

Chapter 10. Chipping Potato Variety Trial, 2006 ¹

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General Comments

A goal of the Chipping Potato Variety trial is to identify a short-season processing potato variety with better production and quality characteristics than Atlantic, the current standard.

Planting Information

Planting Site	PSREU - Hastings Farm, Hastings, FL
Planting Date	February 1, 2006
Harvest Date	May 16, 2006
Season Length	105 days
Fertilizer Program	preplant, 100-43-86 lb/A; sidedress, 65-0-56 lb/A; (2 appl.)
Irrigation Program	seepage

Experimental Design

Number of Varieties	8 (Standard: Atlantic)
Number of Clones	8
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	40 days after planting
Highest Total Yield	Fabula (541 cwt/acre or 60.6 MT/ha)
Highest Marketable Yield	Fabula (481 cwt/acre or 53.9 MT/ha)
Highest Specific Gravity	B1985-1 (1.097)

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Table 2. Production statistics for Chipping potato selections.

Clone	Total Yield		Size										Specific Gravity
	(cwt/A)	Marketable Yield ¹ % of standard	Distribution by Class (%) ²										
			C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	Size Class Range (%)		
Atlantic (USDA)	407	373	100	1	6	56	29	8	0	93	37	1.091	
Atlantic (MFX)	429	395	106	1	5	56	32	5	0	94	38	1.090	
Andover	379	350	94	1	6	90	3	0	0	94	3	1.084	
Fabula	541	481	129	1	7	73	17	2	0	93	19	1.069	
Harley Blackwell	401	333	89	1	14	74	10	1	0	84	10	1.087	
Sebago	467	398	107	1	11	72	13	3	0	88	16	1.073	
Snowden	374	322	86	1	11	79	9	0	0	88	9	1.087	
Suncrisp	428	362	97	1	11	75	12	1	0	87	13	1.084	
B0766-3	431	393	105	1	6	55	27	11	0	93	38	1.080	
B1985-1	303	219	59	2	23	73	3	0	0	76	3	1.097	
B1992-106	501	448	120	1	6	71	20	2	0	93	22	1.087	
B2280-86	392	349	93	1	9	78	12	0	0	90	12	1.090	
B2445-4	477	370	99	0	4	69	24	2	0	95	26	1.074	
BNC49-1	399	305	82	2	11	48	19	20	1	86	39	1.071	
BNC49-2	501	461	123	1	4	39	43	13	0	95	56	1.086	
BNC143-4	468	409	110	0	4	56	30	10	0	96	40	1.088	
<i>MSD</i> ³	114	117		1	8	17	13	10	ns	8	16	0.006	
<i>P Value</i>	0.0001	0.0001		0.0042	0.0001	0.0001	0.0001	0.0001	0.4685	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 3. Plant growth and tuber characteristics of Chipping potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²							Chip Rating ³ 1-5	Tuber Comments
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP			
											TS		
Atlantic (USDA)	96	6.5	8.3	na	2.0	6.0	5.0	2.5	6.5	5.5	65.1	scab	
Atlantic (MFX)	100	6.8	8.8	na	2.0	6.0	5.0	2.5	6.5	5.5	65.4	scab	
Andover	99	7.5	8	na	1.0	6.0	5.0	3.0	5.5	5.5	67.1	some scab	
Fabula	97	5.3	8	na	3.0	7.0	6.5	3.5	6.0	4.0	61.3	some lenticels, mishapen	
Harley Blackwell	99	7.5	8-9	na	1.0	6.0	5.5	2.5	6.0	6.0	64.2	sl. flat	
Sebago	93	7.3	8	na	1.0	7.0	6.0	3.5	6.0	5.0	64.8	lenticels	
Snowden	100	7.0	8.8	na	2.0	6.0	5.0	2.5	6.0	6.0	69.3	sl. flat	
Suncrisp	99	8.0	9	na	1.0	5.0	4.5	3.5	7.0	4.0	63.9	scab, flat, all shapes	
B0766-3	96	8.0	6-9	na	1.0	6.0	5.0	3.0	6.5	5.0	67.6	scab	
B1985-1	97	7.5	6-9	na	1.0	7.5	5.5	3.0	6.5	6.0	63.2	sl. flat	
B1992-106	98	6.8	8.3	na	1.0	5.0	4.5	4.5	6.5	5.5	68.0	nice flesh	
B2280-86	100	6.5	9-6	na	2.0	6.5	5.5	2.5	6.5	6.0	66.8	some lenticels	
B2445-4	99	5.5	8.3	na	1.0	6.0	5.0	4.5	6.5	4.5	61.5	some mishapen	
BNC49-1	95	6.5	8	na	2.0	6.0	5.5	2.5	7.0	5.5	66.7	some scab	
BNC49-2	99	6.5	9	na	1.0	5.0	5.0	2.5	6.0	6.0	68.6	nice flesh	
BNC143-4	96	7.8	8	na	4.0	5.5	5.0	2.5	6.0	6.0	63.2	sl. flat	

¹See rating system outlined in Table 1 (page 8).²See rating system outlined in Table 2 (page 9).³For rating scale, see general potato variety production information in Chapter 1. (page 5)

Table 4. External and internal defects of Chipping 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 (USDA)	0	0	1	0	2	6	0	1	5	3	0	3
Atlantic (MFX)	0	0	2	0	2	0	0	0	4	1	4	3
Andover	0	0	1	1	1	0	0	0	0	0	0	0
Fabula	0	1	2	0	4	0	0	0	0	0	0	0
Harley Blackwell	0	0	1	0	1	0	0	0	0	0	0	0
Sebago	0	0	2	1	3	1	0	0	10	1	0	3
Snowden	0	0	2	0	2	0	0	0	0	0	0	0
Suncrisp	0	1	2	1	3	1	0	0	0	0	1	1
B0766-3	0	0	1	0	2	4	0	0	0	0	0	0
B1985-1	0	2	0	4	5	0	0	0	6	0	0	0
B1992-106	0	1	2	1	4	0	0	0	0	0	0	0
B2280-86	0	0	1	1	2	0	0	0	0	0	0	0
B2445-4	0	4	13	1	19	0	0	0	0	1	0	1
BNC49-1	1	0	2	8	11	6	0	0	3	4	3	6
BNC49-2	0	1	1	1	3	3	0	0	0	0	0	0
BNC143-4	0	2	4	3	9	10	0	0	8	0	0	0
MSD ³	ns	3	4	4	8	8	0	0	11	ns	3	4
P Value	0.5629	0.0011	0.0001	0.0001	0.0001	0.0003	-	-	0.0233	0.1116	0.0427	0.0005

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.