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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Calendar of Events

July 23, 2020 – UW Extension Langlade Co. Virtual Field Day
December 1-3, 2020 – Midwest Food Producers Association Annual Convention/Processing Crops Conference, Kalahari, Wisconsin Dells, WI
February 2-4, 2021 – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Holiday Inn, Stevens Point, WI

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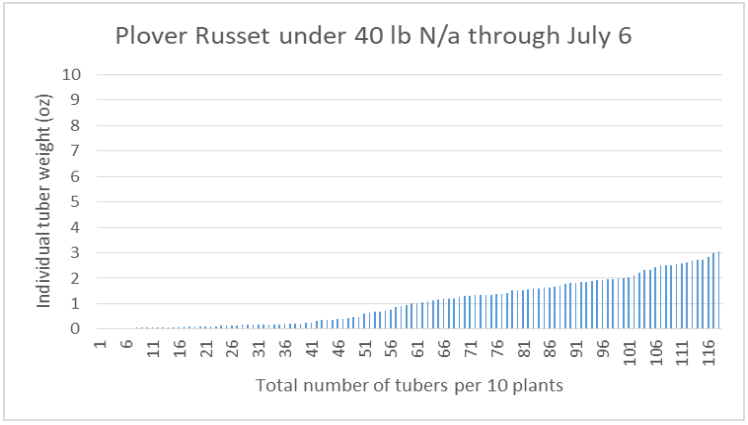
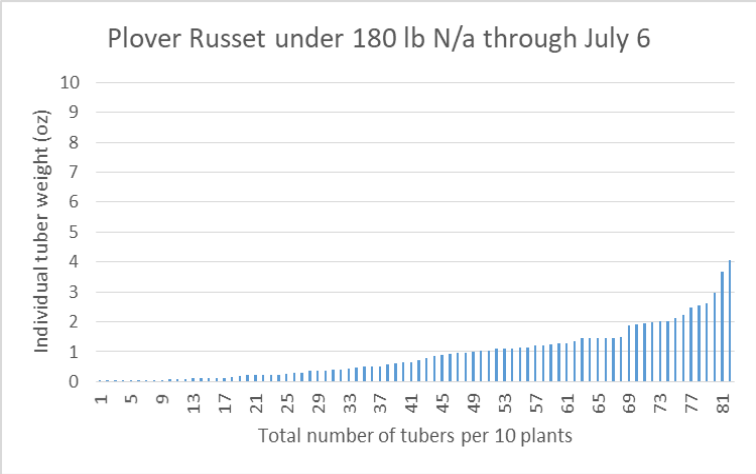
On July 6th, we dug 10 Plover Russet (W9133-1rus) plants from every nitrogen application treatment in our plot (40, 180, and 240 lb N/acre). The N application records are shown below:

N application	Date	N fertilizer	Applied N (lb/a)	Total N through July 6th (lb/a)
Starter at planting	5/1	Starter	40	40
Emergence (hilling)	5/21	Ammonium nitrate	70	
Tuber initiation	6/12	Ammonium nitrate	70	180
Tuber initiation	6/12	Ammonium nitrate	130	240

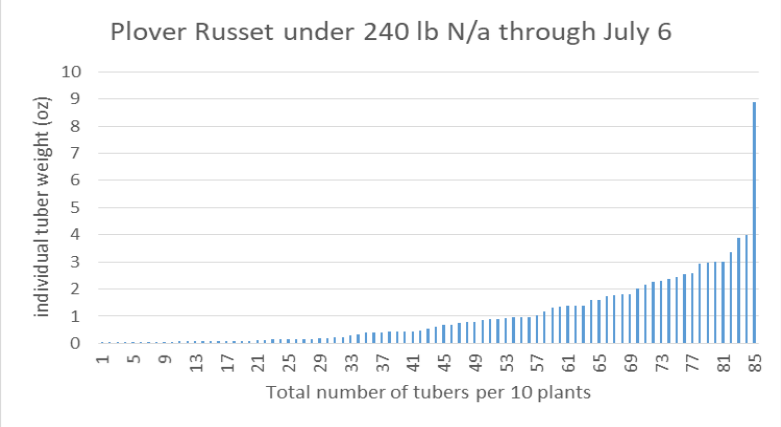
The tuber bulking data are shown here:



We can see that the average tuber set per plant is 11.6 under 40 units of N, which is the control treatment of this study. About half the tubers are lighter than 1oz.



Under 180 units of N, the maximum tuber weight is 4oz, compared to 3oz under the control. And the average tuber set is 8.1 per plant. Again about half of the tubers are lighter than 1oz.



Under 240 units of N, the maximum tuber weight is close to 9oz, compared to 3oz and 4oz under 40 and 180 units of N, respectively. And the average tuber set is 8.5 per plant. About 2/3 of the tubers are lighter than 1oz. e can see that even in a low N environment, the plants are setting more tubers in order to make the best use of the resources to grow, however they are not producing large tubers that may develop into marketable size. Under higher N rates, like 180 and 240 units of N, tuber set per plant is less but there are more large tubers that are bulking.

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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 7/11/20	Potato Physiological Days 7/11/20
Grand Marsh	Early	Apr 17	May 18	61	401
	Mid	Apr 25	May 26	58	346
	Late	May 6	June 1	55	305
Hancock	Early	Apr 8	May 18	37	412
	Mid	Apr 20	May 25	35	362
	Late	May 4	May 30	32	324
Plover	Early	Apr 10	May 23	44	363
	Mid	Apr 20	May 30	38	309
	Late	May 5	June 1	38	297
Antigo	Early	May 14	June 5	29	279
	Mid	May 24	June 10	29	242
	Late	Jun 1	June 17	28	194

Late Blight Management: Our DSVs are reported here from emergence to July 11. Over the past few days we have accumulated near maximum DSVs for several sites/emergence dates due to heat and rains (albeit spotty). **All 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, and Plover 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 on tomato or potato in this past week, as per https://usablight.org/map/ . Previous reports documented the disease in FL and AL.

National cucurbit downy mildew update: No downy mildew reported from WI at this time. Over the past week, an additional southeastern county of Michigan reported the disease on cucumber, as did parts of OH, Ontario Canada, NY, NJ, VA and MD. Below, I include a map of US with counties in green indicating recent reports of cucurbit downy mildew and red counties indicating reports of greater than 7 days. Additionally, a forecast for Sunday 7/12/2020 for risk of pathogen movement. No forecasted movement of the pathogen in our direction, with prevailing air moving eastward. However, the rapid movement of the pathogen over the past 2 weeks, coupled with favorable hot and humid weather, governs need for preventative fungicide applications to limit initial infections.