Vegetable Crop Update - #10

August 8, 2005

Potato Crop Update - Alvin J. Bussan, Potato and Vegetable Crop Specialist, UW-Madison, Department of Horticulture, 608-262-3519, 608-225-6842, or ajbussan@wisc.edu

With the potato field days occurring this week, I only have a brief crop update. I did get to spend more time in the potato plots last week then I had been able to all summer. I thought I would share some observations and thoughts from my time amongst the plots and the different potatoes.

Even with the warm conditions we have faced for much of this summer, the crop is in fair to good condition depending on the variety. The red and round white varieties have good shape and size and project to yield near average or slightly above normal. The processing Russets have a ways to go yet to reach good size and to yield. The vines are in relatively good health which should enable good late season bulking. The heavy set we have observed in our plots will likely reduce the size profile. I had a hard time estimating the current size and yield in the Norkotah plots due to the variable set and range in tuber size under different hills.

Quality appears good in all potatoes as we have observed less scab in our diggings, good shape, and few to no internal defects. We will begin testing sugars in potatoes this week to ascertain chemical maturity.

We are in the early harvest period for potato and the warm weather and scattered storm showers pose unique management issues. Two key issues are managing the pulp temperatures of the potato and preventing infection of tubers through the lenticels. Pulp temperatures can be managed by timing harvest and cooling tubers in short term storage after harvest to prevent disease development.

Tuber infection through the lenticels can be minimized by monitoring soil moisture levels and tuber condition prior to harvest. The heavy rains several weeks ago led to open lenticels on potato tubers for several days. Try to delay harvest after precipitation events until the tubers have returned to good condition for harvest. Conversely, do not let fields become too dry after vine-kill to minimize the potential for bruise. If no rain occurs, irrigate several days prior to planned harvest. After harvest, ensure good air movement and plenty of fresh air around newly harvested tubers to prevent lenticels from opening.

We look forward to seeing you all at the Spooner field day next week. Hope you all have a safe and successful harvest.

Spooner Ag Research Station Field Day August 18th 10:00 am
Onion Update: Onion planted from transplants averaged 3” in diameter with largest bulbs approaching 4”. Onion planted from seed averaged just over 2” in diameter with the largest bulbs approaching 3” in diameter. The tops appear to be in good condition setting up the crop for good growth through the remainder of the season. Onions received hail in some areas which caused some damage to leaves. Monitor onion in these fields for development of leaf or stem infection and condition for storage if that is the intended destination after harvest.

Summer Squash Update: Some folks have observed lack of fruit on some summer squash with no apparent lack of pollinators. Summer squash and other cucurbit crops grow well under warm conditions so heat stress likely did not influence pollination or fruit formation. However, stress due to drought, excess moisture, or cold temperatures can lead to flower or fruit abortion, poor pollination, or growth of male instead of female flowers. If the plants appeared wilted, then the damage to the fruit or flowers had already occurred. Lack of precipitation could have caused drought stress if the summer squash or other cucurbits were not irrigated. We have now received several inches of precipitation across the state. However, the vines must resume new growth to allow for new flower formation at new nodes along the stem before new fruit can form. This can take a minimum of 10 days after the rain or irrigation event. New fruit should start to appear on the zucchini or summer squash by the end of this week if the drought stress was the issue.

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

Potatoes: One week closer to vinekill and still no late blight. Wouldn’t it be nice to go for four consecutive years without late blight? It makes for easier newsletter writing on this end and a whole lot less grower expense in managing this explosive disease. To the best of my knowledge, there is no late blight being reported in the Midwest. This trend bodes well for next year as well as long as we don’t become complacent in our management efforts that include planting clean seed. Both western and eastern states are reporting a limited amount of late blight, so we are well aware that the pathogen is still alive and dangerous.

Early blight continues to progress in most areas of the state, but at this time, the fungicides applied as part of a standard disease management program appear to be effective. With only a few weeks to go, I don’t expect to see early blight as a major problem this year. Heavy rainfall in central Wisconsin about two weeks ago likely removed some soluble nutrients from the rooting zone and likely will play a role in the increasing susceptibility to the early blight pathogen as the season wears on. The timing of this rainfall, however, means that early blight will likely play a minimal role in yield losses this year.

Several growers have mentioned an excessive amount of vine rot this year. There can be three players in the vine rot scenario – bacterial stem rot, gray mold and white mold. The least likely culprit this year is white mold since we rarely see white mold in years when
the air temperatures exceed 85°F. With the daytime highs regularly exceeding this
temperature this year, we will likely see little if any white mold. In cool wet years such
as 2004, white mold appeared in many fields of potato, snap beans and soybeans. On
potato, symptoms include white stem lesions that appear bleached. As the infection
proceeds, black sclerotia may be produced primarily inside the hollow stems. Gray mold
thrives on warm wet weather, the kind of conditions we’ve been seeing with almost
constant irrigation these past few weeks. Stems infections are brown and mushy and are
often covered with a brown velvety growth of the Botrytis fungus. The pathogen can also
infect foliage and produces fairly large brown lesions, often with rings similar to what we
find on the smaller early blight lesions. Chlorothalonil sprays are quite effective for
controlling the gray mold fungus and normally, gray mold is more of a nuisance in fields
with excessive nitrogen and irrigation. Bacterial stem rot is the most common stem rotter
in Wisconsin. Given almost continuous wetness from non stop irrigation along with high
temperatures coupled with high winds causing stem breakage and hail in some fields to
cause stem wounds, we had ideal conditions for bacterial stem rot. Wounds, moisture
and temperature along with an abundance of soft rotting bacteria provide the perfect
recipe for bacterial stem rot. Timing irrigation so that the vines can dry, even for short
periods, helps to break the bacterial multiplication cycle and reduce vine decay losses.
During recent weeks, mostly without significant rainfall and high temperatures, growers
had little choice on the frequency of irrigation in an attempt to maintain soil moisture and
plant vigor. Copper sprays once symptoms appear are mostly ineffective since the copper
treatments are not systemic.

Cucurbit Crops: Right on cue, we are beginning to see the first symptoms of powdery
mildew on pumpkins, squash and other susceptible cucurbits. Most cucumber cultivars
have genetic resistance to powdery mildew, but on susceptible cultivars of pumpkins,
powdery mildew can prematurely defoliate the vines. Breeders are making progress in
breeding improved mildew resistance into pumpkins and often this resistance is as good
as multiple fungicide sprays. For susceptible pumpkin cultivars, there are several
fungicides with moderate to good efficacy including Quadris, Amistar, Quadris Opti,
Cabrio, Flint, Pristine, Nova, Topsin M and Procure.

Symptoms of cucumber mosaic virus are beginning to appear on pumpkins in
southcentral Wisconsin, likely the result of aphid flights in the past month. CMV is
spread by aphids in a non-persistent, stylet-borne manner. Aphids moving from alfalfa,
corn, soybeans or other hosts can often acquire CMV as they feed and probe multiple
species of CMV susceptible plants in fields, ditch banks and field edges. Then as they
move across pumpkin and squash plantings, they can effectively inoculate these plants in
a matter of seconds as they probe potential food sources. Symptoms of CMV include
mosaic patterns on the foliage, stunted plants, blossom abortion and fruit malformation.

Snap Beans: The same comments on CMV listed above pertain to snap beans. Since
2000, growers and processors have seen yield and quality problems caused by CMV
often accompanied by alfalfa mosaic virus (AMV) and clover yellow vein virus. Foliar
treatment with insecticide to kill aphids on snap beans has not been effective due in part
to the short time it takes for aphids to transmit the virus particles to snap beans. Plant
resistance seems to be the best long term solution, but this takes time to develop. Once again we have field trials in commercial fields where we are evaluating a broad range of cultivars and advanced breeding lines to virus infection. We’ve planted trials at the West Madison Ag Research Station, a commercial field near Markesan and another commercial field near Oostburg. Plants are now in their second trifoliate and with numbers of winged soybean aphids still high in some areas of the state, we should be able to collect useful data from all three locations.

**Soybean Rust:** As the summer wears on, the area where soybean rust symptoms are present continues to slowly expand. Symptomatic plants are still in Mississippi, Alabama, Georgia and Florida, but additional detections are likely in the weeks ahead. Given the distribution of rust at this point in the growing season and the advancing soybean maturity, we don’t expect to see rust as a threat to soybeans in the greater Midwest this year. Stockpiles of fungicides amassed in anticipation of wide scale field treatment of soybeans will largely go unused this season.

**Current P-Day (Potato Early Blight) and Severity Value (Potato Late Blight) Accumulations for 2005**

(https://www.plantpath.wisc.edu/wivegdis/index.htm)

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