UF IFAS Extension UNIVERSITY of FLORIDA

HS1298

University of Florida Potato Variety Trials Spotlight: 'Harley Blackwell'[1]

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General Comments

'Harley Blackwell' is a potato variety that is commonly grown for the potato chip market. It was selected from the progeny of a cross between B0155-24 and B9935-8 and tested under the pedigree B0564-8. It was released and named jointly by the Agricultural Research Service, the United States Department of Agriculture, the Agricultural Research Service of North Carolina, the Agricultural Experiment Stations of Virginia, New Jersey, Pennsylvania, Florida, and New York, and the Maine Agricultural and Forest Experiment Station in 2000. Tuber production and quality results provided in this spotlight are summarized from various variety trials conducted at the UF/IFAS Hastings Agricultural Extension Center between 1998 and 2016.

General Characteristics

'Harley Blackwell' tubers are mostly round with a white flesh color (Figure 1). According to Florida's rating codes for potato tuber characteristics (Table 1), the tubers have a good appearance with buff skin color, netted skin texture, and intermediate to shallow eye depth (Table 3). 'Harley Blackwell' demonstrates high yield potential under Florida production conditions (Tables 2 and 3). On average, marketable yield is 274 cwt/acre with 83% of the tubers produced found between A1 and A3 tuber size classification and low incidence of internal defects like internal heat necrosis. The variety has a medium to high specific gravity of 1.074 (Table 2).

Figure 1. Typical tuber and internal flesh color of 'Harley Blackwell' potato variety.
Credits: Kathleen Haynes, UF/IFAS

Diseases

'Harley Blackwell' is resistant to race A of the golden nematode (*Globodera rostochiensis*) and internal heat necrosis. It is susceptible to Verticillium wilt (*Verticillium albo-atrum* and *Verticillium dahliae*) and late blight (*Phytophthora infestans*). It is moderately susceptible to early blight (*Alternaria solani*), with intermediate resistance to common

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scab (*Streptomyces scabies*), and some tolerance to powdery scab (*Spongospora subterranea f. sp. subterranea*). The standard UF/IFAS Extension-recommended disease and weed control program described under "Potato Production" (Chapter 13 of the *Vegetable Production Handbook for Florida* http://edis.ifas.ufl.edu/cv131) should be followed.

Season Length and Growth

'Harley Blackwell' is an early to medium maturing variety. Season length was 101 days on average from planting to harvest. This depended on weather conditions during the growing season. Late in the season tuber size should be closely monitored to harvest tubers with marketable size. Soil moisture should be managed late in the season to avoid high soil moisture conditions that cause enlarged lenticels, which are sites of entry for decay organisms.

Fertilization

UF/IFAS trial plots are normally fertilized with 200 to 230 lb/A of N. The first application of 100 lb/A of N (granular) is typically incorporated in the bed 2 to 5 days prior to planting, followed by one or two side dress fertilizer applications at emergence and/or at tuber initiation. Phosphorus and potassium applications follow the UF/IFAS guidelines described in Liu et al. (2016) and normally range between 45 to 100 lb/A of P_2O_5 and 170 to 235 lb/A of K_2O.

Planting

A seed piece of 2 1/2 to 3 oz is recommended for planting. This variety should be planted with 40 inches between rows and 8 inches between plants, at 3 to 4 inches deep. A seed rate of 2,000 to 3,000 lb/acre of seed is expected.

Other Information

For additional information on cultivation, weed and disease management see the Potato Production chapter of the *Vegetable Production Handbook* available at http://edis.ifas.ufl.edu/cv131.

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Table 1. Florida rating codes for potato vine maturity and tuber characteristics.

Tuber Characteristics[1]							
Rating Code	**Vine Maturity**	**Internal Flesh Color**	**Skin Color**	**Skin Texture**	**Tuber Shape**	**Eye Depth**	**Overall Tuber Appearance**
1	dead	white	purple	partial russet	round	very deep	very poor
2	+-	cream	red	heavy russet	mostly round	--	--
3	yellow and dying	light yellow	pink	moderate russet	round to oblong	deep	poor
4	+-	medium yellow	dark brown	light russet	mostly oblong	--	--
5	moderately senesced	dark yellow	brown	netted	oblong	intermediate	fair
6	+-	pink	tan	slightly netted	oblong to long	--	--
7	starting to senesce	red	buff	moderately smooth	mostly long	shallow	good
8	+-	blue	white	smooth	long	--	--
9	green and vigorous	purple	cream	very smooth	cylindrical	very shallow	excellent

[1] Adapted from Hutchinson, C.M., et al. (2003) and Sisson, J.A. and G.A. Porter (2002)

Table 2. Summary of production statistics and specific gravity of 'Harley Blackwell' grown at the UF/IFAS Hastings Agricultural Extension Center, Hastings, FL from 1998 to 2016, excluding 2001.

Year	**Total Yield (cwt/ac)**	**Marketable yield (cwt/ac)**	**% of STD**	**Standard**	**Size Class (Distribution by class %)[3]**						**Range %**		**Specific Gravity**
					C	**B**	**A1**	**A2**	**A3**	**A4**	**A1 to A3**	**% Culls**	
1998	390	307	84	Atlantic	0	22*	46	25	7	0	79	14	1.072
1999	384	342	97	Atlantic	0	11*	79	10	0	0	89	5	1.065
2000	290	254	73	Atlantic	0	13*	39	30	18	0	88	8	1.073
2002	256	235	83	Atlantic	0	6*	52	35	7	0	94	3	1.076
2003	416	344	86	Atlantic	0	14*	39	30	16	1	85	3	1.075
2004	347	282	86	Atlantic	11	8	51	25	5	0	81	1	1.087
2005	339	290	102	Atlantic	1	13	69	15	2	0	86	0	1.083
2006	401	333	89	Atlantic	1	14	74	10	1	0	84	1	1.087
2007	359	303	82	Atlantic	2	12	65	16	5	0	86	2	1.075
2008	341	279	98	Atlantic	3	14	57	17	11	0	84	3	1.079
2009	356	288	105	Atlantic	2	11	67	12	8	0	87	8	1.066
2010	367	253	93	Atlantic	4	24	65	5	2	0	72	5	1.072
2011	331	278	106	Atlantic	3	11	63	17	6	0	86	3	1.074
2012	363	300	70	Atlantic	2	9	57	16	15	0	88	7	1.074
2013	314	282	110	Atlantic	2	7	59	18	14	0	92	2	1.071
2014	295	192	85	Atlantic	5	25	60	6	4	0	70	7	1.068
2015	279	201	79	Atlantic	3	15	64	10	8	0	82	13	1.067
2016	263	167	61	Atlantic	9	23	56	6	6	0	67	6	1.071
Average	**338**	**274**	**88**		**3**	**14**	**59**	**17**	**8**	**0**	**83**	**5**	**1.074**

[1] Marketable yield: Sum of size classes A1 to A3.
[2] Size classes: C = 0.5 to 1.5 inches, B = 1.5 to 1 7/8 inches, A1 = 1 7/8 to 2.5 inches, A2 = 2.5 to 3.25 inches, A3 = 3.25 to 4 inches, A4 >4 inches;
[3] Size distribution by class: Class (wt)/(Total Yield [wt] – culls [wt])
n.a. = not available
* Classification = <1 7/8 inches (C and B included in this classification)

Table 3. Vine maturity, tuber characteristics, and internal tuber defects of 'Harley Blackwell' potato variety grown at the UF/IFAS Hastings Agricultural Extension Center, Hastings, FL from 1998 to 2016, excluding 2001.

Year	Vine Maturity (vine kill)	Tuber Characteristics[1]						Internal Defects[2]			
		Internal Flesh color	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall Appearance	HH	BR	CRS	IHN
1998	0	0	8	7	3	6	7	0	0	0	0
1999	0	0	8	5	2	4	6	0	0	0	0
2000	0	0	6	5	2	6	6	0	0	0	0
2002	2	2	7	6	2	7	7	0	0	0	1
2003	5	1	6	5	2	6	7	12	0	0	0
2004	4	1	7	5	2	7	7	0	0	0	0
2005	6	1	6	5	2	7	7	0	0	0	0
2006	*	1	6	6	3	6	6	0	0	0	0
2007	6	2	6	5	3	5	7	0	0	0	0
2008	5	2	7	5	2	6	7	0	0	0	0
2009	3	1	6	5	3	4	6	1	0	0	0
2010	7	1	6	5	3	6	7	2	0	0	1
2011	3	1	6	5	2	5	7	0	0	11	2
2012	5	2	6	5	3	5	6	1	0	0	1
2013	5	1	6	5	3	4	6	2	0	0	2
2014	2	1	7	5	3	5	7	0	0	0	0
2015	6	1	9	8	2	7	8	0	2	0	0
2016	7	1	6	7	2	7	7	0	0	0	0
Average	**4**	**1**	**7**	**5**	**2**	**6**	**7**	**1**	**0**	**1**	**0**

[1] See rating system outlined in Florida Rating Code Table (Table 1).
[2] Percent tuber defects. HH = hollow heart, BR = brown rot, CRS = corky ring spot, IHN = internal heat necrosis.
*data not available