Vegetable Crop Update

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

No. 7 – May 13, 2016

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Calendar of Events

July 14, 2016 – UW-Rhinelander Agricultural Research Station Field Day
July 21, 2016 – UWEX Langlade County –Antigo Research Station Field Day
July 28, 2016 – UW-Hancock Agricultural Research Station Field Day

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Please note that in previous versions of this newsletter I had the **wrong date listed in our Calendar of Events for the UW-Hancock Agricultural Research Station Field Day. It has been corrected to July 28, 2016.** I apologize for this error. In addition, UW-Rhinelander and UWEX Langlade County have also posted the dates for their Field Days, July 14 and July 21, respectively.

Our weather stations are now in place in 3 out of 4 potato planting locations (Grand Marsh, Hancock, and Plover). We will place the Antigo station during the week of May 23. Weather data and disease forecast information will be posted shortly. Thank you to our Mortenson Bros. Farms and Okray Family Farms cooperators for hosting the stations in commercial fields. Continued thanks to Drs. Stephen Jordan and R. Vaughan James for situating, maintaining, and processing data from the stations for the disease forecasting efforts.

For further information on common diseases, insect and weed pest information, please consider the 2016 A3422 Commercial Vegetable Production in Wisconsin guide is available for purchase ($10) through the University of Wisconsin Extension Learning Store website:
http://learningstore.uwex.edu/Commercial-Vegetable-Production-in-Wisconsin2016-P540.aspx

A pdf of the document can be downloaded for free at the following direct link:
http://learningstore.uwex.edu/Assets/pdfs/A3422.pdf

National Late Blight Updates (www.usablight.org). No new detections of late blight have been made in the past week. Earlier this season, however, there were a few cases confirmed in Florida (tomato and potato, US-23) and South Carolina (tomato). US-23 has predominated over the past few years in tomato and potato late blight epidemics across the U.S. As a reminder, US-23 is a genotype that can be controlled with mefenoxam/metalaxyl fungicides (ie: Ridomil Gold SL); this type can infect both tomato and potato.

Cucurbit Downy Mildew Updates (http://cdm.ipmpipe.org/). In the past week there were two new detections of cucurbit downy mildew in the southeastern U.S.: Levy Co. FL on watermelon and Dodge Co. GA on cucumber. Earlier season detections (Mar and Apr) came from multiple cucurbit crops in southern TX, FL, and GA.

Potato Rhizoctonia and Black Scurf Management. While potato planting is likely wrapping up in southern and central Wisconsin for most commercial growers, many fields remain to be planted over the next month as we look northward. I have received questions this week on seed-applied and in-furrow fungicides for Rhizoctonia control and thought I'd include our 2015 Hancock Agricultural Research Station potato trial results for those interested.

Evaluation of at-plant treatments for control of Rhizoctonia diseases of potato in Wisconsin, 2015.
S.A. Jordan and A.J. Gevens, UW-Plant Pathology.

Potatoes were planted on 4 May at the University of Wisconsin Hancock Agricultural Research Station in central WI to evaluate seed- and in-furrow- applied fungicides for the control of Rhizoctonia diseases of potato, including seedling damping-off and tuber black scurf. Fertility, insect, and weed management was accomplished using standard commercial practices for the region. In preparation for planting, US#1 seed tubers were cut into approximately 2 oz pieces on 21 Apr. Seed pieces were allowed to heal for 14 days at 13°C with 95% relative humidity and good airflow for suberization. A randomized complete block design with four replications was used for the trial and treatment plots consisted of four, 24-ft-long rows spaced 36 in. apart with 12 in. spacing in the row. To minimize soil compaction and damage to plants in rows used for foliar and yield evaluations, drive rows for pesticide application equipment were placed adjacent to plots. In-furrow treatments were applied using a CO2 backpack sprayer equipped with a single TeeJet 8002VS flat fan nozzle calibrated to deliver 12 gal/A at a boom pressure of 40 psi. Seed treatments were applied to cut seed prior to planting using the same sprayer equipment as previously described. Plots relied upon natural inocula for disease establishment. Seed emergence data were collected on 1 Jun from 24 linear feet of each of the center 2 rows of each plot (% seed emergence = number of emerged vines /maximum possible emerged vines (48)*100). Precipitation in Hancock during the potato production season was 18.5 in. Supplemental irrigation was applied 39 times during the potato production season for an additional 16.2 in. Vines were killed with 2 desiccant treatments of Diquat+non-ionic surfactant applied on 27 Aug and 2 Sep. Plots were harvested and graded on 16 Sep. At harvest, 20 tubers were randomly selected from each plot after washing and visually evaluated for symptoms of black scurf (% incidence= number of symptomatic tubers/20*100).

Rhizoctonia and black scurf pressure was low in the 2015 production season in Hancock, Wisconsin. There were no significant differences in seed emergence and black scurf incidence in tubers among treatments. Percent emergence ranged from 71.9-92.2% with our untreated control treatment emerging at 83.9%. Black scurf incidence ranged from 0-10% with our untreated control treatment resulting in a disease incidence of 2.5%. Marketable yields were significantly different based on treatments with 7 programs resulting in significantly higher yields than the untreated control. Among the 7 programs, 3 were applied in-furrow (Priaxor 500SC 0.48fl oz, A19649 200SC 0.71 and 0.94 fl oz rates), and 4 were applied as seed treatments (Cruiser Maxx Potato 0.31 fl oz, Cruiser Maxx Potato Extreme 0.31 fl oz, Maxim MZ 7.5DP 0.5 lb, Nubark Mancozeb 6D 1.0 lb).

Treatment and rate[z]	Application Type[y]	Emergence (%)	Marketable Yield (cwt)		Black Scurf Incidence (%)
Untreated Control	-	83.9	426.6	a-d	2.5
Double Nickel LC 1.7 fl oz	In Furrow	78.2	430.3	a-e	2.5
Priaxor 500SC 0.48 fl oz	In Furrow	78.2	495.6	e-i	0.0
Quadris 2.018SC 0.6 fl oz	In Furrow	71.9	463.0	c-h	7.5
Serenade Soil 4.4 fl oz	In Furrow	72.9	429.0	a-d	0.0
Moncut 70DF 0.83 oz	In Furrow	80.3	456.6	b-g	2.5
Vertisan 200EC 1.1 fl oz	In Furrow	80.7	479.7	d-i	2.5
A19649 200SC 0.47 fl oz	In Furrow	87.5	460.4	b-g	7.5
A19649 200SC 0.71 fl oz	In Furrow	79.7	502.8	f-i	0.0
A19649 200SC 0.94 fl oz	In Furrow	92.2	516.6	g-i	0.0
Elatus 45WG 0.34 fl oz	In Furrow	78.7	461.9	b-g	2.5
Elatus 45WG 0.5 fl oz	In Furrow	84.4	490.3	d-i	0.0
Cruiser Maxx Potato 0.31 fl oz	Seed Treat	79.2	514.0	g-i	0.0
Cruiser Maxx Potato Extreme 0.31 fl oz	Seed Treat	78.7	521.8	g-i	0.0
Maxim MZ 7.5DP 0.5 lb	Seed Treat	91.7	533.8	I	0.0
Nubark Mancozeb 6D 1.0 lb	Seed Treat	81.8	524.7	Hi	0.0
Emesto Silver 118 FS 0.31 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	72.4	395.4	Ab	0.0
Emesto Silver 118 FS 0.31 fl oz	Seed Treat				
Reason 500SC 0.15 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	81.8	399.8	a-c	0.0
Emesto Silver 118 FS 0.31 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat				
Serenade Soil 4.4 fl oz	In Furrow	87.0	443.9	b-f	0.0
Emesto Silver 118 FS 0.31 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat				
Quadris 2.018SC 0.6 fl oz	In Furrow	82.3	424.5	a-d	0.0
Moncoat MZ 7.5DP 0.75 lb	Seed Treat	85.9	375.9	A	0.0
Convoy 40SC 0.38 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	85.4	440.5	a-f	0.0
Emesto Silver 118FS 0.5 lb	Seed Treat				
Firbark 0.5 lb	Seed Treat	81.8	426.8	a-d	0.0
Convoy 40SC 0.38 fl oz	Seed Treat				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	78.7	396.7	a-c	2.5
Moncut 70DF 1.07 fl oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	86.5	395.6	Ab	0.0
Quadris 2.018SC 0.6 fl oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	77.6	399.4	a-c	2.5
Vertisan 200EC 1.1 fl oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	91.7	424.2	a-d	2.5
Priaxor 4.17SC 0.6 fl oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	79.2	425.4	a-d	0.0
Moncut 70DF 1.6 oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	88.1	396.1	Ab	2.5
Moncut 70DF 1.07 oz	In Furrow				
Serenade Soil 4.4 fl oaz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	78.7	396.6	a-c	0.0
ProStar 70WG 1.07 fl oz	In Furrow				
Nubark Mancozeb 6D 1.0 lb	Seed Treat	78.2	403.4	a-c	10.0

[z]Treatment rates applied in-furrow are given per 1000 row ft. Seed treatment rates are given per 100 lb seed.

[y]Seed treatment and in-furrow were applied at the time of planting.

[x]Column numbers followed by the same letter are not significantly different at P=0.05 as determined by Fisher's Least Significant Difference (LSD) test.