# Vegetable Crop Update

*A newsletter for commercial potato and vegetable growers prepared by the University of Wisconsin-Madison vegetable research and extension specialists*

Division of Extension
University of Wisconsin-Madison

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## In This Issue


**Updates on N – potato trials**
**Disease forecasting and updates for early and late blight in potato, cucurbit downy mildew updates**


## Calendar of Events

**December 1-3, 2020** – Midwest Food Producers Association Annual Convention/Processing Crops Conference, Kalahari, Wisconsin Dells, WI (possible remote options)
**January 24-26, 2021** – WI Fresh Vegetable Growers Association Educational Conference, Kalahari, Wisconsin Dells, WI (possible remote options)
**February 2-4, 2021** – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Holiday Inn, Stevens Point, WI (possible remote options)


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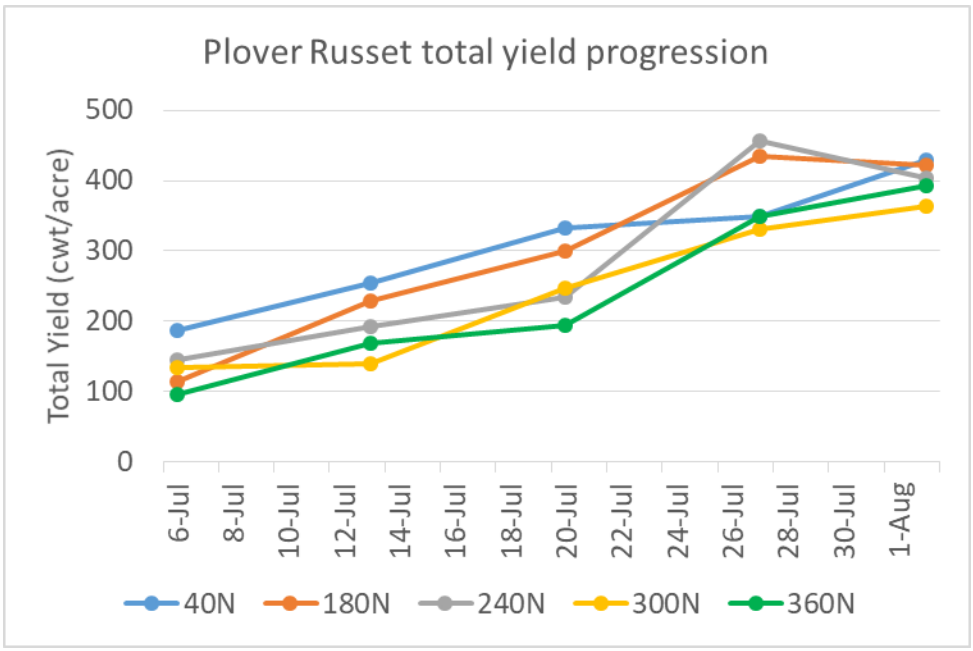
On August 3rd, we dug 6 plants from the Plover Russet and GoldRush plots under different N rates. Based on the five time points of digging Plover Russet, I made a table that shows its tuber bulking rate under each N treatment:

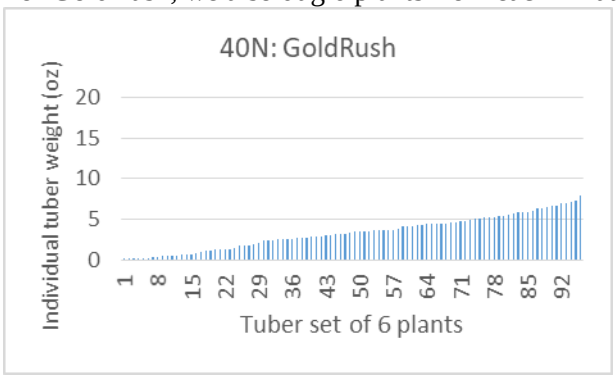
| | Tuber bulking rate at cwt/acre/day | | | | |
|---|---|---|---|---|---|
| | 40 N | 180 N | 240 N | 300 N | 360 N |
| 7/6 - 7/13 | 10 | 16 | 7 | 1 | 10 |
| 7/13 - 7/20 | 11 | 10 | 6 | 15 | 4 |
| 7/20 - 7/27 | 2 | 19 | 32 | 12 | 22 |
| 7/27 - 8/3 | 11 | -2 | -8 | 5 | 6 |
| Marketable Yield% on August 3 | 48% | 56% | 83% | 55% | 61% |

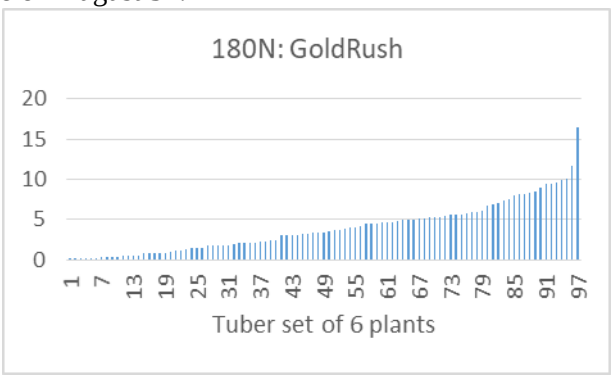
Through 8/3, it shows that 240 lb N/acre is the N rate that produces the highest marketable yield percentage and the highest tuber bulking rate (as high as 32 cwt/acre/day). The week between 7/20 and 7/27 seemed to be the peak growing period for Plover Russet as it had high bulking rate under all N rates except 40 N. Tuber bulking rate under 180 and 240 N between 7/27 and 8/3 was negative, which needs some further investigation.

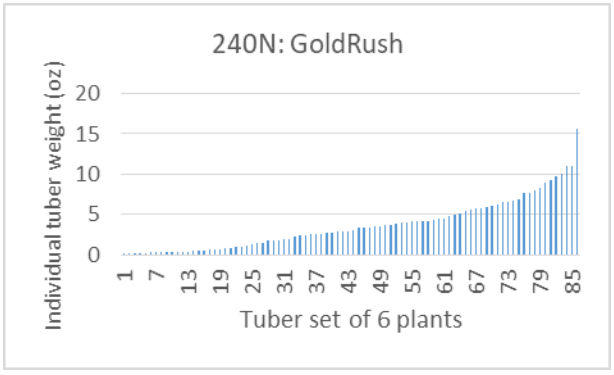
Progression of total yield for Plover Russet over the season is displayed in the figure below.

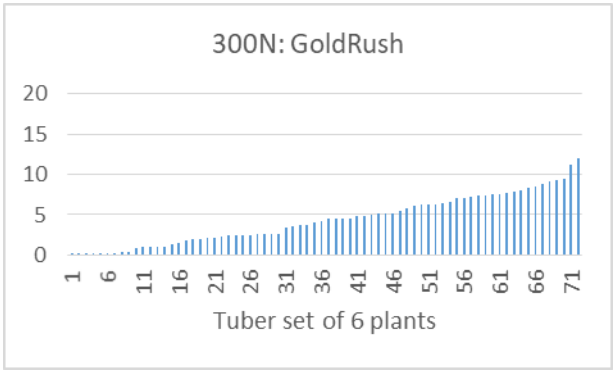


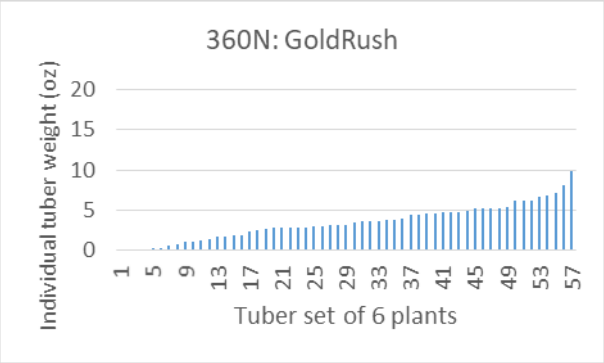

For GoldRush, we also dug 6 plants from each N rate on August 3rd.






Similar to what we have found before, higher N rate particularly under 300 lb/acre resulted in less tuber set per plant but higher percentage of marketable tuber sizes that are larger than 4 oz. Table below shows the marketable yield % of GoldRush under each N rate on August 3rd, which was 73 days after emergence. Both Plover Russet and GoldRush are scheduled to be vine killed on August 10th and harvested on August 24th.

| | 40 N | 180 N | 240 N | 300 N | 360 N |
|---|---|---|---|---|---|
| Marketable Yield% 73 DAE | 64% | 75% | 72% | 82% | 61% |

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**Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations** (Many thanks to Ben Bradford, UW-Madison Entomology; Stephen Jordan, UW-Madison Plant Pathology). A P-Day value of ≥300 indicates the threshold for early blight risk and triggers preventative fungicide application. A DSV of ≥18 indicates the threshold for late blight risk and triggers preventative fungicide application. Red text in table indicates threshold has been met/surpassed. TBD indicates that data is To Be Determined as time progresses. Weather data used in these calculations comes from weather stations that are placed in potato fields in each of the four locations. Data are available in graphical and raw data formats for each weather station at: https://vegpath.plantpath.wisc.edu/dsv/

| *Location* | *Planting Date* | | 50% Emergence Date | Disease Severity Values 8/7/20 | Potato Physiological Days 8/7/20 |
|---|---|---|---|---|---|
| ***Grand Marsh*** | Early | Apr 17 | May 18 | 109 | 618 |
| | Mid | Apr 25 | May 26 | 106 | 563 |
| | Late | May 6 | June 1 | 103 | 522 |
| ***Hancock*** | Early | Apr 8 | May 18 | 55 | 623 |
| | Mid | Apr 20 | May 25 | 53 | 572 |
| | Late | May 4 | May 30 | 50 | 534 |
| ***Plover*** | Early | Apr 10 | May 23 | 88 | 563 |
| | Mid | Apr 20 | May 30 | 82 | 508 |
| | Late | May 5 | June 1 | 82 | 496 |
| ***Antigo*** | Early | May 14 | June 5 | 51 | 492 |
| | Mid | May 24 | June 10 | 51 | 455 |
| | Late | Jun 1 | June 17 | 50 | 407 |

**Late Blight Management:** Our DSVs are reported here from emergence to August 7. Over the past week, we saw very modest accumulations throughout the state due to very dry weather and relatively lower temperatures. **Plantings of potatoes in the Grand Marsh, Hancock, Plover, and Antigo areas have exceeded threshold and should receive routine (~weekly) preventative fungicide application for late blight management.**

**Early Blight Management: PDays are exceeding the threhold of 300 for early planted potatoes in Grand Marsh, Hancock, Plover, and Antigo areas**. Totals are rapidly accumulating with higher temperatures. For more information about fungicide selections, please see the Potato section of the A3422 Commercial Vegetable Production Guide for Wisconsin, 2020.
https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2020.pdf

**National late blight update: No new reports of late blight in the US or Canada this past week.** Potato late blight was reported in British Columbia, western Canada (Delta and Surrey) about 2 weeks ago now. The site: https://usablight.org/map/ includes reports as they are submitted in the US. Previous reports documented the disease in NC, FL and AL. Where the late blight pathogen has been tested in the US so far this year, the clonal lineage has been US-23. Dr. Andy Robinson's potato newsletter "Spud Scoop" of Aug 7 2020 from NDSU and Univ. of MN Extension indicated that there were no field reports of late blight but that pathogen spores were found in traps in Lake Bronson (MN), Oakes (ND), and Perham (MN). This suggests that, at least in these locations, if favorable weather occurs, late blight is likely. Preventative fungicides are a good option in such cases.

**National cucurbit downy mildew update:** No downy mildew reported from WI at this time. Nearest and new report from LaPorte County Indiana in the northwestern corner. Reports to date, have come from: AL, CT, DE, GA, IN, KS, KY, MA, MD, MI, NC, NJ, NY, OH, Ontario & Quebec Canada, PA, SC, TN, VA, and WY. No forecasted movement of the pathogen in our direction, with prevailing air moving eastward. https://cdm.ipmpipe.org/forecasting/