



Progress Report 2009: Stone Fruit

Carol Miles, Gary Moulton and Jacqueline King
WSU Mount Vernon NWREC
16650 State Route 536, Mount Vernon, WA 98273
Tel. 360-848-6131 Email gamoulton@wsu.edu
<http://maritimefruit.wsu.edu/>

Introduction

Beginning in the 1970s, WSU Mount Vernon NWREC has responded to nursery growers, researchers, and hobbyists to investigate stone fruit cultivars that have the potential for high quality fruit production in western Washington. Interest in evaluating new stone fruit cultivars and selections has been reinforced by the search for potential commercial stone fruit crops for possible U-pick or farm markets. The stone fruit trial of peaches, nectarines, plums, and apricots, established in 2000, is scheduled for conclusion in 2010. The trial plot of sweet cherries on dwarfing Gisela rootstocks (primarily Giesela 5), established in 1998 with ongoing additions, was concluded in 2008; the plot was still maintained in 2009 but no data was taken. A small scale observational trial of selected sweet cherry cultivars for comparison under rain cover and uncovered was planted in 2009 but the study was not implemented due to inability to secure grant funding.

Methods

In 2009 the stone fruit trial plots included 32 peach, 7 nectarine, and 39 plum varieties. Of the 39 plum entries, 11 are cultivars and selections from the Geneva, NY breeding program planted in 2008. Plots are drip irrigated 2 times per week for 2-4 hours, beginning in late May, and based on soil moisture readings. Weed control is a soil residual herbicide application targeted to problematic weeds. Entries were screened for their suitability for either home orchards or commercial production in a cool maritime climate.

Data observations made at bloom for plum and peach and nectarine included bloom time, bloom abundance, bloom type for peach and nectarine, and productivity. Data are presented for 2007, 2008 and 2009 for comparison purposes. To evaluate peach and nectarines, fruit was harvested, sorted into marketable fruit and those showing external evidence of split pits, and counted. For the peach and nectarine blocks, harvest data included total fruit, average number of fruit per tree, and percentage of split pits. For plums average weight of 25 fruit were taken and brix was measured for 5 fruit.

Six new cherry selections from the Geneva, NY breeding program were planted in 2009 in an observational study to see the effect of rain covers on these selections. Plots were not replicated but had 1-3 trees of each selection that were to be under the rain cover and uncovered. The rain covers were not erected as funding was not secured for this study.

Results and Discussion

In 2009 weather conditions were good overall for stone fruit production. Spring bloom was normal, and most of the entries set fruit. Plums showed good bloom abundance and there was good fruit set for many entries. Several cultivars have been consistent in terms of bloom and fruit set over the course of this study (Table 1). Peach and nectarine varieties set more fruit than in 2008, with good bloom abundance (Table 2). Percent of split pits were compared with 2007 and 2008 (Table 3). BlazingStar and HW272 were the most promising for fruit productivity,

quality and low incidence of split pits. They both offer the most potential for commercial U-pick peach as compared to other entries in this study. Contender is by far the most freestone peach with very low split pit incidence; however, consistency in bearing can be a problem. Allstar appears promising as well but is later maturing, and fruit had a more bitter flavor in 2008 which was a cooler year. Most nectarine varieties produced fruit with severe cracking in 2009.

Several plum varieties look promising and produce sweet high-quality plums over a wide harvest window (Table 4). More information on plums can be obtained from the WSU Extension publication Fruit Handbook for Western Washington EB 0917 <http://maritimefruit.wsu.edu/>. New plum cultivars that were planted in 2008 were too young for fruit evaluation in 2009.

Acknowledgements

Financial support for this study has been provided by the Western Washington Fruit Research Foundation 1992-2009 and the Washington State Nursery and Landscape Association 1992-2009. Local nurseries have donated trees and materials; their contributions are gratefully acknowledged.

Table 1. Observed full bloom date and bloom abundance¹ of plum cultivars at WSU Mount Vernon NWREC in 2008 and 2009, arranged in order of 2009 full bloom date.

Cultivar	Kind	Abund. 2008	Abund. 2009	Full Bloom 2008	Full Bloom 2009
Earlimagic	plum	4.5	4.5	25 Mar	16 Apr
Beauty	plum	5	5	25 Mar	16 Apr
Shiro	plum	5	5	9 Apr	16 Apr
NJ PC2	plumcot	3	4.5	18 Apr	16 Apr
NJ PC5	plumcot	4	3.5	18 Apr	16 Apr
Kuban Comet	plum	5	5	9 Apr	16 Apr
Kuban Delight	plum	5	5	12 Apr	24 Apr
Obilnaja	plum	5	5	9 Apr	24 Apr
Sugar	plum	-- ²	3	--	24 Apr
Jubilee	plum	--	5	--	24 Apr
Veeblue	plum	--	5	--	24 Apr
Victoria	plum	--	4.5	--	24 Apr
Vanette	plum	--	4.5	--	26 Apr
Dester	plum	--	4	--	26 Apr
Vallerie	plum	--	5	--	30 Apr
Vision	plum	--	4.5	--	30 Apr
Mount Royal	plum	--	5	--	30 Apr
Moldavian	plum	--	5	--	30 Apr
Pipestone	plum	--	4.5	--	30 Apr
Toka	plum	--	5	--	30 Apr
Mirabelle, Raintree	plum	--	5	--	30 Apr
Mirabelle, Geneva	plum	--	5	--	30 Apr
Cambridge Gage	plum	--	2.5	--	30 Apr
Coe's Golden Drop	plum	--	4	--	30 Apr
Longjohn	plum	--	4	--	30 Apr
Reine de Mirabelle	plum	--	5	--	2 May

¹ Bloom abundance rating for all fruit kinds: 1 = very sparse, few or no flowers 2 = sparse, most areas of tree lack flowers or dense clump of flowers and rest of tree bare 3 = moderately abundant, some areas of tree lack flowers, 4 = abundant most areas of tree in bloom, 5 = very abundant, all areas of tree filled with bloom.

² Data not collected 2008 due primarily to poor set.

Table 2. Observed full bloom date and bloom abundance¹ of certain peach and nectarine cultivars at WSU Mount Vernon NWREC in 2008 and 2009, arranged in order of 2009 full bloom date.

Cultivar	Kind	Bloom Type ²	Abund. 2008	Abund. 2009	Full Bloom 2008	Full Bloom 2009
Starfire	peach	NS	5	4.5	11-Apr	20-Apr
HW 273	peach	NS	5	3.5	13-Apr	20-Apr
Harken	peach	NS	4	3	15-Apr	20-Apr
Early Loring	peach	S	5	4.5	15-Apr	20-Apr
H 14-126	peach	S	5	5	18-Apr	20-Apr
Redhaven	peach	NS	4	4	18-Apr	20-Apr
H 13-98	peach	NS	4	2	18-Apr	20-Apr
K 54-25	nect	NS	5	3	20-Apr	20-Apr
Harbelle/Cit	peach	NS	5	5	22-Apr	20-Apr
Harbelle/Lov	peach	NS	4	4	22-Apr	20-Apr
K 56-4	nect	S	5	5	13-Apr	24-Apr
HW 110	nect	NS	5	3.5	13-Apr	24-Apr
Coralstar	peach	NS	5	3	13-Apr	24-Apr
NJ 318	peach	NS	4.5	3	15-Apr	24-Apr
H 4-44	peach	NS	4.5	4	15-Apr	24-Apr
Roseprincess	nect	S	5	4	18-Apr	24-Apr
L 7-176	peach	NS	4	3.5	18-Apr	24-Apr
Allstar	peach	NS	4.5	4.5	18-Apr	24-Apr
TriLite	peach	S	5	4.5	18-Apr	24-Apr
Hardired	nect	S	5	5	18-Apr	24-Apr
Redstar	peach	NS	4.5	4	18-Apr	24-Apr
HW 272	peach	NS	5	4	18-Apr	24-Apr
J 19-18	peach	S	4.5	3	18-Apr	24-Apr
Early Redhaven	peach	NS	4	4	18-Apr	24-Apr
D 88-147	peach	NS	4.5	4	20-Apr	24-Apr
H 11-73	peach	NS	4	3	20-Apr	24-Apr
Betty	peach	S	4.5	4	20-Apr	24-Apr
Frost	peach	S	4	4	22-Apr	24-Apr
Blazingstar	peach	NS	5	4	22-Apr	24-Apr
HW 111	nect	S	4	4.5	15-Apr	30-Apr
Contender	peach	NS	4.5	5	20-Apr	30-Apr
Risingstar	peach	NS	5	5	20-Apr	30-Apr
Township	peach	S	4	4	22-Apr	30-Apr
Vivid	peach	NS	3.5	3.5	22-Apr	30-Apr

¹ Bloom abundance rating for all fruit kinds: 1 = very sparse, few or no flowers 2 = sparse, most areas of tree lack flowers or dense clump of flowers and rest of tree bare 3 = moderately abundant, some areas of tree lack flowers, 4 = abundant most areas of tree in bloom, 5 = very abundant, all areas of tree filled with bloom.

² Bloom type: S=showy flowers; NS=non-showy flowers.

Table 3. Average fruit per tree and observed percentage of split pits in peach and nectarine cultivars at WSU Mount Vernon NWREC in 2009, compared with 2007 and 2008, arranged in order of 2009 harvest date.

Cultivar	Harvest Date	Avg. Fruit/Tree			% Split Pits		
		2007	2008	2009	2007	2008	2009
Early Redhaven	4 Aug			64			17
Harbelle	4 Aug			208			8
Risingstar	4 Aug			167			17
K 56-4 (N) ¹	4 Aug			122			6 ²
Redhaven	14 Aug			75			11
HW 272	14 Aug		74	44		8	16
Blazingstar	14 Aug	219	89	140	2	0	6
Vivid	20 Aug			140			6
Early Loring	20 Aug			72			1
Township	20 Aug	66	41	45	6	31	7
Starfire	20 Aug			49			4
Frost		97	111		2	22	
Betty	20 Aug	121	59	47	1	17	9
Roseprincess (N) ¹		97	37		8	34	
HW 110 (N) ¹		105	20		5	45	
TriLite (Y) ¹			4			13	
Allstar	25 Aug	142	34	126	7	26	1
Contender	2 Sept	191	8	173	2	13	0
H14-126	2 Sept			84			2

¹ N=nectarine; Y = young trees

² 70% of fruit had cracked skin

Table 4. Harvest date, weight, rot and cracking of 25 representative fruit, and juice brix extracted from 5 representative fruit for selected plum cultivars at WSU Mount Vernon NWREC in 2009.

Cultivar	Harvest Date	Wt. 25 frt	Rot 25 frt	Crack 25 frt	Brix 5 frt.
Beauty	6 Aug	4.70	0	0	12.0
Kuban Comet	6 Aug	3.10	0	0	13.0
Obilnaja	6 Aug	4.30	0	0	13.0
Vallerie	6 Aug	4.30	0	0	15.5
Shiro	25 Aug	4.97	0	0	15.0
Reine de Mirabelle	25 Aug	1.96	0	0	19.8
Mount Royal	25 Aug	2.17	0	0	18.2
Victoria	18 Sept	2.5	0	0	17
Vision	18 Sept	3.9	0	0	21
Longjohn	18 Sept	---	0	0	19
Coe's Golden Drop	18 Sept	---	0	0	21