

SPUDSCOOP

24 July 2020

Welcome to this week's Spud Scoop! It's been a week of warming temperatures and more rainfall in many areas. In general, the potato crop seems to be progressing well. Weather conditions continue to be favorable for late blight, as can be seen in late blight model severity values increasing this week. Late blight spore DNA was identified in the Lisbon, ND trap. Some things I have noticed this week as a result of the heat is that tuber sets seem to be lower, causing the remaining tubers to size up quickly (Figure 1). As a result of hot temperatures, I have seen Red Norland tubers have knobs or bumps developing on them (Figure 2). Nitrogen stress is showing up really nicely in our research trials (Figure 3). Symptoms of nitrogen stress is yellowing or chlorosis of lower leaves and reduced plant size.

My field visits were limited this week as I attended (on my computer) the Potato Association of America annual meeting and NPC EPA Tour. The Potato Association of America meeting had a number of talks from scientists from the United States and Canada. Our NDSU and University of Minnesota scientists and students did a great job representing all the potato research and improvement projects being conducted here. The NPC visit was unique in that they had potato scientists from around the country provide videos explaining all the major aspects of potato production followed by a question and answer sessions. Normally the EPA tour is conducted in the field to help EPA employees understand how potatoes are grown and the reality of farming potatoes. Ian MacRae did a great job explaining the importance of Regent (Fipronil) for wireworm control and Eric Halverson discussed major pests issues potato growers face in North Dakota and Minnesota. It was a positive experience for those attending the meeting.

As always, if you have any questions or ideas please reach out to me 701.219.9646 or Andy.Robinson@ndsu.edu.



Image 1. Red Norland potatoes 68 days after planting in Oakes, ND.



Image 2. Bumps or knobs developing on Red Norland tubers because of excessive heat.

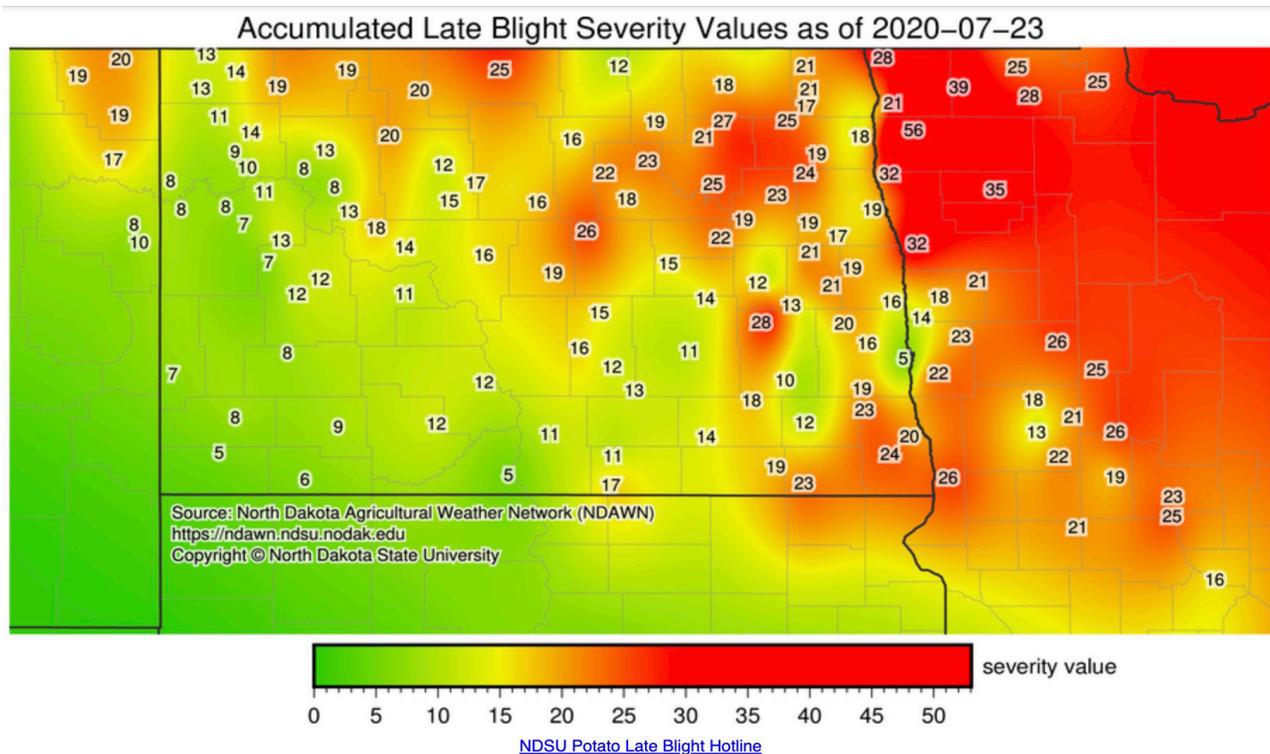


Figure 3. Nitrogen stress seen in potato research plots and on border rows of plots. Notice the yellowing of the leaves and stunted canopy.

Blightline

by Gary Secor

Welcome to the NDSU Potato Blightline for July 24, 2020. Late blight has not been reported in ND, MN or MB. Late blight severity values continue to accumulate and most areas are over the threshold value of 15 indicating that conditions are favorable for late blight and infection can occur if inoculum is present. Continue to scout fields, especially in areas that remain wet for longer periods, such as along shelterbelts and in low areas. The hot temperatures are not favorable for late blight sporulation and spread. The morning dew we provides the free moisture necessary for infection by the late blight agent. Send suspect late blight samples or photos to Gary Secor for positive identification. Conditions for early blight are favorable and protectant fungicides for early blight should be applied before infection occurs.

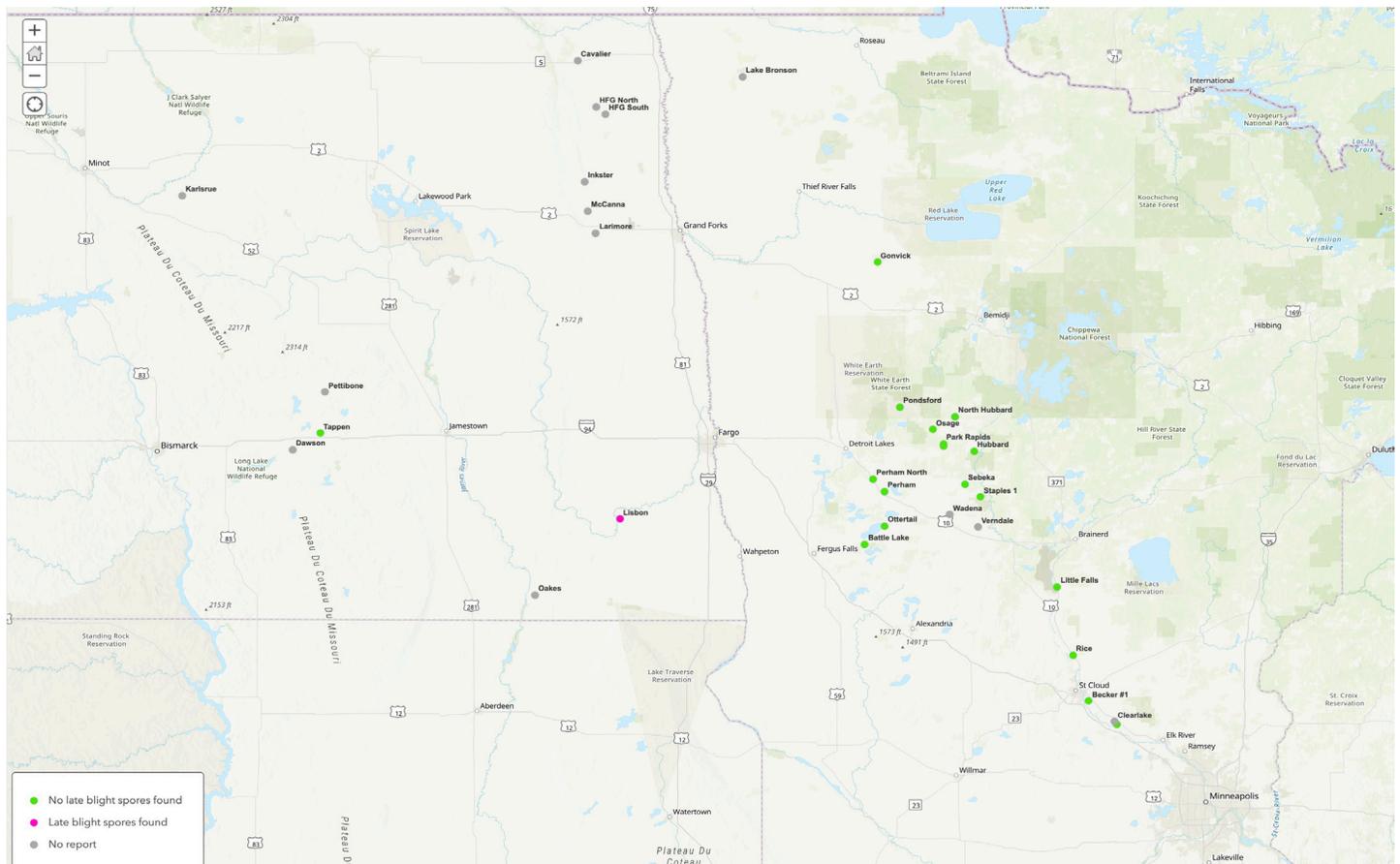


Late Blight Spore Trapping Network

by Andy Robinson and Julie Pasche

This is the third reporting period for 2020. This report contains 20 sites reporting. The PCR assays to detect late blight spores were conducted in the lab of Dr. Julie Pasche at the NDSU Plant Pathology department. Late blight spore DNA was found in the trap near Lisbon, ND. All other traps recovered this week tested negative for late blight. Late blight has not been confirmed in any potato fields. This purpose of this network is to provide an early detection system for potato growers to assist in late blight management. As the legend in the map indicates, green dots indicate no late blight spores recovered, pink dots indicate late blight spores found and the gray dots indicate sites not reporting.

Thank you to the Northern Plains Potato Growers Association, Minnesota Area II Potato Council, J.R. Simplot Company, R.D. Offutt Farms, Syngenta, Sipcam, Bayer Crop Science, BASF, UPL USA, Corteva, and Nufarm for supporting this effort.



Results of the late blight spore traps from the week of July 6 to 13, 2020.

The first symptoms of late blight in the field are small, light to dark green, circular to irregular-shaped water-soaked spots. These lesions usually appear first on the lower leaves. Lesions often begin to develop near the leaf tips or edges, where dew is retained the longest.



Aphid Alert

by Ian MacRae

Trap Catches Identified to July 24, 2020

Even though aphid numbers increased this week, they remain low with 24 vectors recovered from 9 sites of the 17 sites reporting this week. We started to recover soybean aphids from a number of sites as well. All the data's below in the tables.

PVY Vector Risk Index is now lower than this time last year. Small grains continue to mature and we have not yet seen a flight of cereal aphids, so this may change in the next week or two. Overall, however, the aphid numbers appear relatively low this year..

But the presence of winged aphids does signal the continued need for scouting, we do have movement of aphids into potatoes. If you're not already, it's time to be scouting seed (and commercial) potatoes for aphids.

Many of the species we're recovering are non-colonizing species, meaning they may not show up when sampling potato leaves. But their habit of moving through fields, probing plants to assess host suitability means they are still a problem!.

Aphid Fact of the Week - There are two different types of adult aphids; winged and non-winged (referred to as alate and apterous forms respectively). The winged aphids are dispersal forms. In summer, they're the individuals who leave colonies that are becoming stressed from densities or decreasing food quality. In the late season, winged aphids will return to overwintering hosts. The non-winged aphids are colony builders, they feed on host plants, give birth to live daughters and increase the size of the colony. A winged aphid's daughters will always be non-winged.

If you have a field where Colorado Potato Beetle aren't being controlled by insecticides, please let us know. We'd like to get samples of that population to test for insecticide resistance. Contact Ian MacRae at 218-280-9887.

As always, keep on scouting!

Scouting for aphids in potatoes:

- Select leaves from the lower to mid canopy. Start at the edge of the field.
- Lower, older leaves will have more established colonies and aphids prefer the balance of nutrients found here; aphids are rarely found on leaves in the upper canopy.
- Avoid leaves on the ground or in contact with the soil.
- In seed potatoes there is only a threshold for PLRV (10 aphids/100 leaves), reactive application of insecticides an effective control for PVY.
- The use of feeding suppressing insecticides, such as pymetrozine (Fulfill®) or flonicamid (Beleaf®) and refined crop oils, such as Aphoil and JMS Stylet Oil, at or prior to field colonization by aphids may reduce the transmission of PVY within fields. Some other insecticides, such as clothianidin (Belay®), imidacloprid (Admire Pro® or Provado®), and spirotetramat (Movento®), have also been demonstrated to reduce the transmission of PVY.
- In table stock potatoes, a treatment threshold of 30 aphids /100 leaves should deter yield loss due to aphid feeding.

The PVY Risk Index

Not all species of aphid are equally efficient at transmitting PVY, some are better than others (green peach being the most efficient vector of PVY). So, the total number of aphids in a trap don't necessarily reflect just how much vector pressure there is at that location. The PVY Vector Risk Index compares aphid numbers, incorporating their relative vector efficiency compared to the Queen of PVY vectors (green peach aphid!). Using averaged reference comparisons from the literature, we multiply the number of each aphid species captured by its efficiency compared to Green Peach Aphid to more accurately depict risk posed by the species being trapped. We then sum the totals. The PVY-VRI values are presented on the tables below but also on maps comparing current cumulative risk to the total risk from the sample sites of last year (to compare with your local winter grow out results).

Check out all the trap data at:

aphidalert.blogspot.com

