

Irrigated Cultivar Trial 2015

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As part of a North Dakota Specialty Crop Block grant we tested ten different cultivars for their agronomic performance. This trial was planted at the irrigated research site near Inkster, ND on June 10, 2015 with a 2-row research planter. The ten cultivars planted were Russet Burbank, Pinnacle, Manistee, Umatilla, Accumulator, Nicolet, Lamoka, Snowden, Atlantic, and MegaChip. Each plot was 1 row wide (3 feet) by 25 feet long. Prior to planting, 67 lb/a of nitrogen, 124 lb/a potassium, 30 lb/a sulfur, 1.5 lb/a zinc, 2 lb/a boron, and 1 lb/a copper were incorporated. At planting 29 lb/a of nitrogen and 100 lb/a of phosphorous were applied as liquid starter. Nitrogen was side dressed at 70 lb/a on June 23 and plots received 30 lb/a of nitrogen by fertigation on August 3 and 12. Typical agronomic management practices were used to grow the crop. Stand and stem number were counted on July 10. Tubers were harvested on 15 October 2015 and graded thereafter for yield.

There were differences in the graded yield data. Atlantic was the best performing cultivar tested when compared across yield parameters (Table 1 and 2). It had the greatest numerical amount of tubers from 6-10 oz, 10-14 oz, total yield, marketable yield, and percent tubers > 6 oz. Pinnacle and Snowden tended to have a large number of undersized tubers (< 4 oz). Pinnacle and Snowden averaged 34-42% of tubers undersized. However, this may have been because the stem number (Table 2) was high on these cultivars. The lower yields may have been a result of late planting and too much nitrogen, as demonstrated by an earlier cultivar like Atlantic performing well.



Figure 1. Image of the cultivar trial from Inkster, ND on July 16, 2015.

Table 1. Graded yield of ten cultivars grown at Inkster, ND in 2015. Within columns a significant difference is indicated by a different letter at p=0.05.

	<4 oz		4-6 oz		6-10 oz		10-14 oz		>14 oz	
	----- Cwt/a -----									
Russet Burbank	47	c	81		145	a-d	51	ab	19	
Pinnacle	153	a	106		88	d	18	b	2	
Manistee (MSL292-A)	94	abc	103		102	bcd	21	b	3	
Umatilla	98	abc	111		121	a-d	22	b	1	
Accumulator	70	bc	94		174	ab	48	ab	12	
Nicolet	84	abc	112		149	a-d	37	ab	23	
Lamoka	80	abc	112		168	abc	30	ab	9	
Snowden	120	ab	114		94	cd	17	b	9	
Atlantic	53	bc	108		203	a	61	a	25	
MegaChip	63	bc	82		147	a-d	44	ab	13	

Table 2. Total and marketable yield and percent of tubers greater than 6 or 10 ounces of ten cultivars grown at Inkster, ND in 2015. Within columns a significant difference is indicated by a different letter at p=0.05.

	Total yield		Total marketable		>6 oz		>10 oz	
	----- Cwt/a -----				----- % -----			
Russet Burbank	343	ab	296	abc	62	a	20	
Pinnacle	366	ab	214	c	30	c	6	
Manistee (MSL292-A)	322	b	228	bc	39	abc	8	
Umatilla	354	ab	256	bc	42	abc	7	
Accumulator	398	ab	328	ab	58	ab	15	
Nicolet	406	ab	321	abc	51	abc	15	
Lamoka	399	ab	319	abc	52	abc	10	
Snowden	354	ab	234	bc	34	bc	8	
Atlantic	450	a	397	a	64	a	19	
MegaChip	349	ab	286	abc	58	ab	16	

Table 3. Stand and stem count of 10 processing cultivars grown at Inkster, ND in 2015. Within columns a significant difference is indicated by a different letter at p=0.05.

	Stand		Stem	
	----- Number -----			
Russet Burbank	22	ab	76	cde
Pinnacle	24	a	95	abc
Manistee (MSL292-A)	22	ab	61	de
Umatilla	21	ab	70	cde
Accumulator	22	ab	115	a
Nicolet	24	a	85	bcd
Lamoka	20	b	52	e
Snowden	22	ab	105	ab
Atlantic	23	ab	74	cde
MegaChip	22	ab	77	b-e