



Southeastern Regional Peach Newsletter

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In this issue...

Editor's Note

Focal Points

Plant Pathology Updates

Horticulture Updates

Entomology Updates

Weed Science Updates

Calendar Dates

Editors Note

As most producers, researchers, and industry partners are aware, peach production information does not limit itself to a state line. It really never has been limited, but now all of us are openly working on a regional basis. We have to all work together to establish and promote the best information which is available at any given time. New threats, such as plum pox and the potential for bio-terrorism, make us more aware of our dependence on our neighbors within a region. This newsletter is another step in a logical process of formally recognizing our regional emphasis and needs. I hope each reader will enjoy the content – finding useful and timely information. Please let myself and the other assistant editors know if you have any suggestions or comments concerning the content of this newsletter. This newsletter will always be a “work in progress,” and any suggestions will be valued. Godspeed to each of you as you prepare for a new peach season.

Phillip M. Brannen
Editor

Focal Points – New Information for the Peach Industry

* At the recent Plum Pox Virus Meeting in Canada the following information was presented. **Under lab conditions, PPV may be transmitted from peach fruit by aphids.** Most

aphids, to include the green peach aphid, do feed on the peach fruit. Though aphids will not survive on fruit and



reproduce, they will feed. Peach skin is high in virus titer. From fruit, aphids can transmit the Pennsylvania D strain of the virus to peach seedlings and pea. Though transmission efficiency is low, this information leads credence to the fact that infected cull piles could provide a source of viral inoculum, and resident aphids could then provide a means of transmission to new orchards. Stone fruit imports also come into question as potential virus sources.

* The Southeastern Virus Testing Program for budwood is “up and running.” This program will now be supported financially by growers and the nursery industry. **When buying new seedlings, a producer assessment of 5 cents per stone fruit tree will be charged in 2002.** Cooperating nurseries (Hollydale,

Vaughn, and Cumberland Valley Nurseries) have agreed to contribute 1% of the ir sales to this program. Commercial growers are highly encouraged to buy virus-tested trees.

Plant Pathology Updates

Results of fungicide tests for control of peach scab in South Carolina

Guido Schnabel and Curt Powell, Clemson University

Most peach scab infections occur during the 6 week period after shuck split (SS) and this period is critical for fungicide control. Captan 50W, Bravo Weather Stik 6F, and higher rates of Sulfur are effective for scab control. Abound 2.08F is a fairly new fungicide registered for scab control. The recommended rates for Abound 2.08F were recently increased to 11-15.4 fl.oz./acre. A study was initiated last spring to test whether Abound 2.08F at 13 fl.oz. per acre would be as effective as Bravo Weather Stik 6F at recommended rates -- at the critical SS spray. In addition we wanted to test the efficacy of a reduced spray program under severe scab pressure.

Spray trials were performed at the Musser Fruit Research Farm in 2001 on 6-year old Cresthaven peaches. Depending upon the treatment, fungicides were applied Mar 23 at 50% petal fall (PF), Apr 6 at 80% shuck split, Apr 12 at 80% shuck fall (SF), Apr 19 at first cover (1C), Apr 26 at second cover (2C), May 3 at third cover (3C), May 10 at fourth cover (4C), May 17 at fifth cover (5C), May 24 at sixth cover (6C), May 31 at seventh cover (7C), and Jun 7 at eighth cover (8C). Disease pressure was extremely high (98.7 %) in the Cresthaven block, due to no previous exposure of this test block to scab controlling fungicides.

Our results show that a set of five sprays, consisting of a combination of Bravo Weather Stik 6F, Abound 2.08F and Captan 50W, were just as effective as a series of 11 sprays of Microthiol Special 80 WPS ([Table 1](#)). In previous reports, the PF spray was considered to have no effect on scab control. We included the PF sprays because we wanted to closely mimic grower standards, and many growers add a fungicide to their PF insecticide applications. We don't know if our PF spray impacted scab or not. Using Bravo Weather Stik 6 F at PF, Bravo Weather Stik 6F or Abound 2.08F at SS, followed by Captan 50W in three cover sprays, resulted in excellent scab control. Interestingly, the application of Bravo Weather Stik 6F at SF did not increase scab control. Microthiol Special 80WPS applied six times at PF, SS, SF, 1C, 3C, and 5C was significantly weaker in controlling scab. However, of the 15% of peaches which were diseased, 10% had less than five spots per fruit, and these should have been suitable for road-side marketing.

In summary, our results show that Bravo Weather Stik 6F at full rate and Abound 2.08F at 13 fl.oz./acre performed equally well at SS. A total of 5 fungicide sprays, consisting of a combination of Bravo Weather Stik 6F, Abound 2.08F and Captan 50W resulted in excellent scab control -- even under very heavy scab pressure. Microthiol Special 80WPS, applied at the maximum rate and applied weekly over a period of 11 weeks, resulted in full control of scab; whereas six applications during the critical scab period resulted in 5% unmarketable fruit and 10% fruit with a few spots.

Update on peach diseases in 2001 and relationship to 2002

*Phillip M. Brannen
University of Georgia*

As all Georgia peach producers are aware, both disease losses and control-measure costs were high in 2001. There are several

reasons for this, but the primary reasons are rainfall or humidity. This was a year in which rainfall was sufficient to drive major diseases of peach.

Bacterial Spot: Timing is Everything!

The issues started with bloom. Bloom came early for many varieties this year, and this made it difficult for many producers to apply copper sprays to varieties which were susceptible to bacterial spot. When combined with early rainfall and warm temperatures, the lack of protection prior to and during bloom likely provided the inoculum base required for a severe bacterial spot year. The Clemson Bacterial Spot Model indicated the need for a copper spray well ahead of bloom. **Of producers utilizing the bacterial spot model,**



bacterial spot was minimal to nonexistent for those who applied copper ahead of bloom. For those who applied copper after bloom, bacterial spot was observed on leaves and fruit within 2-3 weeks following bloom, and damage resulted in losses of roughly 30%. The bacterial spot model did help us to predict the need for a pre-bloom spray, and the subsequent damage indicated that this was a needed application. After reviewing the bacterial spot program for two years, it appears to have value, but much more information is needed about bacterial spot. With adequate control through roughly 4-5 weeks after shuck split, sprays may be cut off - allowing for some leaf infection but little or no fruit infection. This thought still needs to be thoroughly researched, but this would allow

for less application costs if the concept is defended through research. Though the critical infection windows are petal fall (leaf infections) and shuck split (fruit infections), more information about sprays prior to and during bloom is needed. At this point, it is pretty clear that pre-bloom copper sprays are necessary for 2002 -- especially when the model calls for an application.

Brown Rot. The season was ideal for brown rot. Blossom blight, though not causing major damage, was very prevalent in many varieties - providing a more than ample source of inoculum for fruit infections. Blossom blight occurrence is related to temperature and duration of blossom wetness; 3 to 5 hours of blossom wetness is the minimum for infection to occur, and roughly 75°F is the ideal temperature for infection. Green fruit rot, the summer phase of brown rot was also prevalent, and this further exacerbated the problems observed later in the season.

Shifting early from sulfur-based programs to Captan or Abound® would have been useful in 2001. With the amount of rainfall and disease pressure observed, alternate-row-middle applications were ill-advised. Reduction of tractor speeds to 2.5 mph will improve coverage, thereby helping control.

Whether using two or three brown rot pre-harvest sprays, Abound (high rate) is recommended for the first brown rot pre-harvest spray. Use of Abound for this first spray will act as a good resistance-management strategy. If using Abound for cover sprays as well, do not make more than two consecutive applications of Abound. To have achieved adequate control in 2001, pre-harvest fungicides may have been needed at 21, 14, and 1-7 days before harvest, depending on the fungicides utilized.

Use of Scholar® for post-harvest control of disease is very important (according to Syngenta, Scholar should be available in 2002 with a full registration -- no Section 18 required). There is no true resistance to

brown rot, and in a year such as 2001, no variety could have been safely stored without a post-harvest treatment. Scholar also helps to control Rhizopus rot; though not always encountered, this rot can be very severe as well. In one of our trials, Rhizopus rot was very severe.

Due to the high incidence of brown rot observed in 2001, there will be plenty of inoculum available in 2002; and with adequate rainfall in 2002, brown rot will be abundant -- guaranteed. Orchard sanitation is particularly important for next year. Numerous mummies will be left in the



field this year - on the ground and on trees. The initial sources of inoculum for next year will be the mummified fruit and cankers. Mummies should be removed from the trees during the dormant period. Following fruit infection, the brown rot organism can work its way into the stems through the peduncle, forming cankers. In addition, since blossom blight was prevalent in some varieties this year, cankers were formed during this stage of infection as well. During dormant tree training, dead wood and cankered shoots should also be removed. It is important to flail mow or carry brown rot mummies and pruning debris from the orchard. If carried from the orchard, debris and mummies should be destroyed by burning.

2001 Brown Rot Trials Synopsis. In collaboration, the UGA and USDA (Chuck Reilly and Mike Hotchkiss), obtained excellent brown rot data on some new and existing materials ([Table 2](#)). All treatments

were generally comparable to the chemical standard, two late-season applications of Orbit® (propiconazole). The **generic propiconazole, GX70001 from Griffin Corp., was equivalent to Orbit in efficacy. Elevate plus Captan was likewise equivalent to Orbit**, but it is an imperative that these compounds be applied together; whether additive or synergistic, the combination of Elevate plus Captan makes for a good treatment. The costs of the combination may make it a difficult addition for the peach market to swallow. In addition, **there may be issues with “inking” when using Captan for late-season brown rot control.** BAS 516, a combination of two nondisclosed BASF fungicides in one product, also provided control which was equivalent to and sometimes better than Orbit. Though tested with only one variety, the use of Abound (1st application) and Orbit (2nd application) was equivalent to two applications of Orbit. This is consistent with results observed elsewhere, and it indicates that Abound can be effectively utilized as a resistance-management tool in Georgia.

In conclusion, fungicides tested in 2001 provided control which was statistically equivalent to the Orbit standard -- without exception. Two of the fungicidal treatments, Elevate plus Captan and BAS 516, could possibly provide additional resistance management tools -- especially as related to DMI fungicides. In light of the poor performance of all fungicides against Rhizopus rot, more broadly efficacious fungicides are needed. In a year such as 2001, the need for greater efficacy against brown rot was likewise apparent.

Scab. Scab damage was greater than tolerable in 2001. It is unclear whether this was related to poor coverage or wet weather conditions (i.e. wash-off and poor spray timing as related to



rainfall). It is imperative that full-coverage scab sprays (not alternate-row middle) be applied through the second and third cover sprays. During wet periods, the higher rate of sulfur should be utilized. If wetness is sufficient, use Captan for both brown rot control and scab control; Auburn University studies have shown that Captan gives substantially better control of scab than sulfur. **An additional application of Bravo may be available in Georgia this coming year (24C label), and this may have value.**

Plum Pox Virus. Including budwood sources, approximately 20,000 samples were taken from Georgia in 2001 for PPV testing. All samples were negative for PPV. However, a high incidence of Prunus Necrotic Ringspot Virus in the budwood sampling program indicates the absolute need for this program. Without this program, viruses will continue to spread and propagate in our peach orchards, yearly production will be lower, and life-expectancy for orchards will be decreased.

Nematode Treatment with Telone II and Preplant Interval. As a reminder, a substantial period of time is required between fumigation with Telone II and transplanting of deep-rooted trees. **Death of trees has been noted when enough time was not allowed between application and transplanting.** Wet or cold soils, especially clay soils, will keep the fumigant from dissipating, so an even longer period of time may be required than suggested. **Plan on a minimum of 6 to 8 weeks for dissipation.** In wet, cold, or clay soils, follow the label recommendation for chisel-plowing the ground prior to transplanting trees - further insuring that the Telone has dissipated. Producers may want to consider an earlier application date in the fall. **Based on local experience, Telone II application no later than Thanksgiving is recommended.** The optimum soil temperature for adequate control is between 40°F and 80°F, so a later application may not be as effective, and it may not allow enough time for dissipation of the Telone. Do not plant if the odor of

Telone II is present within the fumigation zone.

Entomology Updates

Entomology Issues for the coming year

*Dan Horton
University of Georgia*

Borers . Optimal timing of Lorsban trunk sprays for borers in middle Georgia typically occurs from early August through the end of September. Control diminishes progressively as young borers get large enough to survive treatment, but growers should finish borer sprays even if it takes until mid-October. Handgun application of borer sprays is tedious but worth the effort. A single, properly applied Lorsban borer spray is stunningly effective; standing out among all other peach insect controls as perhaps the only remaining 5-star treatment. Lorsban 4E at the 3 pints/100 gallons rate provides very good borer control in most orchards; however, orchards that have an active borer infestation should receive the 6 pints/100 gallons rate. Endosulfan [Thiodan or Phaser] and esfenvalerate [Asana] are also labeled for borer control, but they need to be applied twice owing to lower efficacy. Lorsban applied one time is typically better than two applications of Thiodan/Phaser or Asana.

Lorsban borer sprays also provide suppression of other pests. Plum curculio move into overwintering gradually, but they can be quite abundant feeding on vegetative buds until mid-October. **Lorsban trunk sprays reduce the number of plum curculio present in an orchard the following year. Lorsban trunk sprays also provide a degree of scale control.** White peach scale are more abundant on the trunk and crotch areas. San Jose scale are distributed more uniformly and seem to favor younger wood. Accordingly you can

expect to get more white peach scale control from Lorsban borer sprays.

Scale. It's increasingly clear that we are not experiencing a clearly evident fall crawler generation. This lessens the benefit of fall applied airblast scale applications targeting scale. Unfortunately, San Jose and white peach scale remain abundant in most orchards. Greg Hodges, Frank Funderburk, Johnny Whiddon, myself and others worked together this season on several scale projects. Greg found that the percent live scale or **scale survivorship was disturbingly high**. Live scale percentages in orchards receiving standard OP cover sprays ranged 60-65%. As all of you know from experience, this translates to a lot of scale. Lorsban borer sprays help control scale, but they are not enough. **Oil applications are essential**. In order to get over the entire farms without working every, good-weather Saturday after Christmas, growers are urged to begin sprays following the first cold weather after full leaf fall. Avoid oil application when temperature for two days before and after application are expected to go up to the high 80s and/or down to 40 F. Use 1.5-2% dormant oil for early sprays. In orchards with a lot of scale or in any orchard with scale on the fruit, consider two dormant oil applications. After full dormancy during consistently cool periods it is often beneficial to increase oil concentration to 2.5-3%. **Adequate coverage is imperative for oil applications. Volume should approach 100 gallons per acre.**

Herbicide Considerations

Update on herbicides for the coming year

*Wayne Mitchem,
North Carolina State*

Fall PRE Application. Applying fall preemergence herbicide is beneficial.

Controlling winter annual broadleaf weeds in the tree row reduces cat-facing insect populations.

Preemergence herbicides.

- aid in maintaining weed-free area under trees, maximizing the radiant heat benefit during spring freeze events
- delays the need for a spring preemergence herbicide
- aids summer weed management by extending residual weed control later in the season
- Simazine, Karmex, or Solicam are all good choices for a fall application. [Solicam and simazine provide excellent control of camphorweed in the event that weed is of particular concern in your area].

Winter Annual Broadleaf Weeds in the Tree Row. Assuming a preemergence herbicide is used in the tree row, there is still a need to control winter annual broadleaf weeds in the drive alley between the trees. 2,4-D is very effective on most winter annual broadleaf weeds. **2,4-D applications should be made about 6 weeks prior to bloom.** As mentioned above, this practice is part of an integrated approach to managing cat-facing insects using winter annual broadleaf weeds as alternate hosts.

Cutleaf Evening primrose Control Last spring several orchards had high populations of cutleaf evening primrose. In the fall cutleaf evening primrose emerges as a rosette, with a distinct white midvein in the leaf. Subsequent leaves develop deeply cut teeth or regular lobes. In the spring, basal stems develop that are prostrate to ascending with an erect tip. Cutleaf evening primrose produces a yellow flower. It is not controlled by glyphosate (Roundup UltraMax, Touchdown, etc.). Paraquat will cause leaf burn, but control is relatively poor. 2,4-D is very effective when applied to seedlings in the rosette stage. However applications to plants that have developed stems may not result in effective control.

Bramble Control. Brambles can be a problem in orchards and are not controlled with preemergence herbicides or spring treatments of glyphosate.. Spot treating with glyphosate in late summer effectively controls brambles the following year, unfortunately peach tree sensitivity to glyphosate is high from early summer until the trees are dormant. However **brambles can be effectively controlled with glyphosate after trees go dormant.** Late November and early December is an excellent time to spot treat brambles with glyphosate (1% solution). **However it is critical that peach trees are free of foliage and dormant.** Any contact with trees that are not dormant at this time could cause tree death.

Horticulture Updates

Horticulture issues

*Kathy Taylor,
University of Georgia*

Nutrition. Fertilization after September 15 is discouraged for Middle Georgia but trees in South Georgia may receive fertilization up to October 15. Up to one-half the annual fertilization can be applied in late summer/early fall.

Nutrient Imbalances. Nutrient deficiency or toxicity symptoms can be mistaken for a pathology problem. You may want to consult your agent prior to making an application to remediate an uncertain pathology problem to avoid a potential nutrient stress on your trees.

Orchard Floor. Be certain that the orchard floor is maintained weed free trunk to trunk late February to early May, during frost danger period, to promote radiant heat movement from soil into the canopy.

Irrigation Management. Use the winter months to repair irrigation systems. Run each irrigation zone separately and

troubleshoot for leaks that will rob your water pressure during the season. Flush lines and replace broken or plugged emitters.

Planting. In preparation for planting, sample soil for nutrient status, pH and nematodes. Ask for species determination for ring nematode. The optimum time for ring nematode sampling is February-April (but in the absence of a spring sample, September- October sampling will provide useful information if soil moisture is medium to high). September- October is optimum for root knot nematode assay. If any ring nematode, *Mesocriconema xenoplax*, or root knot nematode, *Meloidogyne incognita*, are present, fumigation with Telone II will be necessary. Phosphorus amendments and liming should be done at the time of field preparation in the fall.

Hydrocooler Chemistry. Use the winter to schedule time with your county agent to have your hydrocooler management program audited. We are finding that some adjustments should be made in each packing facility to prevent inking on fruit. If you are planning to use Captan in your spray program or if you have noted more inking, this is especially important.

Packing Facilities. Schedule time with your county agent to have your packing line analyzed with the instrumented sphere to determine location(s) of potential fruit damage. We can make some repairs or suggestions of repairs on the spot.

2001 Peach Variety Evaluations

*Dr. Desmond R. Layne and Duncan Cox,
Clemson University*

During the 2001 growing season, over 200 peach and nectarine varieties and advanced selections (both yellow and white-fleshed) were evaluated at the Musser Fruit Research Farm, Clemson University, Clemson, SC.

The earliest variety was harvested May 11 and the latest was September 13. This is part of a long-term project to determine suitability of new cultivars and advanced selections for SC, in particular. Many selections were from the breeding program of Dr. Dick Okie (USDA-ARS, Byron, GA). Some varieties may perform better or poorer in neighboring states depending on location, disease and insect pressure, chill hours received, etc.

For nearly every variety evaluated this year, fruit size was larger than in 2000. This was likely due to early flower thinning due to freezes in early March. Most trees had a good crop load and were thinned appropriately. All trees were irrigated throughout the growing season as necessary. It was also noted that nearly every variety was harvested commercial ripe 1 to 5 days earlier than in 2000.

Attached is a table ([Table 3](#)) identifying the cultivar or selection that performed well this year, the respective harvest season and a relevant note or two about each one. Standard, widely planted varieties may not be included in this list. That does not indicate that they are not recommended. Our current emphasis is to look at new and promising germplasm, primarily. However, at two grower sites in SC, we have advanced selections planted among industry standards for comparison purposes. Data from these trials will begin to be available in 2002. The SC Peach Council is thanked for financial support of this on-going project.

Variety images, evaluation tables and other relevant peach information can be found at my peach web site at:
http://www.clemson.edu/hort/peach/peach_home.htm

Calendar Dates of Importance

29 November; Annual South Georgia/North Florida Peach Update (Brooks County Extension Annex in Quitman, GA).

11-13 January; Southeastern Peach Convention (Savannah, GA).

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