

# Vegetable Crop Update - #1

May 30, 2007

**This is the first newsletter of the 2007 growing season. We'll try to update you weekly or as important information needs to be shared. We welcome your input and suggestions.**

**Potato Crop Update – Alvin J. Bussan, Potato and Vegetable Production Systems Specialist, UW-Madison, Horticulture Department, 608-262-3519, cell 608-225-6842 or e-mail [ajbussan@wisc.edu](mailto:ajbussan@wisc.edu)**

The snow storm on April 12<sup>th</sup> led to the one of the latest potato plantings in Central Wisconsin in recent memory. Weather since has been seasonable which allowed growers to catch up with planting schedules and led to crop emergence by early to mid-May in Central Wisconsin. A slight freeze on May 16 to 18<sup>th</sup> did little damage to potatoes. Most of the crop has been hilled and side dress fertilizer applications are underway.

Dry conditions across Northern Wisconsin allowed for efficient planting of potatoes in Langlade County. In addition, planting has begun across many of the muck farms in the state. The crop had not emerged by last Thursday following planting on on muck and at Antigo by May 10<sup>th</sup>.

Crop stands appear to be good to excellent as indicated by Walt Stevenson later in the newsletter. The crop emerged quickly decreasing the potential for damage to emerging sprouts. In addition, good soil moisture resulting from the snow and delayed planting resulting in longer conditioning of seed may have prevented seed piece decay. I have seen one plant with dark lesions on the stems in research plots, but few others showed any sign of stress during emergence.

The crop development has progressed in Central Wisconsin, with the canopy 25% closed in some varieties. Tubers had initiated on some round white and red varieties by Wednesday last week with the stolon tips showing enlargement. Other varieties, such as Russet Burbank, had just started forming stolons and there was no indication of tuber initiation, but that may have changed since last Thursday. Later emerging potato varieties such as Bannock Russet, had not formed stolons as of last week.

Tuber initiation is key time for crop development and beginning of the potato crops sensitivity to drought stress. Drought stress can lead to decreased cell division in newly forming tubers resulting in decrease in potential tuber size. In addition, drought stress during tuber initiation and during early bulking can lead to sugar end and limit solid content of harvested tubers.

The lack of rain has required growers to initiate irrigation on potato fields that have only limited canopy development. Relative ET rates for much of the potato growing areas have averaged nearly 0.2" per day. Soil moisture should be monitored closely during tuber initiation and early bulking to limit effects of drought stress on crop yield and quality.

Fortunately, soil temperatures have only reached 75 to 80 F on sand soils in part due to cool night temperatures. Open canopies with clear skies can lead to warm soils. Darker and heavier silt loam soils in Southern Wisconsin have reached soil temperatures of over 100 F over the past week.

Automatic e-mails will again be sent daily with ET and cumulative P-days. Growers can register for the e-mail service by entering the latitude and longitude of your farm or various fields at UW climatology website (<http://www.soils.wisc.edu/wimnext/water.html>).

**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](mailto:groves@entomology.wisc.edu).**

**Onions** - In 2006, onion growers experienced high populations of onion thrips (*Thrips tabaci*). Hot and dry conditions during mid summer contributed to elevated onion thrips populations. So far in 2007 we have observed increases in daytime average high temperatures coupled with below average rainfall increasing the chance of early onion thrips populations. A few adult onion thrips have been observed in the past 2 weeks upon recently emerged, direct-seeded onion. Populations of onion thrips are moving in from overwintering hosts into onion at this time and are often initially highest along the field borders, near woods or in the vicinity of grain or field crops.

Damage results from feeding by both adult and immature thrips. Thrips extract the contents of epidermal cells leaving them empty and necrotic resulting in 'silvering'. Chemical control of the onion thrips is presently the most consistent management measure. Earlier this month, Wisconsin received approval from the EPA for a Section 18, Emergency Exemption for the use of Carzol SP. Product in Wisconsin is available from the following suppliers:

- 1.) Helena Chemical Co., Madison, WI, Dave Allen, (608) 577-7907
- 2.) TH Agrichemicals, Plainfield, WI, Bob Zimple, (715) 335-6343
- 3.) UAP, Plainfield, WI, Joe Kapral, (715) 335-4900
- 4.) Wilbur-Ellis Co., Almond, WI, Tom Buchberger, (715) 366-2500

Yellow sticky traps can be used for monitoring the migration patterns of adult onion thrips from their over wintering hosts but are not informative regarding the decision to spray. Once the migration has begun, individual onion plants in several sections of the field should be inspected on a regular basis. Early in the season, surveillance and monitoring can be focused on the outer rows of plants with in the field where developing

populations are first detected. Leaves must be parted to reveal the youngest emerging leaf in the center of the plant where immature thrips can be counted. Thrips prefer this area because it is the most succulent part of the plant and provides excellent protection from weather and insecticides. Adult thrips may also be found on older leaves, particularly where leaves have folded over, providing a sheltered area.

**Cabbage** - Insect pressure in transplant cabbage is very light at the Arlington Agricultural Experiment Station (AES). None of the important Lepidopterous insect pest species including imported cabbageworm, diamondback moth, or cabbage looper have been reported infesting transplant cabbage in the 5 to 7 true leaf stage. A few springtails have been observed on recent transplants and light infestations pose little threat to a well-established stand.

**Snap Beans** - Populations of soybean aphid were first detected last week (May 21-25) by Dr. David Hogg, Department of Entomology, in an experimental soybean plot at the West Madison, AES. Among 60 visually inspected plants, 3 had a single adult (alate) plus a few nymphs and another 5 had only nymphs resulting in 13.3% (8/60) of the plants infested. A total of 41 nymphs were counted, for a mean of 0.68 per plant. Most aphids were found on the unexpanded leaf tissue. The soybean aphid has been implicated in past increases in Cucumber mosaic virus (CMV), Alfalfa mosaic virus (AMV), and other problematic viruses in processing snap beans and has more recently been documented as a competent vector of several nonpersistently transmitted viruses. Unfortunately, insect vector control using insecticides has limited effectiveness in reducing spread of nonpersistent viruses into susceptible crops.

**Potato** – Overwintering Colorado potato beetle (CPB) adults have been emerging over the last two weeks (May 13-26) and colonizing newly emerged potato fields. The adult CPB overwinters in the soil along field margins near windbreaks and other wooded areas surrounding potato fields, as well as in the field. These adults have begun to feed, mate and lay clusters of 10 – 30 yellow eggs on the underside of the newly emerged potato leaves. Females typically lay 350 or more eggs during their lives and they will last for 4-6 weeks during the early part of the season. Egg masses at different stages of development have been observed ranging from recently laid, bright yellow egg clusters to darkened orange masses nearing hatch. Egg hatch and emergence of 1<sup>st</sup> instar larvae from the earliest egg masses is expected very soon at the Arlington, AES.

Dead adult beetles have been observed in furrows at both the Hancock and Arlington AES signaling the effects of the systemically applied, nicotinyl insecticides. For growers who have not used an at-plant, systemic nicotinyl insecticide, plans should be made for the timely use of reduced risk materials targeting early instar larvae to include, but not limited to, spinosad (Spintor<sup>®</sup> 2SC), abamectin (Agrimek<sup>®</sup> 0.15EC), novaluron (Rimon<sup>®</sup> 0.83EC), thiamethoxam (Actara<sup>®</sup>), imidacloprid (Provado<sup>®</sup> 1.6F), and *Bacillus thuringiensis* subsp. *tenebrionis*.

**Vegetable Disease Update - W. R. Stevenson, Department of Plant Pathology, UW-Madison, Tel. No. 608-262-6291, Email: [wrs@plantpath.wisc.edu](mailto:wrs@plantpath.wisc.edu)**

Rain continues to be the biggest story or rather the lack of rain. Many growers pre-irrigated their fields just before planting to restore soil moisture after a dry spring. This likely paid dividends in terms of keeping seedpiece decay to a minimum. I have not received a single sample of rotting seedpieces this season. Compared with previous years of not so long ago when we were besieged with many rotting samples, this year must be some sort of record. By warming seedpieces before cutting, pre-healing the most decay-sensitive varieties, pre-irrigating fields and not irrigating the crop up, and trying to avoid large differentials in soil and seedpiece temperatures (<10°F differential is the goal) at planting, the industry has achieved a significant reduction in losses. Replanting fields due to seedpiece decay and stand loss used to be common, but it's now a rare event.

We are now entering our fifth year without seeing late blight in our state. The last time we confronted the disease was mid-season 2002. I have the sense that no one really misses the disease and hopefully we can add to this fortunate string of non-appearances. Still, the industry must be on guard. We are starting the year with low relative humidity and infrequent rainfall. Periods of leaf wetness have up to this point been short. Growers have purchased seed from late blight-free areas and there have been no samples of suspicious seed. Cleanings and culls from last year's storage are being properly disposed as well as slivers and chips remaining from the seed cutting and planting. It wouldn't hurt to do a quick survey of your property and those adjoining your production fields just to be sure that there are no volunteers, culls, etc. that are potential sources of inoculum of a variety of pathogens.

Now is the time to think about your fungicide spray programs. It's time to recalibrate the sprayers, change nozzles and tips if needed so that fields are treated evenly and at the correct dosage, and count rows between spray passes to be sure that every row is treated and that there are no overlaps. It's also time to review your spray program to make sure that you are following resistance management guidelines. In our field trials at Hancock, we've found that on a nine week spray program beginning at 300 P-Days (late June), a program that includes chlorothalonil every week (weeks 1 – 7), a strobilurin fungicide mixed with chlorothalonil on weeks 2 and 6, and boscalid mixed with chlorothalonil fungicide on week 4, and mancozeb plus triphenyltin hydroxide on weeks 8 and 9 has provided excellent control of early blight. This assortment of active ingredients has provided the best economic return of the many treatments tested over the past two years. For each dollar invested in fungicide, there was an observed \$6.71 return on that investment in 2006 using a standard processing contract for evaluation of returns. If late blight was to show up, adding one or more of the late blight products into the mix would minimize the impact of this disease as well.

Once again we are operating weather stations at Hancock, Grand Marsh, Plover and Antigo. Data are also being sent down from Spooner to compliment that corner of the state. The systems are up and running and we are beginning to process the data. I'll start the normal tabular reporting of the accumulation of P-Days and Severity Values on June 5. At the moment, the systems haven't been up long enough to have useful data to report. Remember that we maintain a comprehensive web site where you can find updated P-

Day and Severity Value information. Please see our web site at  
<http://www.plantpath.wisc.edu/wivegdis/index.htm>

Our potato research plots at Hancock have emerged and plots are planted at Spooner, Antigo, and Endeavor. We are also raising additional potatoes at Hancock so that with an early harvest in early August, we can conduct postharvest studies in the new Storage Research Facility at Hancock. It's going to be a very busy summer, but results from these many activities will help in improving your comprehensive disease management programs.