

MSU Peach Program Update 2015

Bill Shane

Supported by:

Michigan Peach Sponsors
 SWMREC Research Grant Program
 USDA Specialty Block Grant Program
 SWMREC Ag Leaders Club

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MSU Peach Projects

- Peach & nectarine variety evaluation work
- Peach variety breeding work
- Peach systems / mechanical thinning work

New Peach and Nectarine Variety Evaluation Work at MSU

Older peach varieties	Newer varieties with significant production	Newest peach varieties
Harbinger = -33*	PF-1 = -30	Rich May = -28
Narrow Diamond = -25	PF-5B = -25	Desiree = -26** PF-5D Ball = -22** Earlstar = -18** PF Early 8 Ball = -17**
Garnet Beauty = -10 Early Red Haven = -10 Oaks = -6 Sentry = -8	Glenglo = -13 PF-7 = -10 Summer Serenade = -10 PF 8 Ball = -10 PF-7A Freestone = -10 Rising Star = -8	Brightstar = -12** PF Late 8 Ball = -5**
Redhaven = 0 Reliance = 0 Vivid = +2 Ballade = +3 PF-12A = +3 John Boy = +3	PF 9A-007 = -2 PF 11 Peach = -2 PF 15A = +2 Blazing Star = +2 Starfire = +3 Redstar = +3 PF 14 New Jersey = +4	PF Lucky 13 = +6**
Glohaven = +8 Canadian Harmony = +10 Loring = +12 Suncrest = +12	Stata Prince = +8 Bounty = +10 PF 17 = +12	PF Super Duper = +8** John Boy II = +8** Gloria = +13** SweetStar = +14**
Contender = +18	PF 19-007 = +14 Altair = +10 Constar = +16 Beaumont = +19	Messina = +17**
Cresthaven = +24 Redskin = +26	PF 23 = +20 PF 24-007 = +22 Glowingstar = +22 PF 24C Cold Hardy = +24 PF 25 = +26	PF 22-007 = +20** July Prince = +24** PF Paramount = +26**
Madison = +28 Harcrest = +28 Fayette = +28 Encore = +31	PF 27A = +30 PF 28-007 = +32 Autumn Star = +37** PF 35-007 Fall Lady = +40** Lancel = +41 PF Big George = +50**	Flama Prince = +38** PF Legendary = +41** Victoria = +47** PF Fairbrother Lady = +54**

Table 2. Relative fruit bud winter hardiness rating for peach and nectarine varieties following 2013/2014 winter, SW Michigan Research and Extension Center.

Fruit bud hardiness rating	Peach	Nectarine	PeenTo
Low (poor bud survival)	Crimson Rocket, Flavrburst, PF11 Peach, PF7A-Freestone, Sweet Breeze	Ambre, Emerald*, Honey Blaze	Tangos I (NJF16), Buenos I (NJF18)
Intermediate	Autumnstar, Beaumont, Canadian Harmony, Coralstar, Cresthaven, Desiree, Early Redhaven, Glenglo, Gloria, Harrow Diamond, Halehaven, Loring, Messina, PF24C-Cold Hardy, PF35-007, Redstar, Risingstar, PF19-007, Vinegold#	Easternglo, Fantasia Zephyr	Galaxy, Tangos II (NJF17)*
High (good fruit bud survival)	Allstar, Blushingstar*, Brightstar, Catherine#, Contender, Earlstar, Ernie Choice, Flameprince, Glowingstar, Madison, McKay, PF Early 8 Ball, PF-25, Redhaven, PF9A-007, PF8 Ball, PF23, PF27A, PF28-007, Richhaven, Starfire, Veteran, Victoria, Virgil#		Saturn*

* = white flesh, # = non-melting flesh canning type. Limb tip dieback ratings made June 17, 2014.

Plum and peach branch end dieback

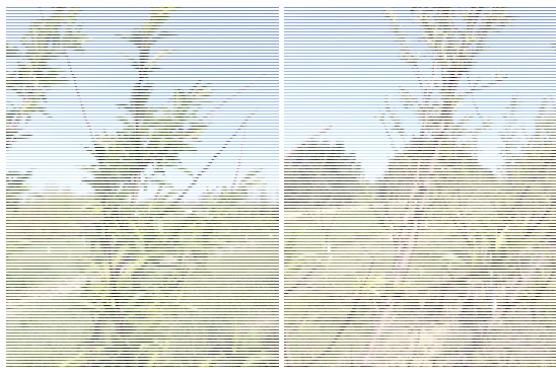


Table 3. Branch tip dieback rating for peach and nectarine varieties following 2013/2014 winter, SW Michigan Research and Extension Center.

Limb dieback rating	Peach	Nectarine	PeenTo
6 = severe			BuenOs I (NJF18)
5	Flavrburst, Crimson Rocket, Vinegold,		Tangos I (NJF16), Tangos II (NJF17)*, BuenOs II (NJF15)
4	Halehaven, Glowingstar, Gloria, Glenglo, Desiree, Ernies Choices, PF11 Peach		
3	Honey Blaze, Sweet Breeze, PF-7A Freestone		
2	Redhaven, PF Early 8 Ball, PF-23, PF-9A-007, Newhaven, Messina, Beaumont, PF-27A, Blushingstar*, Flameprince, PF-25, Catherina, Autumn Star, Victoria, Virgil, Redstar, Cresthaven, PF-28-007, Summerfest, Risingstar, PF-24C Cold Hardy	Easternglo, Emeraude*, Zephyr*, Ambre,	
1 = no damage	Brightstar, Coralstar, Allstar, Canadian Harmony, Early Redhaven, Glohaven, Madison, McKay, Contender, Harrow Diamond, PF-19- 007, Earlystar, PF35-007, PFSD Big, Loring, Starfire, Veteran	Fantasia, PF11 Nectarine, Silver Gem*	Saturn*

* = white flesh, # = non-melting flesh canning type. Limb tip dieback ratings made June 17, 2014.



Range of bacterial spot resistance in peach



Clayton' (left) & 'Redhaven



Redhaven



California variety

Table 4. Relative bacterial spot disease ratings for peach and nectarine varieties, SW Michigan Research and Extension Center.

Rating	Peach	Nectarine	PeenTo
Little to no leaf symptoms	Sweet Breeze, Veteran, Madison, Glenglo, PF-25, PF35-007, Brightstar, McKay, Risingstar, Gloria	Nectafest	Tangos (NJF16), Saturn
Up to 10% leaf area affected	Messina, Blushingstar*, Harrow Diamond, Sunhaven, PF-9A-007, Richhaven, Catherina#, Redstar, Ernies Choice, Loring, Beaumont, Allstar, Canadian Harmony, Contender, Halehaven, Glowingstar, July Rose*, Flameprince, Victoria, Glohaven, Virgil#,	Carene, Emeraude*, PF11 Nectarine	BuenOs II (NJF15)
10 to 25% leaf area affected, some leaf drop	PF-8 Ball, Starfire, Autumn Star, PF23, Desiree, Summerfest, Redhaven, PF 5D Big, Early Redhaven, PF-27A, Flavrburst, Newhaven, PF-7A Freestone, PF28-007, Vinegold#, PF-24C Coldhardy, Earlystar, PF11 Peach, Cresthaven, Coralstar	Fantasia, Zephyr*, Silver Gem*	BuenOs I (NJF18)
25% or more leaf area affected, significant defoliation	PF Early 8 Ball, Crimson Rocket	Easternglo, Ambre	Tangos II (NJF17)

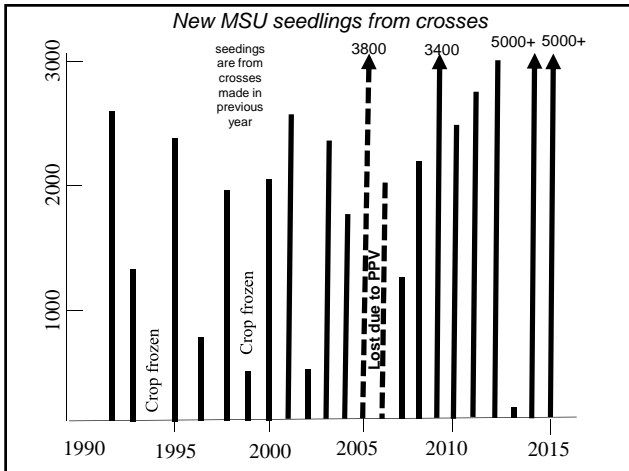
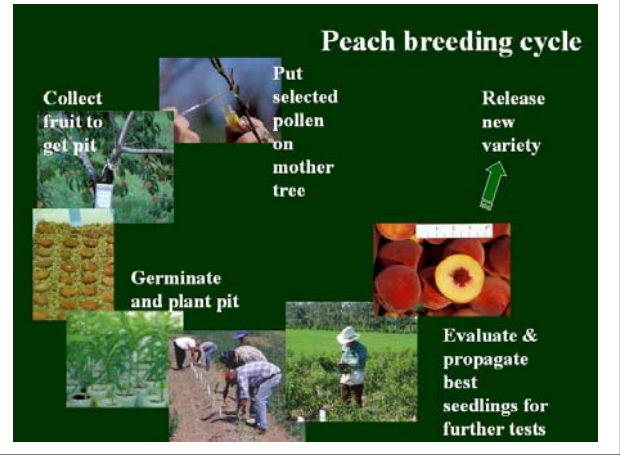
* = white flesh, # = non-melting flesh canning type. Ratings July 15, 2014



Goal of MSU peach breeding program

- To develop high quality and highly marketable peach varieties suitable for the Michigan fresh market peach industry
- To make sure that the Michigan industry continues to have new peach varieties
- Filling gaps, finding needed replacements for Michigan peach season

Partnership between by the Michigan Peach Sponsors and Michigan State University



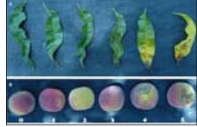
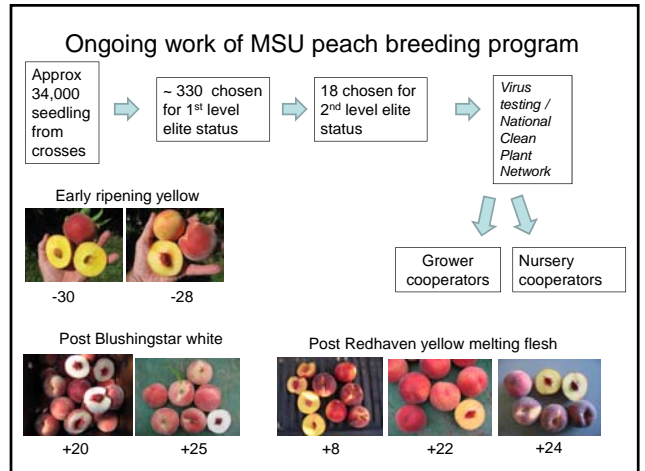
Recent peach elite selections

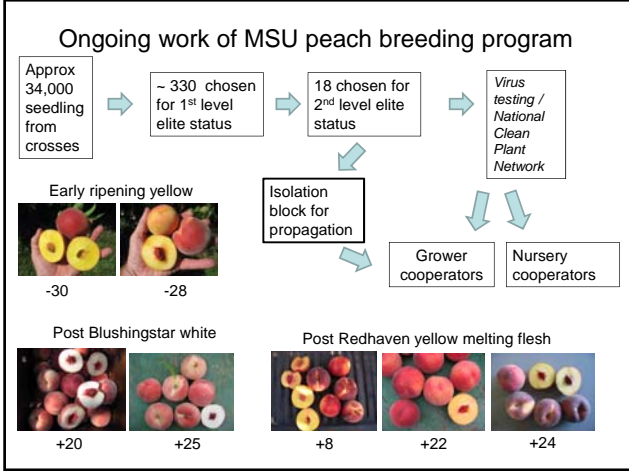
Year seedlings selected for propagation for elite block	Source	Number selected
2012	Nursery 14	20
2013	Nursery 14	5
	Nursery 15	22
	Nursery 16	1
2014	Nursery 15	23
	Nursery 16	4
	Nursery 18	1

2 of the 28 elite selections made in 2014

Assay for genes for peach fruit bacterial spot resistance **RosBREED**
 G1XapF & G6XapF loci

MSU peach elites testing + for resistance genes	G1		G6		Accession	G1		G6	
	+	-	+	-		+	-	+	-
Orange	+	+	+	+	979A-007	+	+	+	+
9142(2)	+	+	+	+	9735-007	+	+	+	+
746(8)	+	+	+	+	9725	+	+	+	+
35 9(14)	+	+	+	+	Messina	+	+	+	+
35 5(46)	+	+	+	+	GlowingStar	+	+	+	+
35 32(5)	+	+	+	+	Emies Choice	+	+	+	+
35 25(4)	+	+	+	+	Blushingstar	+	+	+	+
34 36(15)	+	+	+	+	Seamont	+	+	+	+
35 35(22)	+	+	+	+	9 21(8)	+	+	+	+
34 35(24)	+	+	+	+	39 23(33)	+	+	+	+
311(8)	+	+	+	+	35 8(53)	+	+	+	+
35 5(7)	+	+	+	+	35 15(7)	+	+	+	+
35 12(11)	+	+	+	+	35 14(29)	+	+	+	+
SweetStar	+	+	+	+	Yanoch 139	+	+	+	+
StarFire	+	+	+	+	9723	+	+	+	+
9724C	+	+	+	+	9719-007	+	+	+	+
Flamepeppa	+	+	+	+	3 35(23)	+	+	+	+
7 38(1)	+	+	+	+	35 26(9)	+	+	+	+
9 32(37)	+	+	+	+					
9 24(65)	+	+	+	+					
35 8(9)	+	+	+	+					
35 7(46)	+	+	+	+					
35 7(27)	+	+	+	+					
35 7(22)	+	+	+	+					
35 26(2)	+	+	+	+					
35 34(29)	+	+	+	+					
34 36(75)	+	+	+	+					



Thanks to the following supporters:

- Michigan Peach Sponsors
- SWMREC Grant Program
- Ag Leaders Club
- Michigan Department of Agriculture
- Michigan State Horticultural Society