

Russet Potato Variety Trial, 2001

General Comments:

The goal of the Russet Fresh Market Variety trial is to find a short season russet variety that can produce a marketable crop under short day production. Successful russet varieties could be grown for the fresh market or for processing.

Planting Site:	Hastings REC, Yelvington Farm
Planting Date:	February 16, 2001
Harvest Date:	May 24, 2001
Season Length:	97 days
Replications:	4
Plot Size:	20 ft
Row Spacing:	12 inches in-row, 40 inches between-row
Fertilizer:	preplant, 168-24-144 lb/A; sidedress, 98-14-84 lb/A
Number of Varieties:Clones:	6:4
Early Plant Size (Early Vigor):	33 days after planting
Highest Total Yield:	B1956-86 (293 cwt/acre)
Highest Marketable Yield:	Amey (268 cwt/acre)
Best Overall Tuber Appearance:	Belrus (MFX) (7.3), B1933-2 (7.0)

Specific Comments:

Russet Norkotah 3 (MFX). Russet Norkotah was used as a standard in this trial for comparison with all other varieties and clones. Total and marketable yield were 164 and 102 cwt/acre, respectively. Potato tuber skin color was dark brown to brown with a moderate to heavy russet texture. Tuber flesh color was white. Tuber shape was rated as mostly long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated as plants emerged with leaves still clustered in a rosette. Plant type at full flower was scored as upright with a good canopy. Plant maturity at harvest was rated as starting to mature to moderately mature. Average specific gravity for Russet Norkotah 3 tubers was 1.063.

Russet Norkotah 7 (MFX). Total and marketable yield were 142 and 82 cwt/acre, respectively. Potato tuber skin color was brown to dark brown with a moderate to heavy russet texture. Tuber flesh color was white. Tuber shape was rated as mostly long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated as plants emerged with leaves still clustered in a rosette. Plant type at full flower was scored as upright with a good canopy. Plant maturity at harvest was rated as starting to mature to moderately mature. Average specific gravity for Russet Norkotah 7 tubers was 1.060.

Amey (USDA). Total and marketable yield were 290 and 268 cwt/acre, respectively. Potato tuber skin color was dark brown to brown with a heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of intermediate to shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as moderately mature to yellow and dying. Average specific gravity for Amey tubers was 1.072.

Belrus (MFX). Total and marketable yield were 239 and 169 cwt/acre, respectively. Potato tuber skin color was dark brown to brown with a heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of intermediate to shallow. Overall external tuber appearance was noted as good to excellent. Early plant size was rated between 2 to 4 inches. Plant type at full flower was scored as spreading with a fair to good canopy. Plant maturity at harvest was rated as yellow and

dying to completely dead. Average specific gravity for Belrus tubers was 1.076.

Belrus (USDA). Total and marketable yield were 192 and 143 cwt/acre, respectively. Potato tuber skin color was brown with a heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of intermediate to shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 2 to 4 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Belrus tubers was 1.076.

AF1808-18 (UM). Total and marketable yield were 239 and 194 cwt/acre, respectively. Potato tuber skin color was tan with a moderate to heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as decumbent to spreading with a fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for AF1808-18 tubers was 1.068.

B1933-3 (USDA). Total and marketable yield were 178 and 124 cwt/acre, respectively. Potato tuber skin color was brown to tan with a moderate to heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as good. Early plant size was rated between 8 to 10 inches. Plant type at full flower was scored as decumbent with a poor to fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for B1933-3 tubers was 1.076.

B1956-86 (USDA). Total and marketable yield were 293 and 169 cwt/acre, respectively. Potato tuber skin color was brown with a heavy russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for B1956-86 tubers was 1.068.

B1957-1 (USDA). Total and marketable yield were 117 and 96 cwt/acre, respectively. Potato tuber skin color was brown with a moderate russet texture. Tuber flesh color was white. Tuber shape was rated as oblong to long with an eye depth of shallow to very shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1957-1 tubers was 1.061.

Florida Table 9. Russet Variety Trial. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of russet-skinned potato clones grown at Hastings, FL. - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²					Size Distribution (%)		Specific Gravity
		(cwt/A)	percent of standard	1	2	3	4	5	2 to 4	3 to 4	
Season-97 days											
Russet Norkotah 3	164	102	100	37	41	20	3	0	63	22	1.063
Russet Norkotah 7	142	82	80	42	53	5	0	0	58	5	1.060
Amey (B9922-11)	290	268	262	4	27	43	26	0	96	69	1.072
Atlantic (MFX)	383	355	346	3	17	41	39	0	97	80	1.081
Atlantic (MFX)	330	302	294	3	17	34	46	0	97	80	1.084
Atlantic (MFX)	338	315	308	2	14	32	51	0	98	83	1.082
Belrus (MFX)	239	169	165	28	56	14	3	0	72	17	1.076
Belrus (USDA)	192	143	140	24	54	18	4	0	76	22	1.073
La Chipper	396	347	338	7	32	38	23	0	93	61	1.073
AF1808-18	239	194	190	8	30	50	13	0	92	63	1.068
B1933-3	178	124	121	27	52	17	4	0	73	22	1.076
B1956-86	293	169	165	36	50	12	2	0	64	14	1.068
B1957-1	117	96	94	15	50	26	8	0	85	35	1.061
<i>LSD</i> ³	96	85		17.3	19.9	17.9	17.7	<i>ns</i>	17.3	23.8	0.011
<i>P Value</i>	0.0001	0.0001		0.0001	0.0001	0.0001	0.0001		0.0001	0.0001	0.0001

Planted on Feb. 16, 2001, fertilizer rate was 168-24-144/A plus 98-14-84/A sidedressed, harvested on May 24, 2001.

¹ - Marketable Yield: size classes 2 to 4

² - Size classes: 1 = <1 7/8", 2 = 1 7/8 to 2.5", 3 = 2.5 to 3.25", 4 = 3.25 to 4", 5 = >4"

³ - Means separated within columns by Tukey's Studentized Range (HSD) Test.

Florida Table 10. Russet Variety Trial. Yield, vine maturity, tuber characteristics, and internal defects of russet-skinned potato clones grown at Hastings, FL - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield (cwt/A)	Vine Maturity ¹	Tuber Characteristics ¹						Internal Defects ²			
				IFC	SC	ST	TS	ED	APP	HH	BR	CRS	INT
Russet Norkotah	164	102	5.8	1.0	4.7	2.7	6.7	7.3	6.0	0	0	0	0
Russet Norkotah	142	82	5.3	1.0	4.7	2.3	6.7	7.3	6.0	0	0	0	0
Amey (B9922-11)	290	268	4.0	1.0	4.7	2.0	5.7	6.3	5.7	0	0	0	0
Atlantic (MFX)	383	355	4.3	1.0	6.7	6.3	3.0	6.0	6.3	5	0	0	0
Atlantic (MFX)	330	302	4.3	1.0	6.7	6.3	3.0	6.0	6.3	0	0	0	0
Atlantic (MFX)	338	315	4.3	1.0	6.7	6.3	3.0	5.7	6.0	5	0	0	0
Belrus (MFX)	239	169	2.8	1.0	4.7	2.0	6.0	6.7	7.3	0	0	0	0
Belrus (USDA)	192	143	2.8	1.0	4.7	2.0	6.0	6.0	6.0	0	0	0	0
La Chipper	396	347	3.5	1.0	8.0	8.0	2.0	6.3	7.0	0	0	0	0
AF1808-18	239	194	2.3	1.0	6.0	2.3	5.7	8.0	5.3	5	0	0	0
B1933-3	178	124	1.3	1.0	5.3	2.7	5.7	7.3	7.0	0	0	0	0
B1956-86	293	169	2.5	1.0	5.0	1.7	6.0	7.7	5.3	0	0	0	0
B1957-1	117	96	1.1	1.0	5.3	3.0	5.7	7.3	5.7	0	0	0	0

¹ - See rating system outlined in Florida Rating Code Table.

² - Percent of tubers showing defects. HH = hollow heart, BR = brown rot, CRS = corky ring spot, INT = internal browning.