1. A current list of products for each Mode of Action chemical class labeled for onion thrips control in WI in 2010.

<table>
<thead>
<tr>
<th>Mode of Action</th>
<th>Chemical Class</th>
<th>Product Name</th>
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<tbody>
<tr>
<td>Tetramic Acid</td>
<td>Abamectin</td>
<td>Movento</td>
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<td></td>
<td>Spinosyn</td>
<td>Agri-Mek</td>
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<td></td>
<td>Neonicotinoid</td>
<td>Radiant SC</td>
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<td></td>
<td>Carbamate</td>
<td>Assail 30SG</td>
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<td></td>
<td>Organophosphate</td>
<td>Lannate LV</td>
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<td></td>
<td>Pyrethroid</td>
<td>Vydate L</td>
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<td>Penncap-M</td>
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<td></td>
<td></td>
<td>Ammo 2.5EC</td>
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<td></td>
<td></td>
<td>Mustang Max</td>
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<tr>
<td></td>
<td></td>
<td>Pounce 3.2EC</td>
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<td></td>
<td></td>
<td>Warrior II</td>
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Onion fields should be scouted for onion thrips before a decision is made to spray the field. In many cases, infestations will begin along an edge or edges of the field. When this occurs, many thrips may be seen along edges and much fewer or none in other parts of the field. If possible, only spray the infested edges rather than the entire field. Otherwise, wait to spray the entire field when the average number of thrips sampled throughout the entire field reaches a threshold.

**Seed Maggot(s)** - With the prevailing warm conditions, we have reached the peak emergence and adult flights of seed corn maggot in southern Wisconsin. The potential exists for increased damage to early season, direct seeded vegetable crops caused by infestations of seed maggots (*Delia* spp.). Bean seed maggot in snap and dry beans, onion and seed corn maggot in dry bulb onion, cabbage maggots in cole crops, and seed maggots in direct seeded and early transplant cucurbits are just a few of the species and crop combinations that we have and continue to expect to see this spring. In general, the early season transplants, and directed seeded crops that are slow to emerge and begin rapid growth can be most severely damaged. The adult maggots are often dusky gray, bristly, flies that resemble a housefly. The damaging larval stages are legless, white or opaque in color, and are typically around ¼ to ½ inch in length with the body tapering slightly towards the head. Maggots can feed internally as well as on the root surfaces and these tunnels may provide an entry point for other plant pathogens such as soft rot. Affected plants appear stunted and stand emergence can be uneven. Direct seeded crops are often available with insecticide pretreatments on the coated seeds as a means of protecting against these early season pests. Incorporation of green manures or direct amendments of animal manure should be applied at least two weeks in advance of transplanting or seeding to reduce the potential for infestation by seed maggots. Specifically, adult flies are attracted to the volatile emissions of decomposing organic matter in the soil following the incorporation of green manure cover crops or other organic amendments.

In general, seed maggots typically have 3 generations per year, with the first generation often causing the most damage in direct-seeded or transplant crops. We can forecast the appearance of generations by accumulating degree days after the frost has left the ground. For seed maggots, degree days (DD) are accumulated each day using the formula ((minimum temperature + maximum temperature)/2)-39. Peak emergence of the first three generations of adult seed corn maggot flies will occur after totals of 200, 600 and 1000 DD, respectively, have been reached. Emergence of onion maggots will similarly occur after DD accumulations of 680, 1950, and 3230 have been reached. Planting at intervals between generations (‘fly-free periods’), or in between first and second generation flights will help reduce damage. Current DD accumulations for different regions within the state are available through the Wisconsin DATCP: ([http://pestbulletin.wi.gov](http://pestbulletin.wi.gov)).

**Vegetable Disease Update** – A.J. Gevens, Department of Plant Pathology, UW-Madison, Tel. No. 608-890-3072, Email: gevens@wisc.edu

**Potatoes**
Late blight update: No late blight has been identified on potato or tomato plants in Wisconsin at this time. Late blight has been confirmed on tomatoes in northwestern Pennsylvania, with suspected reports on potato volunteers. This new report follows quickly behind those of the past 10 days in home gardens and/or greenhouses in Florida, Louisiana, and Maryland. While it is not yet known if this *Phytophthora infestans* is of the new US#22 type, it is concerning that the pathogen has been identified this far north, this early in the season. While these inoculum sources are getting geographically closer, we must also remember the potential sources right here in Wisconsin including volunteers, infected seed, cull piles, and composted tomato/potato plants that were infected in 2009 and may have survived the winter.

Fungicide label update: The supplemental 24c labels for Echo 720 and Echo Zn Agricultural Fungicides have been renewed, effective dates May 18, 2010 to December 31, 2014. The Echo registrant is Sipcam Agro USA, Inc. Echo products are chlorothalonil-containing and target diseases such as early blight and late blight. A maximum of 21.5 pt of Echo 720 (16 lb a.i.) per acre may be applied on long season potatoes.