



# Southeastern Regional Peach Newsletter

Volume 4, No. 2      May 2004

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## Editors Note

So far, so good. This is shaping up to be a pretty impressive year relative to the peach crop in the Southeast. As a plant pathologist working on peach diseases, I feel somewhat like the Maytag repairman this year; dry conditions have limited disease development so far in Georgia and much of the Southeast, but any shift to a wet season can change the disease condition overnight. However, we have seen powdery mildew in numerous sites throughout the Southeast, probably due to drier, cooler conditions. This can be considered an occasional disease, somewhat like rust (see May 2003 issue). I will discuss powdery mildew in some detail, since it is causing surprise and concern for some producers. Also in this issue, Wayne Mitchem discusses post-emergence weed control, which can have a significant impact on fruit size. Desmond Layne, Eric Hitzler, and Dick Okie have provided an excellent review of peach varieties, and we are privileged to have this as a resource.

As always, we hope all continues to go well, and Godspeed to all.

*Phillip M. Brannen*  
Editor

## Focal Points – New Information for the Peach Industry

**Sinbar – New use for an old standard.** Sinbar has been registered for use in orchards for years; however, it can now be applied in newly planted orchards once rainfall or overhead irrigation has allowed soil to settle around tree roots after planting. In newly planted orchards, the use rate cannot exceed 1 lb/A per year, although that rate may be split and applied in two applications. Applying Sinbar in sequential applications will result in better control of more difficult weeds, and sequential applications may extend residual activity for several weeks. Trials conducted in SC last year indicated favorable results with Sinbar applied sequentially, as compared to a sequential Surflan program (see table below). The current label for Sinbar use in newly planted orchards restricts use to orchards with soils having 2% organic matter or more and sandy loam or finer texture.

Sinbar applied at 1 lb/A will provide residual control of the following weeds: common chickweed, large crabgrass, henbit, lambsquarter, annual ryegrass, foxtail, horseweed, jimsonweed, common ragweed, and nightshade. Sinbar can be tank mixed with postemergence herbicides for emerged weed control.

**Weed control with Sinbar vs. Surflan applied sequentially in a newly planted peach orchard.**

Herbicide	Application Time and Rate		% Bare Ground		Goosegrass Control
	3/3/03	5/16/03	May	July	July 1, 2003
Sinbar	0.25 lb	0.5 lb	54	98	94
Sinbar	0.5 lb	0.5 lb	78*	94	97
Surflan	2 qt	2 qt	58	90	79*

\*Denotes significant difference  $P \leq 0.05$

## Horticulture Update

**Variety Selection: So many wonderful choices – how do I begin?**

*Desmond Layne and Eric Hitzler,  
Clemson University*

*Dick Okie  
USDA-ARS*

**Introduction:** Selection of varieties for a new peach orchard is not something that should be taken lightly. Because an orchard is a long-term investment, the grower should obtain as much information as possible to make a good decision that will result in long-term profit. Many factors should be considered: i. Can the variety be grown in the area (i.e., based on chilling hours)? ii. Can the variety reliably crop from year to year? iii. Is the variety to be shipped to a distant market or sold at a local roadside market? iv. Does the variety have any significant flaws (i.e., highly susceptible to bacteriosis or other diseases – see Table 1)? v. Does the variety have the genetic potential to produce sufficient volume of large-sized fruit for its season? vi. Can it attain sufficient red color to satisfy the market demand? vii. Is it juicy and tasty? viii. Are you looking to develop a niche market (i.e., white flesh peaches for Asian consumers in nearby city)? ix. Are you willing to pay extra to purchase “patented” varieties? These are just some of the many questions one should ask.

This article is based on research funded by the SC Peach Council and presents the evaluation and testing of commercially-available varieties and advanced selections of peach and nectarine for production suitability in South Carolina. Although our testing is at three different geographic sites in SC, performance in other neighboring states may differ significantly depending on weather, pest and disease pressure, management practices, etc.

The results presented herein represent a useful **guide** for selecting potential alternatives for varieties that are not performing adequately. As a guide, they are not a substitute for evaluation on your own farm.

**Test Block:** If you are considering planting new or different varieties to replace “standards”, I would strongly encourage you to plant a small test block on your farm to evaluate different or new varieties for their local performance. An ideal test block would include the “standards” considered for phasing out plus the new or different varieties from the same ripening season considered for phasing in. In this way, you can confidently examine trees of the same age at the same location and evaluate consistency of cropping, bloom and ripe date, susceptibility to disease, fruit size, color, quality, and other attributes side-by-side. Such a test block should have at least 10 trees each of the varieties to be compared and trees should be examined for several fruiting seasons. Planting and utilizing such a test block is small investment that can assist in making profitable management decisions in the future. Plant such an orchard at a location where it will receive proper care and where you will be forced to drive by it several times a week. This will encourage you to visit it regularly and look at the trees and fruit throughout the season and to make comparisons on your own. Although a variety may perform well for us in our tests, it may perform poorly on your farm for various reasons as noted above. It is best to give new varieties a “trial run” before planting large blocks of them if you have no experience with them.

Varieties for our trials were obtained from various commercial nurseries around the U.S. Most of the advanced selections were the result of the breeding program of Dr. Dick Okie at USDA-Byron, Georgia. Our trials compare both yellow and white flesh peaches and nectarines, most with melting but some with non-melting flesh, several low-acid white peaches and nectarines and also some niche (flat) types.

#### **Objectives of our Work:**

1. To evaluate a wide array of commercial peach and nectarine varieties developed from public and private breeding programs across the U.S. for bloom date, crop set, fruit size, shape, color and quality, disease and insect susceptibility and to determine suitability for the South Carolina peach industry and neighboring states.
2. To evaluate promising advanced selections from the stone fruit breeding program at USDA-Byron in comparison with industry standard varieties at grower farms in the two primary fruit growing regions of SC, the Piedmont and the Ridge.
3. To collect numeric data, digital images and variety descriptions and post all relevant information on my peach web site for growers to see and utilize at their leisure on their own personal computer over the internet.

**Trial Specifics:** The evaluation project comprises three separate research orchards. The largest and most diverse planting is at the Clemson University Musser Fruit Research Farm in Seneca, SC. At Musser, there are 250+ commercial varieties and advanced selections that are being tested. Each year, new advanced selections and varieties are added to the collection. Evaluation of this orchard began in 2000. For most of the varieties and advanced selections, we now have four years of performance data collected. Fruit evaluations at Musser begin in early May and proceed 3x/week until mid September. We maintain trees (i.e., dormant pruning, thinning, irrigation, fertilization, and pesticide application) according to Southeastern commercial standards. Some of the trees are planted at a conventional 18' x 18' spacing and trained to open center. Others are planted high density at 18' x 6' and

trained to the perpendicular V system. All trees receive summer pruning to remove vigorous watersprouts and to improve sunlight penetration into the canopy to enhance fruit coloration and maintain fruiting wood in the lower parts of the canopy.

Two nearly identical replicated research trials have also been established at commercial farms in SC. The Piedmont trial is located at Cash Farms in Cowpens, SC. This trial was planted in 2001 and fruit evaluations began in 2003. The Cash site compares 20 standard commercial varieties with 35 advanced selections from Dr. Okie's program. The Ridge trial is located at Watsonia Farms in Monetta, SC. This trial was planted in 2000 and fruit evaluations began in 2002. The Watsonia site compares 18 standard commercial varieties with 33 advanced selections from Dr. Okie's program. Fruit evaluations at Cash and Watsonia begin in early May and proceed 1x/week until mid September. The two off-campus sites are maintained by the commercial growers. They are planted high-density (403 trees/acre) using the perpendicular V training system and they also receive summer pruning as noted above for Musser.

**Results:** Data for all varieties and advanced selections for each year and location are summarized on the website (see below). For the purpose of this article, only superior performers are noted in Tables 2-4. Any varieties or advanced selections that did not attain sufficient size for their season, had a light (or no) crop, had poor shape/quality and/or high disease incidence/susceptibility were not included in the summary tables. For Tables 3 and 4, set and red are rated on a 1-6 scale with 6 being best. Size is reported as maximum diameter in inches.

In 2003, approximately 230 peach and nectarine varieties and advanced selections were evaluated at Musser. A summary "Top Performers" list for Musser is presented in Table 2 by ripening season summarizing the best yellow and white flesh varieties and advanced selections based on 4 years fruiting history. All of these noted in Table 2 performed consistently well at Musser. Two superior performers from Dr. Okie's selections have been proposed for commercial release in 2004, **Scarletprince** and **Julyprince**. There are other varieties and selections that did perform well at Musser but are not included in the table for space limitations. For the two grower trials, top performers for Watsonia and Cash Farms are noted in Tables 3 and 4, respectively. Several more fruiting seasons will be necessary at both sites to establish cropping consistency/reliability and develop reliable recommendations.

**New and Improved Website:** My old website has been deleted and a completely new and improved website was developed during the past 6 months. The new site address is:

**<http://www.clemson.edu/hort/Peach/index.php>**

**New Features:** The "Peach Information" section of the website contains information and links concerning plant protection, culture and management, general interest, a list of nursery suppliers and variety evaluations. The variety evaluation section of the site is completely new and utilizes a large, web-based searchable database. For each of the three trial sites (Musser Farm, Watsonia Farms, Cash Farms), you can look at any of the evaluation information for any of the years that a variety or selection has been evaluated. For each trial site, the varieties are grouped in consecutive order by ripening season beginning with early season (May). By choosing the "search" feature, you can direct a search of the database by

any of the parameters you are interested in (e.g., Location, Year, Season, Ripe Date, Variety, Bloom Date, Flesh Color, Chill Hours, Notes, Description, etc.). If, for example you wanted to search for nectarines, you would use the word, nectarine, in the notes window. The search feature can be as broad or as defined as you like. It will create a table for you so that you can compare varieties that match the same search criteria.

Each variety that is evaluated has a dynamically created page for the particular site and year of evaluation that includes a low resolution color image of the fruit at harvest in the top right hand corner of the page (see below). If you move your mouse pointer to that image and double click on it, it will open a new window with a large size image for closer inspection. This page also includes information on flesh color, chilling requirement, bloom and ripe dates, our numeric evaluation data, notes taken at harvest and a full description if available. If the variety was evaluated over multiple years, you will see “additional years” highlighted in orange and you can link directly to those other years for comparison purposes.



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## Bounty

2003 Musser Fruit Research Farm

<b>Season</b>	Redglobe Season
<b>Range</b>	June 30th - July 12th
<b>Additional Years</b>	<a href="#">2000</a>   <a href="#">2001</a>   <a href="#">2002</a>
<b>Sequence</b>	141
<b>Row</b>	6
<b>Tree</b>	10,11
<b>Flesh</b>	Yellow
<b>Chill Hours</b>	800
<b>Bloom Date</b>	March 14th
<b>Ripe Date</b>	July 11th



Set	Size	Shape	Pubes	Red	Attribute	Firm	Free	Status	Brix
7	3.4	7	7.5	7	7.5	10.4	7	1	

### Notes

some brown rot, 30% ripe, huge beautiful fruit, deep stem pit

### Description

Orig. at U.S. Dept. of Agriculture Appalachian Fruit Res. Sta., Kearneysville, W.Va., by R. Scorza, H.W. Fogle, L.E. Gilreath, K. Patten, E.W. Neuendorff, and W.R. Okie. Introd. in 1988. [(Halberta O.P.) x Redskin] x [Loring x [(Hiley x Fireglow) x Fireglow]]. Fruit: large (usually 65 to 75 mm, but can reach 100 mm); round; skin 30% to 80% red blush on yellow ground color; flesh yellow, nonbrowning, firm, freestone; flavor excellent. Ripens uniformly, about 16 days after Redhaven. Good cropping after natural freezes of -21 to -28C. Tree: vigorous; flower bud production 1.25 times that of Redhaven. Resistant to bacterial leafspot under normal disease pressure. Chilling requirement 800 h.

### Key

- Evaluations are based on a 1-8 scale (6=OK,7=Commercially acceptable, 8=Excellent)
- Size is in inches
- Shape: round is assumed, T=tip, P=point, S=suture, OB=oblate, OV=ovate
- Pubescence: 10=nectarine
- Freeness: 3=early cling, 8=completely free
- Status: 0=discard, 1=keep
- Notes: SOS=soft on suture, SOT=soft on tip, RIF=red in flesh
- RAP=red around pit, GGC=green ground color, sz=size, wh=white, yt=young tree, CCT=concave tip
- Bloom date is when approx. 90% of blooms are open (full bloom)

*The description of each variety of peach or nectarine fruit under each group is in different formats as this information is collected from varied sources and hence is not consistent*

Another exciting new feature of the website is the “compare” feature which will allow you to compare varieties side-by-side based on your choice. See below.



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## Variety Comparison

Image



<b>Variety</b>	<b>Bounty</b>	<b>Bounty</b>
<b>Location</b>	Cash Farms	Watsonia Farms
<b>Year</b>	2003	2003
<b>Season</b>	Blake Season	Redglobe Season
<b>Range</b>	July 13th - August 3rd	June 30th - July 12th
<b>Sequence</b>	0	0
<b>Row</b>		
<b>Tree</b>		
<b>Flesh</b>	Yellow	Yellow
<b>Chill Hours</b>	800	800
<b>Bloom</b>		
<b>Date</b>		
<b>Ripe Date</b>	July 15th	July 7th
<b>Set</b>	1	4
<b>Size</b>	3.1	3.19
<b>Shape</b>	7.5	8
<b>Pubes</b>	8	8
<b>Red</b>	7.2	7
<b>Attribute</b>	7.2	7
<b>Firm</b>	9.4	7.2
<b>Free</b>	8	8
<b>Status</b>	1	1
<b>Brix</b>		
<b>Notes</b>	some scab and basal suture sealing problems, tasty	maybe early, v lg. Fruit, scab, some dropping leaves, good taste
<b>Description</b>	Orig. at U.S. Dept. of Agriculture Appalachian Fruit Res. Sta., Kearneysville, W.Va., by R. Scorza, H.W. Fogle, L.E. Gilreath, K. Patten, E.W. Neuendorff, and W.R. Okie. Introd. in 1988. [(Halberta O.P.) x Redskin] x [Loring x [(Hiley x Fireglow) x Fireglow]]. Fruit: large (usually 65 to 75 mm, but can reach 100 mm); round; skin 30% to 80% red blush on yellow ground color; flesh yellow, nonbrowning, firm, freestone; flavor excellent. Ripens uniformly, about 16 days after Redhaven. Good cropping after natural freezes of -21 to -28C. Tree: vigorous; flower bud production 1.25 times that of Redhaven. Resistant to bacterial leafspot under normal disease pressure. Chilling requirement 800 h.	Orig. at U.S. Dept. of Agriculture Appalachian Fruit Res. Sta., Kearneysville, W.Va., by R. Scorza, H.W. Fogle, L.E. Gilreath, K. Patten, E.W. Neuendorff, and W.R. Okie. Introd. in 1988. [(Halberta O.P.) x Redskin] x [Loring x [(Hiley x Fireglow) x Fireglow]]. Fruit: large (usually 65 to 75 mm, but can reach 100 mm); round; skin 30% to 80% red blush on yellow ground color; flesh yellow, nonbrowning, firm, freestone; flavor excellent. Ripens uniformly, about 16 days after Redhaven. Good cropping after natural freezes of -21 to -28C. Tree: vigorous; flower bud production 1.25 times that of Redhaven. Resistant to bacterial leafspot under normal disease pressure. Chilling requirement 800 h.

Our goal is to make this website as user-friendly and useful as possible to growers, county agents, and others. We have also added a “**feedback**” feature where you can share comments directly to me on what you like or don’t like or features that should be added or changed and I’ll do what I can to make the changes as time permits. One grower who recently contacted me (name changed below) needed information on where he could buy trees. As a result, I added a section to the site for nursery suppliers with information on the nursery including a website link if one was available.

Please let us know if we can assist you further!



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## Feedback

*Send us your thoughts*

**Name**

**E-mail**

**Topic**

### Comments

I'd like to plant about a dozen or so peach trees in my home orchard. I've found the Clemson research on cultivar evaluations very helpful in selecting varieties to plant. My desire is to plant 2 trees of about 5 to 7 varieties selected to spread ripening times throughout the season. Problem is, I can't locate a retail source for

Clemson University, Clemson, South Carolina 29634 -- Area Code 864 -- Information 656-3311  
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### Contact Information for Dr. Layne:

Office: 177 Poole Ag. Bldg., Department of Horticulture, Clemson Univ., Clemson, SC 29634

phone: (864)-656-4961; fax: (864)-656-4960; e-mail: [dlayne@clemson.edu](mailto:dlayne@clemson.edu)

Table 1. Susceptibility of popular southeastern peach varieties to bacteriosis and fungal gummosis.

Listing of Peach Varieties in the Georgia/South Carolina Budwood Scheme, 2003							
	Georgia		S. Carolina		N. Carolina		
	Big Red		Autumnprince		<b>Cardinal</b>		
	Bounty		Big Red				
	Cary Mac		Blazeprince				
	Contender		Bounty				
	Empress		Carogem				
	Encore		Cary Mac				
	<b>Fireprince</b>		Contender				
	Flameprince		Cresthaven				
	Flordacrest		Dixired				
	Flordadawn		<b>Elberta</b>				
	Flordaking		Empress				
	GaLa		<b>Fairtime</b>				
	Goldprince		<b>Fireprince</b>				
	Gulfprince		<b>Flameprince</b>				
	Juneprince		GaLa				
	Majestic		Garnet Beauty				
	Redglobe		Georgia Belle				
	Redskin		Goldprince				
	Rubyprince		Harvester				
	Ruston Red		June Gold				
	Southern Pearl		Juneprince				
	Springprince		Loring				
	Sunprince		<b>O'Henry**</b>				
	Sureprince		<b>O'Henry**</b>				
	<b>Suwanee</b>		<b>Parade</b>				
			Redglobe				
			Rubyprince				
			<b>Summergold</b>				
			<b>Summer Lady</b>				
			Summerprince				
			Sunny J				
			Sunprince				
			Topaz				
			Winblo				
<b>Bold red indicates very susceptible to bacteriosis (Ritchie, Werner, Cain, Biggs, Okie)</b> <b>Bold blue indicates very susceptible to fungal gummosis (Beckman and Reilly)</b>							

Table 2:

2000-2003 Top Performers: Musser Fruit Research Center, Clemson University Clemson, SC.				
Cultivar/Selection	Season	Avg. Ripe Date (2000-2003)	Avg. Size (in.)	Notes
Maycrest	Goldcrest	May 15-19	2.45"	Full fruit set, good taste/color
Primerose		May 17-21	2.31"	<b>WHITE</b> , pretty flesh, slight heart shape
Queencrest		May 17-21	2.31"	Nice color, good taste
May Lady	Springcrest	May 26-31	2.49"	Nonmelting flesh, uniform color, mild taste, good juice
Springprince		May 26-31	2.44"	Nonmelting flesh, good set, mild taste/juice/sweetness, pretty
Suzi-Q		May 27-31	2.46"	Large fruit, uniform color and shape
SC83032-17-145 (Carored)	Goldprince	May 28-June 2	2.54"	Nice looking, uniform shape, good taste/juice/sweetness
SC84164-13-6		June 6-8	2.52"	<b>WHITE</b> , Attractive medium, good taste/juice/sweetness
Harrow Diamond		June 6-9	2.75"	Nice shape and taste
Sugar May		June 6-9	2.4"	<b>WHITE</b> , deep red color, good sweet, moderate juice
PF7	Coronet	June 9-13	2.66"	Very good taste, high juice/sweetness, attractive fruit
Southern Pearl		June 11-16	2.73"	<b>WHITE</b> , Beautiful sweet and juicy fruit
Gala		June 13-16	2.60"	Very good taste, low juice, heavy thinning necc., some splits
PF12A		June 17-23	2.41"	Nice taste, attractive red/orange ground color
White Lady	Harvester	June 20-26	2.52"	<b>WHITE</b> , Pretty fruit, good sweetness, low juice
SC84157-5-157 (Caroking)		June 20-25	2.75"	Large attractive fruit
Redhaven		June 22-25	2.68"	Full set, nice color, good taste, slight suture bulge possible
Jonboy	Redglobe	June 27-July 2	2.85"	Attractive red/orange ground color, good taste
Summer Sweet		June 29-July 7	2.52"	<b>WHITE</b> , Very attractive fruit, good taste/juice/sweetness
Early Elegant Lady		June 29-July 7	2.73"	Attractive fruit, some splits
FA66		June 29-July 9	2.90"	Nice size, color, good juice/taste, slight suture bulge possible
Winblo		June 30-July 3	2.74"	Beautiful fruit, good taste
BY87P994 (Scarletprince)		July 2-7	2.55"	Attractive fruit, very good taste/juice/sweetness
BY93P3427 (Julyprince)		July 3-10	2.65"	Nice color, taste, juice and sweetness
PF007		July 5-11	2.98"	Large fruit, very good taste/juice/sweetness, some splits
Bounty		July 6-11	3.00"	Beautiful fruit, good taste, slight suture bulge possible
Sugar Giant		July 8-15	2.85"	<b>WHITE</b> , Sweet, pale red ground color
Blake	Blake	July 16-28	2.98"	Delicious, some suture bulging
Sunprince		July 23-28	3.06"	Big pretty fruit, needs more red
Summer Pearl		July 23-29	2.70"	<b>WHITE</b> , Beautiful red ground color
Snow Giant		July 31-August 8	2.98"	<b>WHITE</b> , Attractive Large fruit
August Lady	O'Henry	August 3-9	2.92"	Deep red color, good size, some suture bulging
CVN-4		August 3-11	2.80"	Good taste/juice/sweetness, slight suture bulge possible
SC82035-13-48		August 8-19	3.04"	Attractive red/orange ground color, good taste
Big Red		August 22-29	3.27"	Big fruit, nice looking flesh, good juice/sweetness
September Sun		August 22-Sept. 5	3.10"	Good size and color
Autumnprince		September 7-10	2.80"	Good taste and sweetness

Table 3:

2003 Watsonia Farms 2003 Top Performers					
Line	Ripe	Set	Size	Red	Notes
Springprince	27-May	6	2.29	6	attractive, taste O.K.
Sunbrite	2-Jun	6	2.43	5.5	Few splits, nice color, nice flesh, tasty
Rubyprince	10-Jun	6	2.49	6	Beautiful, nice texture, good sugar/acid balance
GaLa	17-Jun	6	2.8	6	Some pigment in flesh, nice ground color, tasty
Carymac	23-Jun	6	2.92	5.8	Prominent suture, tasty, large
Blazeprince	30-Jun	6	2.5	6	More thinning needed, tasty, some leaf spot and scab
Bounty	7-Jul	3	3.19	5.2	Large, some premature drop
BY87P994 (Scarletprince)	7-Jul	6	2.7	5.9	Winner, some scab, delicious, beautiful
BY88P2251	7-Jul	6	2.53	5.6	maybe early, scab, some sp., elongate, good taste spic
BY88P3858	7-Jul	6	2.84	5.7	Very attractive, mellow taste, some suture bulge
BY89P2201	7-Jul	6	2.62	5.6	Nice flesh color, tasty, some pigment in flesh
BY93P3427 (Julyprince)	7-Jul	6	2.64	5.8	Very attractive, tasty, some pigment in flesh
Fireprince	7-Jul	6	2.6	5.8	Some pigment in flesh, some suture bulge, tasty
Redglobe	7-Jul	6	2.75	5.4	Nice flesh color, good taste, some splits
BY87P580	15-Jul	6	2.34	5.9	Beautiful but small, needs more thin, tasty
Contender	15-Jul	6	2.9	5.6	Nice flesh, tasty, some pit bleed into flesh
BY89P4146	21-Jul	5	2.85	5.6	Some pit bleed into flesh, tasty
BY95P3911	21-Jul	6	2.65	5.9	scab, small, some pit bleeding into fl, subt, tasty
Cresthaven	21-Jul	6	2.93	5.4	Nice flesh color, tasty, some pit bleed into flesh
BY96P2634	28-Jul	6	3	5.6	Large, nice flesh, mellow taste
Jefferson	28-Jul	6	2.97	5.4	Some suture bulge, very nice taste, minor pit bleed
BY96P3068	4-Aug	6	2.83	5.7	Very pretty fruit, tasty, nice background
Flameprince	11-Aug	6	2.82	5.8	Very tasty, some scab
Big Red	18-Aug	4	3.12	5	Tasty, some pit bleed, needs more red, suture bulge

Table 4:

Cash Farms 2003 Top Performers					
Line	Ripe	Set	Size	Red	Notes
Rubyprince	17-Jun	5	2.83	6	Beautiful fruit, good set, great size/shape/color, very good taste
Sureprince	17-Jun	5	2.78	5.5	some splits, nice shape, yellow ground color, good taste/flesh color
BY93P4318	23-Jun	4	2.79	5.5	Winner, nice color, sweet w/min acidity, beautiful
BY96P2591	30-Jun	4	2.59	5.7	nice shape, streaked red blush, very taste, light crop on some trees
Blazeprince	30-Jun	5	2.52	5.8	early eval, nice fruit, good sug/acid,
BY93P3538	8-Jul	5	3.1	5.9	Winner, some pigment in flesh, delicious
Fireprince	8-Jul	5	3.24	5.8	some splits, huge, good taste
BY89P2201	15-Jul	5	2.99	5.8	Winner, very attractive flesh, some w/prom sut, delicious
BY93P3427 (Julyprince)	15-Jul	6	2.92	5.7	Winner, very pretty, prom sut on some, very good taste
Redglobe	15-Jul	5	3.01	5.4	attractive, tasty
Winblo	15-Jul	5	2.89	5.7	some splits, delicious
BY87P994 (Scarletprince)	15-Jul	6	2.92	5.9	Winner, nice flesh, some pit bleed, good taste
Contender	15-Jul	6	2.89	5.5	maybe early eval, delicious
BY96P6033	15-Jul	6	2.82	5.8	very nice blush, pretty flesh, delicious
BY87P254	28-Jul	5	2.95	5.9	Winner, beautiful, some pit bleed in flesh, delicious
BY96P2634	4-Aug	4	3.12	5.6	light set, very good taste
BY96P2631	4-Aug	5	3.22	5.8	Winner, delicious, beautiful
Jefferson	4-Aug	5	3	5.6	some w/prom suture, good taste
BY84P2941	4-Aug	6	3.06	5.7	good taste
BY92P2597	4-Aug	6	2.79	5.5	good taste
O'Henry	4-Aug	5	2.81	5.9	good taste
Big Red	25-Aug	5	3.2	5.5	Needs more red, some prom sut, light scab, great taste

# Weed Science Update

## Post-emergence Weed Control in Peach Orchards

*Wayne Mitchem,  
North Carolina State University*

As summer progresses, the need for post-emergence weed control will increase. Research conducted a few years ago indicates that weeds need to be controlled to within 4 weeks of peach harvest for maximum fruit size and marketable fruit yield (Figure 1). Depending on weather, weed populations, and rainfall, it is likely that you will have some blocks that could benefit from a post-emergence herbicide application.

## Post-emergence Control of Summer Annual Weeds

In orchards where pre-emergence control breaks down, allowing summer annual weeds to become competitive, Gramoxone Max is (and has been) the preferred option for many growers. By the time you have break through of summer annual weeds, it should be beyond the time frame that glyphosate can be safely applied in the orchard. Gramoxone Max is effective on most annual weeds; however, application must be timely in order to insure good coverage and control. Ideally, annual weeds should be treated with Gramoxone Max when they are 2 to 4" tall. In some areas, horseweed can be a problem during the summer, and Gramoxone Max will not control this species effectively. Usually, regrowth occurs after application. If that weed is a key species in a production site, one may want to consider Stinger. Stinger, although more expensive, is very effective on horseweed – without tree injury issues that can be a concern with glyphosate in the summer.

Last year, annual grasses were more problematic than usual. This was largely due to the wet, cloudy weather conditions during late spring and into summer. Annual grasses can often become a problem earlier than broadleaf weeds if simazine or diuron (Karmex) was applied as the lone pre-emergence herbicide. Poast is very effective on annual grass weeds, however it does not provide any control of annual broadleaf weed species (Figures 2 and 3). In some situations, it can be more effective on grass weeds than Gramoxone Max. Annual grasses can regrow after a Gramoxone Max application.

## Perennial Grass Control

Regardless of the pre-emergence herbicide program you chose, bermudagrass and johnsongrass are not controlled with pre-emergence herbicides. Both are capable of reducing tree growth and can cause significant reductions in fruit size and yield. Fusilade, Poast, and Select control bermudagrass and johnsongrass. All three herbicides may be used in newly planted orchards, however Select can not be applied within 1 year of harvest. Both Fusilade and Poast are registered for use in bearing orchards. None of these herbicides control broadleaf weeds, or nutsedge (nutgrass).

Perennial grasses are controlled with timely, sequential applications to actively growing weeds. Weeds should be the appropriate size or growth stage (refer to Table 5 for maximum size to make initial application). Treating weeds at an inappropriate time (wrong size or growth stage) will result in less than desirable herbicide performance. It is critical that a

second application be made when grass regrowth occurs after the initial application. One commonly asked question is “how long should I wait after the first application to apply the second application”. The interval between applications will depend on weather conditions at application time and the period following it. Generally, the second application is applied 3 to 5 weeks after the initial application. However, DO NOT make the second application prior to regrowth. Doing so will not allow for herbicide uptake and therefore it will be ineffective. Adding crop oil concentrate to the spray solution will be necessary as well. For more detailed information on rates, crop oil, and weed size at application time, refer to the table below and manufacturer labels. Remember to read and follow all directions on herbicide labels and accurately calibrate herbicide application equipment ahead of each application.

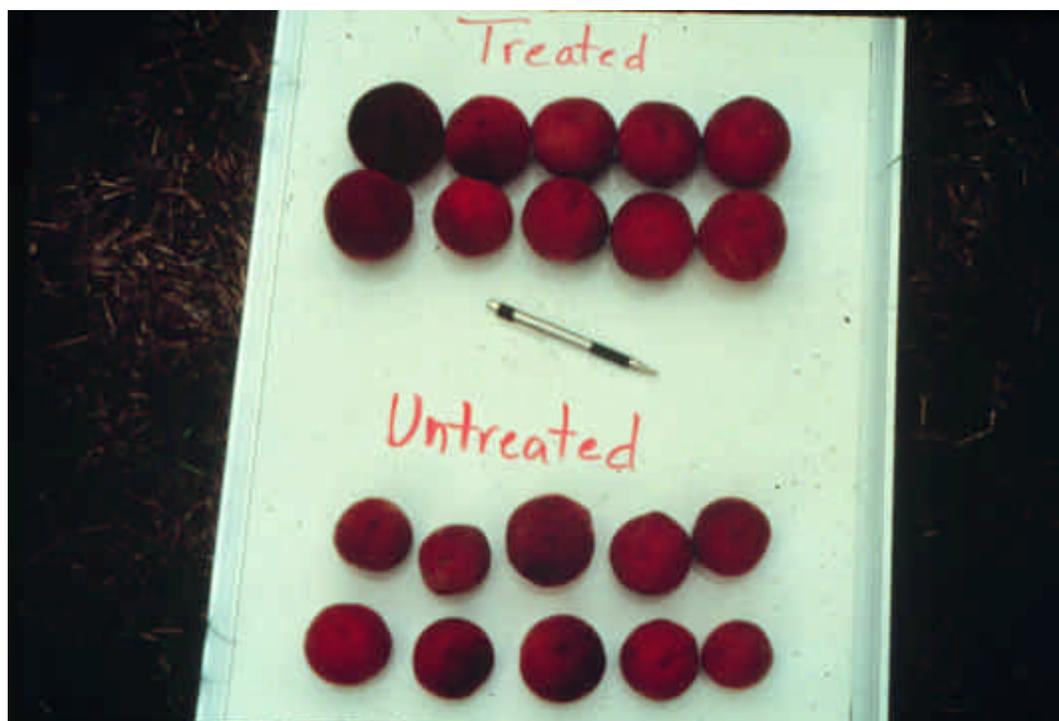


Figure 1. Difference in fruit size following treatment with herbicides versus allowing uninterrupted weed growth.

Table 5. Suggested herbicide rates for johnsongrass and bermudagrass control.

<u>Herbicide*</u>	<u>Rate**</u>	<u>Johnsongrass Height</u>	<u>Bermudagrass Stolon Length</u>
Poast	1.5 followed by 1.0 pt	10"	6"
Fusilade	1.5 followed by 1.0 pt	18"	8"
Select	1.0 followed by 0.5 pt 1.0 followed by 1.0 pt	24"	6"

\* Add crop oil concentrate at 1% v/v, refer to product label for details.

\*\* Rates suggested for heavy weed pressure. Lower rates may be used where weed pressure is mild. See label for details.



Figure 2. Poast is very effective on annual grass weeds, however it does not provide any control of annual broadleaf weed species.



Figure 3. Untreated area for comparison with Poast application.

# Plant Pathology Update

## Powdery Mildew of Peach in the Southeast

**Phil Brannen**  
*University of Georgia*



Powdery mildew of peach can be caused by two fungal species, the rose mildew (*Sphaerotheca pannosa*) or the apple mildew (*Podosphaera leucotricha*). The latter organism causes the rusty spot disease which is more prevalent in the northeast or mountain areas where apples are grown. The rose species predominates in most areas of Georgia and South Carolina, and this is the likely culprit this year. Symptoms are gray to white circular spots (Figure 4). Why are we seeing so much of this disease in 2004, and what does it mean relative to harvest? So far, conditions have generally been ideal for producing disease-free fruit (dry), but powdery mildew actually does pretty well under low moisture conditions, especially when combined with low to moderate temperatures. Powdery mildew infects and grows best under cool (66 to 72°F) and relatively high humidity (43-100% RH) conditions. Bottom line – this has been an ideal year for powdery mildew infection in much of the Southeast.

Young fruit, particularly at the shuck-split stage and shortly thereafter, are susceptible to infection, though fruit can be infected through pit-hardening. The fungus overwinters on inner bud scales, and initial infections occur on leaves as they emerge. Therefore, mildew fungicides would be required at the shuck-split timeframe and at least 2-3 applications following.

We do not generally apply fungicides for control of powdery mildew, since it is such a rare event, and even when it is observed, it is observed only sporadically. Neither chlorothalonil (i.e. Bravo) or strobilurins (Abound or Flint) products, traditionally used during the petal fall to shuck split timeframe for control of scab, are effective against powdery mildew. Sulfur is actually pretty effective, but it is generally less efficacious for scab control, so we recommend Bravo over sulfur for the petal fall/shuck-split application(s) (note that we currently recommend that strobilurins only be used for preharvest brown rot control – an attempt to prevent brown rot resistance development). Nova (myclobutanil) is very effective, and if powdery mildew were a consistent issue, we would recommend its use (as with the strobilurins, we recommend that DMI fungicides, such as Nova, be reserved for preharvest brown rot applications – again for brown rot resistance management). Varietal differences are observed, but we do not select southern varieties based on powdery mildew susceptibility, since it is rarely a problem.

Since it is difficult to accurately predict when powdery mildew would be a problem, we do nothing for its control, and this generally works. However, if all the cosmic forces come together, the damage can be somewhat problematic. What do we do now?

The good news is that the sulfur applications, which most producers apply for cover-spray scab control, will help to prevent further spread of the disease, so secondary infections are generally not observed. A percentage of infected fruit can be removed in the thinning operation, but it is difficult to select powdery-mildew infected fruit for thinning. Of those fruit which remain, some may develop scabby surfaces (rarely necrotic). However, experienced producers and researchers have often observed that the fruit infections are visually removed as the fruit ripens from green to red – especially smaller spots such as we have observed this year. We are hopeful that this will be the case in those locations/varieties which have shown sporadic powdery mildew infections/symptoms this year. Otherwise, mildewed fruit will have to be discarded or downgraded as it goes through the packing line. Even in a great year, there is always something!



Figure 4. Powdery mildew symptoms (white to tan spots) on young peach fruit in 2004 (middle Georgia sites).

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### **PUTTING KNOWLEDGE TO WORK**

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