



## Chip Potato Varieties for Commercial Production in Northeast Florida <sup>1</sup>

C.M. Hutchinson, J.M. White, D.P. Weingartner<sup>2</sup>

The production qualities of potato varieties are of interest to growers, state and county faculty, regulatory agency personnel, home gardeners, and others. This information may be used to compare variety performance among farms, to develop production regulations, or to compare standard varieties with new varieties.

Potatoes are produced on approximately 40,000 acres in Florida. The largest concentration of potato acreage (20,000 acres) is in Flagler, Putnam, and St. Johns counties in northeast Florida. The majority of acreage in northeast Florida is planted in chipping potato varieties. However, red and white-skinned fresh market potatoes are also grown. Potato planting begins in this area in late December and continues through early March. Potatoes are harvested from late April through June.

The information presented in this report is averaged from trials over the last four years at the Hastings REC located in St. Johns County. Calculating averages over a multi-year period normalizes data to account for climatic and seed source differences. Potato production characteristics

for the same variety vary greatly around the state of Florida. Hence, these values only represent what may be expected in northeast Florida production areas. Yields from experimental plots can be higher than those from commercial fields because of the greater control over production practices. This information should be considered a guideline for production qualities rather than viewed in absolute terms.

The standard chip potato variety in Florida is Atlantic. However, Snowden is also grown for chip production. AF1775-2 is under advanced variety evaluation available for grower trials. The number of trials in which the variety has been evaluated is listed in parentheses following the variety name. All chip potato varieties were produced using IFAS recommended production practices (Hochmuth et al., 2001) and rated using the Florida potato variety classification system (Table 1). Season length from planting to harvest was approximately 100 days. Tubers noted as “marketable” were USDA grades A1, A2, and A3.

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2. C.M. Hutchinson, assistant professor, Horticultural Sciences Department; J.M. White, associate professor, Horticultural Sciences Department, MFREC-Apopka; D.P. Weingartner, associate professor, Plant Pathology Department, Hastings-REC, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

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The attributes of a good chip potato variety are disease resistance in the plant, abundant tuber production, high tuber specific gravity, low incidence of physiological and disease defects in the tuber, and good chip quality. The Agtron reading is one indicator of chip quality and represents the chip color after frying. The higher the Agtron number, the lighter the chip. Florida potatoes are chipped fresh – not out of storage. Therefore, chip information is from potatoes chipped within 72 hours of harvest.

### Variety Information

**Atlantic (25).** Atlantic is the standard chip potato variety grown in Florida. Average total and marketable yield were 368 and 335 cwt/acre, respectively. Potato tuber skin color is buff to tan with a netted to slightly netted texture. Tuber flesh color is white. Tuber shape is oblong with an eye depth of intermediate to shallow. Overall external tuber appearance has been noted as fair to good. Plant type at full flower is upright with a fair canopy. Plant maturity at harvest has been rated as yellow and dying to completely dead. Average specific gravity for Atlantic tubers was 1.079. Over all tests, hollow heart and internal browning were observed in 1.0 and 2.0% of tubers tested, respectively. The average Agtron reading over five chip tests was 56 with 2% external defects.

**Snowden (11).** Average total and marketable yield were 440 and 407 cwt/acre, respectively. Potato tuber skin color is brown to tan with a netted texture. Tuber flesh color is white. Tuber shape is round to oblong with an eye depth of intermediate to shallow. Scab and large lenticels have been noted on tubers. Overall external tuber appearance has been noted as fair to good. Plant type at full flower has been scored as upright with a good canopy. Plant maturity at harvest has been rated as yellow and dying to completely dead. Average specific gravity for Snowden tubers was 1.077. Over all tests, hollow heart was observed in 1.0% of tubers tested. The average Agtron reading over three chip tests was 56 with 3% external defects. Snowden is not accepted by all chip producers because chips may not meet taste standards.

**AF1775-2 (4).** Average total and marketable yield were 324 and 300 cwt/acre, respectively. Potato tuber skin color is buff to white with a moderately smooth texture. Tuber flesh color is white. Tuber shape is round to oblong with intermediate to shallow eyes. Overall external tuber appearance has been noted as fair to good. Plant maturity at harvest has been scored as yellow and dying. Average specific gravity for AF1775-2 tubers was 1.071. Over all tests, internal browning was observed in 1.0% of tubers. The average Agtron reading over two chip tests was 59 with 2% external defects.

### References

Hochmuth, G.J., C. M. Hutchinson, D. N. Maynard, W. M. Stall, T. A. Kucharek, S. E. Webb, T. G. Taylor, S. A. Smith, and E. H. Simonne. 2001. Potato Production in Florida. *In*: Vegetable Production Guide for Florida. Edited by: D.N. Maynard and S.M. Olson. University of Florida and Vance Publishing.

Table 1. Florida Potato Variety Classification System

Plant Characteristics						
Rating Code	Early Vigor	Plant Size Full Flower	Vine Maturity	Plant Type	Vine Maturity At Harvest/Vine Kill	
1	No Emergence	Very Small	Very Early	Decumbent – Poor	Dead	
2	Leaves in Rosette	--	Early	Decumbent – Fair	--	
3	Plants < 2"	Small	--	Decumbent – Good	Yellow and Dying	
4	Plants 2" to 4"	--	Medium Early	Spreading – Poor	--	
5	Plants 4" to 6"	Medium	Medium	Spreading – Fair	Moderately Mature	
6	Plants 6" to 8"	--	Medium Late	Spreading – Good	--	
7	Plants 8" to 10"	Large	--	Upright – Poor	Starting to Mature	
8	Plants 10" to 12"	--	Late	Upright – Fair	--	
9	Plants > 12"	Very Large	Very Late	Upright - Good	Green and Vigorous	

  

Tuber Characteristics						
Rating Code	Internal Flesh Color	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall Appearance
1	White	Purple	Part. Russet	Round	Very Deep	Very Poor
2	Cream	Red	Heavy Russet	Mostly Round	--	--
3	Light Yellow	Pink	Mod. Russet	Round to Oblong	Deep	Poor
4	Medium Yellow	Dark Brown	Light Russet	Mostly Oblong	--	--
5	Dark Yellow	Brown	Netted	Oblong	Intermediate	Fair
6	Pink	Tan	Slightly Netted	Oblong to Long	--	--
7	Red	Buff	Mod. Smooth	Mostly Long	Shallow	Good
8	Blue	White	Smooth	Long	--	--
9	Purple	Cream	Very Smooth	Cylindrical	Very Shallow	Excellent