

CHAPTER 12. NE-1014 REGIONAL PROJECT POTATO VARIETY TRIAL, 2006

General Comments

The NE1014 Regional Project is a multi-state potato evaluation program developed to identify new potato clones. The production, adaptation, and performance stability of new potato clones is documented under a wide range of geographic, climatic, soil, and cultural conditions. The University of Maine produces and supplies all cooperators with similar seed.

Planting Information

Planting Site	PSREU - Hastings Farm, Hastings, FL
Planting Date	February 14, 2006
Vine Kill Date	May 16, 2006
Harvest Date	June 5 and 6, 2006
Season Length	91 days planting to vine kill; 111-112 days planting to harvest
Fertilizer Program	preplant, 100-43-86 lb/A; sidedress, 50-0-43 lb/A (2 appl.)
Irrigation Program	seepage

Experimental Design

Number of Varieties	10 (Standard: Atlantic)
Number of Clones	13
Within Row Spacing	8 in (20 cm)
Between Row Spacing	40 in (102 cm)
Replications	4
Plot Size	16 ft (4.9 m)

Production Statistics

Early Vigor Ratings	42 days after planting
Highest Total Yield	B1870-3 (426 cwt/acre or 47.7 MT/ha)
Highest Marketable Yield	Atlantic (348 cwt/acre or 39.0 MT/ha)
Highest Specific Gravity	B2319-1 (1.092)
Best Overall Appearance	A9014-2 (7.5, good)

Table 31. Production statistics for NE1014 potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Atlantic	385	348	100	1	5	68	24	2	0	94	26	1.083
Chieftain	359	295	85	1	10	83	6	1	0	89	6	1.064
Dark Red Norland	275	212	61	3	17	80	0	0	0	80	0	1.066
Katahdin	318	264	76	2	11	78	10	0	0	88	10	1.068
Kennebec	375	332	96	1	5	70	23	0	0	93	23	1.071
Russet Burbank	385	257	74	3	30	68	0	0	0	68	0	1.072
Russet Norkotah 3117	281	172	49	2	21	76	1	0	0	77	1	1.067
Snowden	366	317	91	1	10	74	15	0	0	89	15	1.077
Superior	356	280	81	2	15	83	0	0	0	83	0	1.080
Yukon Gold	338	280	81	1	6	55	33	5	0	93	37	1.072
A9014-2	267	198	57	1	24	75	1	0	0	75	1	1.063
AF2211-2	238	158	46	3	10	57	30	0	0	87	30	1.070
AF2291-10	339	289	83	1	9	80	10	0	0	90	10	1.084
B1806-8	405	322	93	1	11	85	4	0	0	89	4	1.078
B1816-5	335	258	74	1	20	79	0	0	0	79	0	1.072
B1870-3	426	325	94	2	12	75	12	0	0	87	12	1.066
B2291-7	283	227	65	2	15	83	0	0	0	83	0	1.087
B2319-1	327	98	28	11	54	34	0	0	0	34	0	1.092
NDTX731-1R	335	305	88	1	6	62	29	2	0	93	31	1.064
NY129	200	166	48	1	8	70	19	2	0	91	21	1.054

Table 31 (cont'd). Production statistics for NE1014 potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
NY137	424	161	46	2	19	74	3	2	0	79	5	1.063
NY139	326	281	81	1	8	80	11	1	0	91	11	1.074
NY73-49	340	225	65	2	11	63	23	0	0	87	24	1.079
<i>MSD</i> ³	93	116		2	14	20	18	ns	0	15	19	0.007
<i>P Value</i>	0.0001	0.0001		0.0001	0.0001	0.0001	0.0001	0.7676	-	0.0001	0.0001	0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = .5 to 1.5" , B = 1.5 to 1 7/8", A1 = 1 7/8 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4"

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

Table 32. Plant growth and tuber characteristics of NE1014 potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Tuber Comments
Atlantic	99	na	9	7.3	2.0	6.0	5.0	2.5	6.5	6.5	a little scab
Chieftain	98	na	9	5.5	2.0	3.0	7.0	3.0	5.0	6.0	too light skin color
Dark Red Norland	100	na	8-9	3.3	2.0	2.0	7.5	3.0	6.0	6.5	nice color
Katahdin	100	na	9	5.8	2.0	7.5	6.5	3.5	6.5	6.0	scab, flat tubers
Kennebec	94	na	9	7.3	1.0	7.5	6.5	4.0	7.0	4.0	lenticels
Russet Burbank	98	na	9	5.5	1.0	5.0	2.5	4.5	6.5	4.5	all shapes
Russet Norkotah 3117	100	na	8	3.8	1.0	5.0	2.0	4.5	6.5	7.0	decent looking
Snowden	99	na	8-9	4.8	1.0	6.0	5.5	2.0	5.0	7.0	deep eyes
Superior	100	na	6-9	4.0	1.5	6.5	6.5	2.5	6.5	4.5	spider netting skin
Yukon Gold	98	na	8-9	3.0	3.5	7.0	6.5	3.5	6.5	4.5	slightly flat, lenticels
A9014-2	95	na	8-9	8.5	1.0	5.0	2.5	4.5	7.0	7.5	slightly mishapen
AF2211-2	91	na	7-9	8.3	1.0	6.0	5.5	2.5	7.0	5.0	very round
AF2291-10	100	na	8	4.5	1.0	7.0	6.0	2.0	6.0	5.5	some lenticels
B1806-8	100	na	9-6	4.0	3.5	7.0	7.0	2.5	7.0	5.5	okay
B1816-5	98	na	9	4.5	4.0	1.0	7.0	3.0	5.0	7.0	dark purple, flat
B1870-3	100	na	6-9	4.3	1.5	7.5	7.5	3.5	5.5	6.5	some lenticels
B2291-7	100	na	9	6.8	1.0	7.0	6.5	2.0	6.0	4.5	scab
B2319-1	100	na	6-9	3.5	5.0	6.5	6.5	1.0	5.5	6.0	small tubers, nice flesh
NDTX731-1R	100	na	8	3.5	1.5	2.0	7.0	2.0	5.0	7.0	nice color, some net
NY129	76	na	7-8	8.3	1.0	2.5	6.5	2.0	6.0	4.5	too much netting

Table 32 (cont'd). Plant growth and tuber characteristics of NE1014 potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						Tuber Comments
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	
NY137	97	na	8-9	5.0	1.0	7.0	6.0	3.0	7.0	5.0	lenticels and netting
NY139	94	na	8-9	7.3	1.5	6.0	5.5	3.0	5.5	4.5	skinning
NY73-49	97	na	9	7.5	1.0	7.0	6.5	2.0	6.0	4.5	bad lenticels

¹ See rating system outlined in Table 1 (page 8).

² See rating system outlined in Table 2 (page 9).

Table 33. External and internal defects of NE1014 potato selections.

Clone	% External Tuber Defects					% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	HH	BR	CRS	IHN	Brown Center		
						L	M	H				
Atlantic	0	1	2	1	4	0	0	0	0	3	0	0
Chieftain	0	0	2	6	8	0	0	0	0	1	0	0
Dark Red Norland	0	0	0	3	4	0	0	0	0	1	0	0
Katahdin	0	0	1	4	6	0	0	0	0	0	0	0
Kennebec	0	1	2	3	5	0	0	0	0	0	0	0
Russet Burbank	0	1	0	0	2	0	0	0	0	4	0	0
Russet Norkotah 3117	0	0	0	20	20	0	0	0	0	0	0	0
Snowden	0	0	1	2	3	0	0	0	0	0	0	0
Superior	0	0	0	5	6	0	0	0	0	1	0	0
Yukon Gold	0	1	2	7	11	0	0	0	0	6	4	0
A9014-2	1	1	0	3	4	0	0	3	0	0	0	0
AF2211-2	1	3	4	17	25	0	0	0	0	0	0	0
AF2291-10	0	0	1	4	5	0	0	0	0	3	0	0
B1806-8	0	0	0	10	11	0	0	0	0	0	0	0
B1816-5	0	1	1	0	2	0	0	1	0	0	0	0
B1870-3	0	0	1	13	14	0	0	0	0	0	0	0
B2291-7	0	0	0	3	3	0	0	0	0	0	0	0
B2319-1	0	0	1	12	13	0	0	3	0	0	0	0
NDTX731-1R	0	0	1	2	2	0	0	0	0	4	3	0
NY129	0	0	4	4	9	0	0	4	0	0	0	0

Table 33 (cont'd). External and internal defects of NE1014 potato selections.

Clone	% External Tuber Defects					% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	HH	BR	CRS	IHN	Brown Center		
										L	M	H
NY137	0	0	1	53	54	0	0	0	0	0	0	0
NY139	1	1	1	3	6	0	0	0	0	0	0	0
NYY73-49	0	0	4	21	25	0	0	0	5	0	0	0
<i>MSD</i> ³	1	ns	4	16	16	0	0	ns	2	ns	ns	0
<i>P Value</i>	0.0021	0.1526	0.0006	0.0001	0.0001	-	-	0.6095	0.0001	0.5402	0.4743	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

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²Percent tubers; HH, hollow heart; BR, brown rot; CRS, corky ring spot; IHN, internal heat necrosis.

Brown Center: L = Light, M = Moderate, H = Heavy

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

