

## CHAPTER 10. CHIPPING POTATO VARIETY TRIAL, 2006

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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)

Table 25. Production statistics for Chipping potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield <sup>1</sup>		Size Distribution by Class (%) <sup>2</sup>						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
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> <sup>3</sup>	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

<sup>1</sup>Marketable Yield: size classes A1 to A3.

<sup>2</sup>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"

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

Table 26. Plant growth and tuber characteristics of Chipping potato selections.

Clone	Plant Growth Characteristics <sup>1</sup>				Tuber Characteristics <sup>2</sup>						Chip Rating <sup>3</sup>	Tuber Comments
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	1-5	
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

<sup>1</sup> See rating system outlined in Table 1 (page 8).

<sup>2</sup> See rating system outlined in Table 2 (page 9).

<sup>3</sup> For rating scale, see general potato variety production information in Chapter 1. (page 5)

Table 27. External and internal defects of Chipping potato selections.

Clone	% External Tuber Defects					% Internal Defects <sup>2</sup>						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls <sup>1</sup>	HH	BR	CRS	IHN	Brown Center		
						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
<i>MSD</i> <sup>3</sup>	ns	3	4	4	8	8	0	0	11	ns	3	4
<i>P Value</i>	0.5629	0.0011	0.0001	0.0001	0.0001	0.0003	-	-	0.0233	0.1116	0.0427	0.0005

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

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

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

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