



Chapter 12. NE-1014 Regional Project Potato Variety Trial, 2006¹

C.M. Hutchinson and Doug Gergela²

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)

1. This document is HS1096, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date July, 2007. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

2. Chad M. Hutchinson, Associate Professor, Doug Gergela, Sr. Biological Scientist, Horticultural Sciences Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication does not signify our approval to the exclusion of other products of suitable composition. All chemicals should be used in accordance with directions on the manufacturer's label. Use pesticides safely. Read and follow directions on the manufacturer's label.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Larry Arrington, Dean

Table 2. Production statistics for NE1014 potato selections.

Clone	Total		Size							Size Class		Specific Gravity
	Yield (cwt/A)	Marketable Yield ¹ (cwt/A)	Distribution by Class (%) ²							Range (%)		
			C	B	A1	A2	A3	A4	A1 to A3	A2 to A3		
	% of standard											
Atlantic	385	348	1	5	68	24	2	0	0	94	26	1.083
Chieftain	359	295	1	10	83	6	1	0	0	89	6	1.064
Dark Red Norland	275	212	3	17	80	0	0	0	0	80	0	1.066
Katahdin	318	264	2	11	78	10	0	0	0	88	10	1.068
Kennebec	375	332	1	5	70	23	0	0	0	93	23	1.071
Russet Burbank	385	257	3	30	68	0	0	0	0	68	0	1.072
Russet Norkotah 3117	281	172	2	21	76	1	0	0	0	77	1	1.067
Snowden	366	317	1	10	74	15	0	0	0	89	15	1.077
Superior	356	280	2	15	83	0	0	0	0	83	0	1.080
Yukon Gold	338	280	1	6	55	33	5	0	0	93	37	1.072
A9014-2	267	198	1	24	75	1	0	0	0	75	1	1.063
AF2211-2	238	158	3	10	57	30	0	0	0	87	30	1.070
AF2291-10	339	289	1	9	80	10	0	0	0	90	10	1.084
B1806-8	405	322	1	11	85	4	0	0	0	89	4	1.078
B1816-5	335	258	1	20	79	0	0	0	0	79	0	1.072
B1870-3	426	325	2	12	75	12	0	0	0	87	12	1.066
B2291-7	283	227	2	15	83	0	0	0	0	83	0	1.087
B2319-1	327	98	11	54	34	0	0	0	0	34	0	1.092
NDTX731-1R	335	305	1	6	62	29	2	0	0	93	31	1.064
NY129	200	166	1	8	70	19	2	0	0	91	21	1.054
NY137	424	161	2	19	74	3	2	0	0	79	5	1.063
NY139	326	281	1	8	80	11	1	0	0	91	11	1.074
NY173-49	340	225	2	11	63	23	0	0	0	87	24	1.079
<i>MSD</i> ³	93	116	2	14	20	18	ns	0	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	0.0001

¹Marketable Yield: size classes A1 to A3.² Size 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 3. 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	
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	

¹See rating system outlined in Table 1 of HS335.²See rating system outlined in Table 2 of HS335.

Table 4. 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	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	
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	
NY173-49	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.

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.