

Progress Report for 2009
Cranberry Varieties Trials

Project No.: Continuing 13C-4167-1217

Title: Cranberry Varieties Trials

Year initiated: 2003 **Current year:** 2009 **Terminating year:** 2010

Personnel: Kim D. Patten, WSU-Long Beach, Extension Specialist

Title: Evaluation of new cranberry varieties for the Pacific Northwest.

Justification:

As cranberry growers plant new acreage or replant existing beds, they want to select varieties that are 1) adapted to the growing region, and 2) high-yielding. Selecting a variety (or varieties) with pest resistance or some level of tolerance may also reduce the overall requirements for pesticides and hence lower the cost of production and increase return per acre. Besides yield, the suitability of a variety for the fresh fruit market is a very important criterion for many growers in Grayland. The goal of this project is to evaluate genotypes for low levels of field and storage rot with good yield and ease of dry harvesting.

Objectives:

1. Maintain the new replicated planting on the Pacific Coast Cranberry Research Farm in Long Beach with 9 new genotypes and 2 standard varieties.
2. Gather data on vine cover, upright density and initial fruit quality.

Results:

Objective 1) Maintain the new replicated planting on the Pacific Coast Cranberry Research Farm in Long Beach with 9 new genotypes and 2 standard varieties.

A field planting, using a randomized complete block design, was planted in summer 2003. Vines were obtained from Nick Vorsa's breeding program at Rutgers University (njs98-23, njs95-37, cnj96-44-83, cnj97-105-4, cnj95-20-20, cnj93-9-42, cnj93-13-100, njs98-65, njs98-28) and from an old cultivar trial in Wisconsin (BE4, AR2, BAIN FAVORITE #1). Pilgrim and Stevens (DNA-tested) from Rutgers were used for comparisons. Plots have been maintained using standard horticultural practices and have reached maturity.

Objective 2) Gather data on variety performance.

Vines have come into full production. Yield, fruit size, and brix data were collected (Tables 1 to 3). The yield components from several select varieties were also taken

(Table 3). Fruit rot data is still pending. Based on production and other variables, Pilgrim is still the top performing selection over time. In 2009, BE4, CNJ 44-83, CNJ95-37, NJ93-13-100, Pilgrim and CNJ93-9-42 were all fairly comparable, with BE4 having the highest yield. Crimson Queen usually had the largest fruit, BE4 the smallest. Of the two new releases, Crimson Queen and Mullica Queen, only Crimson Queen has distinguished itself as a superior cultivar for the PNW. Yield component data indicate that BE4's high yield is the result of higher number of fruit/upright, greater percentage of fruit set and upright density. Pilgrim and BE4 were the least prone to produce runners.

Dr. Vorsa has indicated he plans to release CNJ 44-83, CNJ95-37, CNJ93-9-42 and CNJ 95-20-20 in the near future.

Table 1. Yield from 2003 cultivar/advanced selection trials in Long Beach WA

Variety	Yield bbl/ac					
	2005	2006	2007	2008	2009	Total
'Crimson Queen'	77	179	347	242	293	1138
njs95-37	85	277	322	246	356	1286
'Mullica Queen'	23	20	252	178	206	679
cnj96-44-83	54	203	288	270	369	1184
cnj95-20-20	32	180	253	173	247	885
cnj93-9-42	61	187	451	266	337	1302
nj93-13-100	46	135	295	213	360	1049
BE4	150	217	383	229	376	1355
AR2	16	222	290	239	346	1113
Bain Favorite #1	46	177	212	200	286	921
Pilgrim	257	202	327	345	334	1465
Stevens	1	48	209	138	246	642
njs98-65	11	201	335	196	268	1011
njs98-28	27	171	352	153	261	964
LSD 0.05	61	46	112	104	153	

Table 2. Fruit size from 2003 cultivar/advanced selection trials in Long Beach WA

Variety	Fruit size (grams/fruit)			
	2007	2008	2009	Average
'Crimson Queen'	1.56	1.56	1.58	1.57
njs95-37	1.18	1.06	1.17	1.14
'Mullica Queen'	1.52	1.42	1.38	1.44
cnj96-44-83	1.39	1.26	1.31	1.32
cnj95-20-20	1.23	1.17	1.09	1.16
cnj93-9-42	1.34	1.23	1.18	1.25
nj93-13-100	1.10	1.00	1.15	1.08
BE4	1.11	1.00	1.13	1.08
AR2	1.42	1.20	1.27	1.30
Bain Favorite #1	1.73	1.44	1.44	1.54
Pilgrim	1.48	1.31	1.38	1.39
Stevens	1.09	1.10	1.16	1.12
njs98-65	1.65	1.37	1.63	1.55
njs98-28	1.46	1.26	1.31	1.34
LSD 0.05	0.11	0.13	0.16	0.13

Table 3. Fruit BRix from 2003 cultivar/advanced selection trials in Long Beach WA

Variety	BRIX		
	2007	2008	2009
'Crimson Queen'	8.1	7.9	8.1
njs95-37	8.8	7.9	8.7
'Mullica Queen'	8.8	8.8	9.0
cnj96-44-83	9.1	8.6	8.5
cnj95-20-20	8.2	8.1	8.1
cnj93-9-42	8.3	8.2	8.4
nj93-13-100	8.6	8.9	8.0
BE4	8.3	7.3	7.8
AR2	8.7	8.1	8.6
Bain Favorite #1	8.1	9.0	8.8
Pilgrim	8.9	7.8	8.6
Stevens	9.3	8.2	8.9
njs98-65	8.9	8.2	9.0
njs98-28	8.9	8.1	8.1
LSD 0.05	0.7	0.8	0.7

Table 4. Various yield components of several cultivar/advanced cranberry selection trials in Long Beach WA

Variety	Yield Component				
	# fruit/upright	#upright/ft ²	% fruiting uprights	% fruit set	# runners/m ²
Crimson Queen	1.5	178	74	55	31
Mullica Queen	1.4	175	63	53	13
Pilgrim	1.8	214	89	51	2
Stevens	1.6	170	76	49	15
Willapa Red	1.9	254	78	59	3

