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Special Reports

Rosette (Double blossom) of Blackberry

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Rosette is a severe disease of blackberries in the southeastern United States which often limits commercial production if it is not controlled. Caused by the fungus, *Cercosporella rubi*, rosette has a biennial disease cycle that matches the growth pattern of blackberries. Primocanes are infected in the spring or early summer, but disease symptoms are not evident until the following year when new growth begins on the fruiting canes. Most thorny, erect blackberry cultivars adapted to the area are very susceptible to rosette; however, many growers do not recognize this disease until it is wide-spread in their planting. Symptoms of rosette often go unnoticed in a new planting until about the fourth year when a large percentage of the plants suddenly display signs of infection as new growth emerges in the spring. Yield is drastically reduced on severely infected plants.

The rosette fungus produces spores on infected flowers at the same time pollen is being produced. These spores are dispersed by wind and insects, and subsequently, infect the young buds of primocanes. Infected primocanes grow normally the first year showing no external symptoms until the following spring. As the infected buds begin to develop, several to many branches may grow from each infected node instead of the single branch per node that is characteristic of healthy stems. Nodes or inflorescences are closer together than normal giving the plant a bunchy appearance. Young foliage of infected stems is a light green and later becomes yellowish-brown to bronze compared to the dark green foliage on healthy stems. Infected flowers have more pink, purple or red color compared to healthy flowers of the same variety and may have a ruffled or distorted appearance (hence the name "double blossom"). Little or no fruit is produced from infected flowers.

Rosette can be controlled through a combination of cultural practices and chemical treatments. **1) Plant resistant cultivars**. Most erect, thorny cultivars are very susceptible to rosette, but most thornless cultivars from the Arkansas breeding program are tolerant or resistant. Navaho and Arapaho develop little or no rosette at most locations. Where these cultivars have been infected, it took longer for symptoms to occur and disease severity was much less than that of other cultivars.

2) Eradicate wild blackberries. Wild blackberry plants in the southeast often are infected with rosette and are the initial source of infection in most fields. Wild blackberries should be removed from the immediate vicinity of cultivated blackberry fields. This eradication of the native wild host reduces the amount of natural inoculum in the area. Since the rosette fungus does not occur in the roots of blackberry plants, fields established from root cuttings should not become infected with rosette if there are no other blackberries with the disease nearby.

3) Prune out infected rosettes. Effective disease control can often be accomplished in new plantings by rigorously pruning out any rosetted stems in early spring before the infected buds open. In areas of low disease pressure, this may be the only control practice necessary. The fungus is not systemic within the blackberry plant so only the side stems showing disease symptoms have to be removed.

4) Apply fungicides. Spread of the rosette fungus from infected flowers to primocanes can be dramatically reduced if fungicides are applied at the correct time. Most rosette infections occur during bloom; therefore, fungicide applications must begin when infected flowers open and continue until petal fall. Infected flowers will continue to bloom during and after harvest, so it is important to continue fungicide applications as long as rosette infected flowers continue to bloom. Among the fungicides registered for use on blackberries, Abound®, Switch®, and Pristine®, are the most effective for rosette control. Since these fungicides have a zero -day pre-harvest interval, they can be applied during harvest. Abound and Pristine are both strobilurin class fungicides and no more than two applications of any fungicide in this class should be applied in sequence before alternating to a different class of compound, such as Switch, Elevate or Nova. The number of applications of each fungicide per season is limited. It is important to remember that fungicides will not stop symptom development on current year's fruiting canes. The goal of fungicide treatments is to prevent infection from occurring on primocanes. There is about a nine-month delay between fungicide application and any evidence of control. By maintaining a rigorous fungicide spray program, as outlined on Table 1, rosette infection should be minimal to none.

Bordeaux mixture may be substituted for pre-harvest fungicide sprays; but it should not be applied when the temperature is above 75^0 F because it may burn the foliage. Bordeaux mixture in the commercial pre-mixed formulations will have label restrictions that must be followed. Or the grower may prepare a 4-4-50 Bordeaux mixture as follows. (1) Dissolve 4 pounds hydrated lime (calcium hydroxide) in 5 gallons of water and stir to make a "milk of lime" suspension. (2) Dissolve 4 pounds of finely powdered bluestone (copper sulfate) in 30 gallons of water in spray tank. Keep tank agitator running, and (3) slowly add the "milk of lime" suspension to bluestone solution in the tank. (4) Fill the tank with water to 50 gallon mark. The Bordeaux mixture should be constantly agitated and should not remain in the tank for an extended period of time. It is very corrosive and may damage the spray nozzles.

5) Mow severely infected plantings. Heavily infected blackberry plants should be pruned to about a foot above the ground (usually by mowing) immediately after harvest. In fields where the disease is so severe that harvest is not feasible, the plants may be mowed before harvest. Remove all diseased plant material from the field, and fertilize with a complete fertilizer. Continue irrigation to ensure good re-growth, and begin a fungicide spray program. Mowing the entire planting to the ground is only necessary when the infection is wide-spread. Yield from mowed fields will be drastically reduced the following year. Except along the Gulf Coast where the growing season is longest, most cultivars should not be mowed more than once every three or so years.

Table 1. Spray Program for Control of Rosette of Blackberry.

Spray No.	Time of Application	Fungicide Recommended[1]
1	When infected flowers open	Abound (Strobilurin class)
2	10 to 14 days later	Switch
3	10 to 14 days later	Pristine (Strobilurin class)
4	10 to 14 days later	Abound (Strobilurin class)
6	10 to 14 days later	Switch
	* * * * * Harvest Begins * * * *	
7	10 to 14 days later	Pristine (Strobilurin class)
8	10 to 14 days later	Elevate (for gray mold control)
9	10 to 14 days later	Switch
	* * * * Harvest Ends * * * *	
10	10 to 14 days later	Nova (for leaf and cane rust)
11	10 to 14 days later	Pristine[2] (Strobilurin class)
12	10 to 14 days later	Nova (for leaf and cane rust)

[1]All fungicides should be applied to the point of runoff.

[2]Fungcide applications can be discontinued when there are no more infected flowers blooming in the field.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS.

PESTICIDE LABELS ARE CONSTANTLY BEING REVISED; THEREFORE,

BE SURE BLACKBERRIES ARE LISTED ON THE LABEL BEFORE USE.

Predicting Fruit Development Period of Rabbiteye Blueberry Cultivars Using Growing Degree Days

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The time of flowering and ripening are important considerations for determining usefulness and adaptability of blueberry (*Vaccinium sp.*) cultivars to various regions. While rabbiteye blueberry (*V. ashei* Reade) flowering time depends greatly on chill hours and temperature (NeSmith and Bridges, 1992), less is known about time to ripening. Typically blueberry cultivars are described as having an average number of days from flowering to ripening, yet, the variability can be tremendous (Bailey, 1947). The ability to more accurately estimate fruit development period (FDP), or the time from flowering to ripening, would be an important tool for marketing large volumes of fruit.

The rate and duration of plant development depends on temperature and time. A common means of normalizing temperature effects on development is the use of growing degree days (GDD) or heat units (Ritchie and NeSmith, 1991). The use of GDD instead of real or calendar time tends to produce experimental results that are transferable and comparable, even though the results may be from specific locations and environments. Research has examined using GDD for predicting FDP to a limited degree for some highbush blueberries, yet, little has been done in the area of rabbiteye cultivars (Carlson and Hancock, 1991; Mainland, 2002). The objective of this research was to evaluate fruit development period for several rabbiteye blueberry cultivars grown in diverse locations as a function of real time and GDD.

Material and Methods. The rabbiteye blueberries used in this study were grown in selection test blocks at two locations in Georgia. The Alapaha, Ga. location is in the Atlantic Coastal Flatwoods region of the state, which is the primary blueberry production region. In general plants utilized from the site were mature bushes (> 8 years old) grown in suitable rabbiteye soil without irrigation. The second location was at Griffin, Ga., which is in the Piedmont region of the state. Plants at this location were established in 1998 in a marginal rabbiteye blueberry soil that was amended with pine bark mulch and had drip irrigation. Cultivars evaluated at each site included ‘Alapaha’, ‘Austin’, ‘Brightwell’, ‘Climax’, ‘Premier’, ‘Ochlockonee’, and ‘Tifblue’. Of these, ‘Alapaha’, ‘Austin’, and ‘Ochlockonee’ are new cultivar releases, and the others are older cultivars of considerable importance.

Flowering and ripening dates were recorded for plots of plants at the Alapaha location from 1998 to 2003, and at the Griffin location from 2000 to 2003. In order to determine dates, an overall estimation of the time of 50% flowering and ripening was made for an entire plot (3 to 5 plants per plot) rather than for individual bushes or flower clusters. Such an estimate was used because it was most likely the kind of estimate growers would use.

Weather data was collected via the Georgia Automated Environmental Monitoring Network (http://www.georgiaweather.net/) for stations nearest the sites. These data were used to determine degree days (GDD) for each day from flowering to ripening using the equation:

$$GDD = [(T_{max} + T_{min})/2] – T_{base}$$

where, T_{max} = daily maximum temperature, T_{min} = daily minimum temperature, and T_{base} = base temperature of 45 F (NeSmith and Bridges, 1992). One constraint used in calculations was if T_{min} was less than T_{base}, then it was set equal to T_{base}. The same GDD formula was used for all cultivars at both locations.

Data analyses involved calculating means and coefficients of variation (c.v.) for the FDP of each cultivar in days and GDD. Regressions of predicted vs. observed values were generated for FDP using both days and GDD. Mean absolute difference (MAD) and maximum difference form the mean (DMAX) between predicted and observed data were also determined.

Results and Discussion. Chill hours (< 45 F) and flowering dates for the different cultivars at the two locations are listed in Table 1. There were considerable differences in bloom dates of cultivars at a given site from year to year. Some of this could be related to the variation in chill hours received. When a low number of chill hours occurred during a season, generally time to flowering was prolonged. However, all of the variation in time to flowering could not be explained by chill hours received. NeSmith and Bridges (1992) demonstrated that chill hours and heat units after dormancy requirements are met both control time of flowering.

Dates of fruit ripening are presented in Table 2. As with time of flowering, there was variation in date of ripening for a particular cultivar at a location, but the degree of variability was less. Also, the time of ripening seemed less related to chill hours received. For example, at the Alapaha site, the cultivar Brightwell ripened on June 11 in each of three years (2000, 2001, and 2002), while chill hours during those years ranged from 574 to 916. The results suggest that factors other than chill hours govern ripening time.

Fruit development period (FDP), calculated as days from flowering to ripening, is depicted for all cultivars at both test sites in Table 3. When comparing cultivars, average FDP ranged from a low of 75.3 days for 'Alapaha' to a high of 93.9 days for 'Ochlockonee'. FDP varied considerably for individual cultivars when days were used. For example 'Climax' FDP ranged from a low of 61 days to a high of 97 days. The shortened FDP for 'Alapaha' is one of the advantages of this cultivar over 'Climax' when these are grown in areas such as south Georgia that receive 400 to 800 chill hours a year, yet, have predisposition to freeze damage due to warming spells. In that environment, 'Alapaha' flowers several days after 'Climax', yet ripens with it.

The use of growing degree days (GDD) to calculate FDP resulted in less variability for a cultivar (Table 3). Also, the data from the different locations were more comparable, suggesting that indeed temperatures during the FDP are important for calculating the time interval. The stability in predicting FDP using GDD can be seen more clearly in the analyses in Table 4. The mean absolute difference (MAD) when using GDD was lower for all cultivars. In fact, the average MAD for the FDP across cultivars was lowered from 5.9 days to 3.1 days when using GDD. Likewise, the maximum difference from the mean (DMAX) was less when using GDD. The average DMAX across cultivars was 13.6 days when using real time, and it was 6.1 days when using GDD. The influence of GDD on predicting dates of ripening by utilizing the FDP are graphically portrayed in Figure 1.

The data indicate that GDD are valuable in determining the time from flowering to ripening more accurately. Also, the single GDD model worked well across the cultivars, although, each cultivar had its own GDD requirement. An advantage of the single, simple model used is that the data for temperatures (daily minimum and maximums) are readily available from most weather stations. Hence, growers could keep up with heat units accumulated. Also, the Georgia Automated Environmental Monitoring Network (http://www.georgiaweather.net/) calculates degree days for users from its weather stations after the input of selected dates and base temperature.

The additional variation in the data of time from bloom to ripening (not accounted for by GDD) could be associated with several factors. For example, ripening can be slowed by heavy fruit set or poor leaf bud development (NeSmith and Krewer, 1999; NeSmith, 2002; Williamson et al., 2001). Also, if cross pollination is abundant, berry ripening can be at a faster rate (Brevis and NeSmith, 2004). Thus, these additional factors need to be accounted for in order to more completely assess variability in FDP.

In summary, FDP in rabbiteye blueberry varies considerably among cultivars and over years. Much of the variability in FDP could be accounted for by using a simple GDD model. Thus, cultivars can be categorized based on their GDD requirement for the FDP. Information on FDP and GDD can be used to more reliably estimate days to ripening for rabbiteye blueberries. Also, the information on cultivars can be used to determine environments suitable for producing rabbiteye blueberries to achieve desired market windows.

Table 1. Chill hours and flowering dates for several rabbiteye blueberry cultivars grown at two locations in Georgia during 1998 thru 2003. Dates are estimates of 50% flowering.

Year	Chill hours [Z/]	Cultivar						
		Alapaha	**Austin**	**Brightwell**	**Climax**	**Premier**	**Ochlockonee**	**Tifblue**
		---------------------------- Dates of 50% flowering ------------------------------						
		Alapaha, Ga. site						
1998	620	Mar. 15	Mar. 15	Mar. 26	Mar. 4	Mar. 8	Mar. 29	Mar. 28
1999	363	Mar. 23	Mar. 24	Mar. 29	Mar. 16	Mar. 28	April 4	Mar. 30
2000	697	Mar. 17	Mar. 17	Mar. 18	Mar. 8	Mar. 13	Mar. 24	Mar. 20
2001	916	Mar. 8	Mar. 6	Mar. 5	Mar. 1	Mar. 3	Mar. 14	Mar. 11
2002	574	Mar. 25	Mar. 25	Mar. 25	Mar. 8	---	Mar. 30	Mar. 26
2003	906	---	---	Mar. 21	Mar. 14	---	Mar. 24	Mar. 21
		Griffin, Ga. site						
2000	1120	---	Mar. 24	Mar. 19	Mar. 11	Mar. 22	---	Mar. 23
2001	1597	---	Apr. 7	Apr. 2	Mar. 23	Mar. 30	---	Apr. 2
2003	1387	Mar. 29	---	Mar. 29	Mar. 26	---	Apr. 7	Mar. 29

[Z/] Chill hours are hours below 45 F for the period from October 1 thru February 15.

Table 2. Ripening dates for several rabbiteye blueberry cultivars grown at two locations in Georgia during 1998 thru 2003. Dates are estimates of 50% ripe fruit.

Year	Cultivar						
	Alapaha	**Austin**	**Brightwell**	**Climax**	**Premier**	**Ochlockonee**	**Tifblue**
	Alapaha, Ga. site						
1998	June 5	June 6	June 20	June 2	June 4	July 1	June 26
1999	June 7	June 8	June 17	June 2	June 2	June 26	June 22
2000	May 31	June 7	June 11	May 31	June 2	June 30	June 18
2001	May 25	June 6	June 11	May 30	May 31	June 30	June 23
2002	May 25	June 1	June 11	May 25		June 22	June 19
2003	---	---	June 9	May 31	---	June 28	June 17
	Griffin, Ga. site						
2000	---	June 21	June 25	June 16	June 21	---	June 26
2001	---	June 28	July 1	June 26	June 17	---	July 8
2003	June 17	---	June 29	June 21	---	July 10	July 4

Table 3. Fruit development period expressed as days and growing degree days (GDD) from 50% flowering to 50% ripening for several rabbiteye blueberry cultivars grown at two locations in Georgia during 1998 thru 2003.

Cultivar	Days from flowering to ripening		Growing degree days from flowering to ripening
	Average	Range	Average
Alapaha	75.3	61 to 82	1789
Austin	81.7	68 to 92	1976
Brightwell	87.4	78 to 98	2171
Climax	84.4	61 to 97	1940
Premier	82.3	66 to 91	1890
Ochlock-onee	93.9	83 to 108	2554
Tifblue	92.2	84 to 104	2365

Table 4. Mean absolute difference and maximum difference from the mean between observed and predicted time of ripening for several rabbiteye blueberry cultivars using average days and growing degree days (GDD) from the time of flowering.

Cultivar	Mean absolute difference		Maximum difference	
	days	GDD	days	GDD
Alapaha	5.0	4.3	14	7
Austin	5.4	2.0	14	5
Brightwell	6.3	2.1	12	7
Climax	6.3	1.9	13	4
Premier	7.0	3.5	16	6
Ochlock-onee	5.7	4.9	14	7
Tifblue	5.3	3.1	12	7

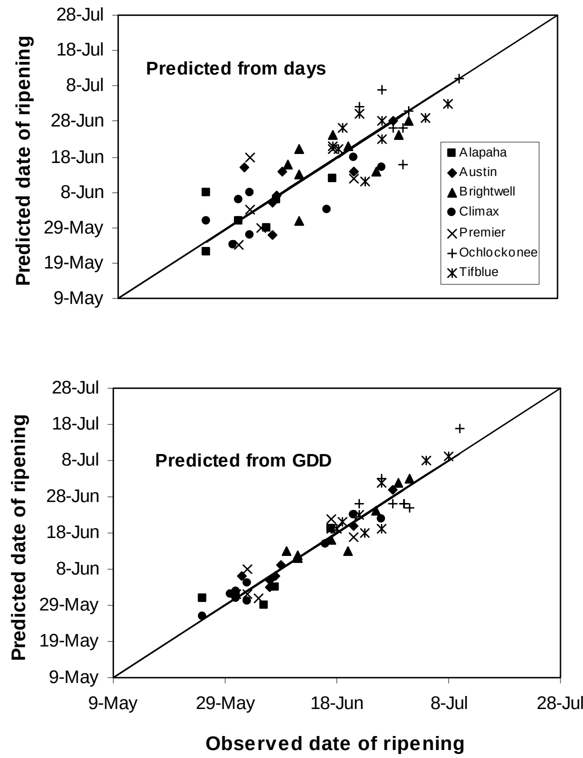

Figure 1. Predicted and observed dates of ripening for seven rabbiteye blueberry cultivars grown at two locations in Georgia from 1998 to 2003 using days to ripening and growing degree days (GDD) to ripening.

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Freezes in March Prove the Value of Being Alert!

Barclay Poling
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At this writing (3/27/04), I think it is fair to say that growers in Eastern and Central NC have had their fill of frost/freeze protection nights for the 2004 season! The photo in Figure 1 is of Kirby Jones, who manages the horticultural crops at Clayton Central Crops Research Station, and on two back-to-back weekends in March (12-14, 19-22), plus some recent weekday nights (March 22/23, 23/24), he has been up all of those nights protecting our strawberry research plots from potentially ruinous frosts and freezes. It is because of Kirby's dedication along with Rocco Schiavone, Res. Tech. III, Hort-Science, and Reid Evans, Superintendent, Clayton Central Crops, that we will have a crop worth seeing on May 5th at our annual Strawberry Field Day of the NC-Agricultural Research Service!

Figure 1a. Kirby Jones, Manager Hort-Crops, Central Crops Research Station (7am, 3/23/04). Kirby is holding a hand-held digital thermometer.

Figure 1b. The thermocouple wire inserted in the open blossom can be "read" on the hand-held digital thermometer; this, in turn, helps us to decide when it is safe to turn-off in the morning (when the blossom temperatures are above 32-33 F).

One of the keys to success in any strawberry frost/freeze cycle, such as the difficult one we have just come through, is staying mentally alert! That is much easier said than done. After two back to-back nights of frost protecting, that third night is often the killer, not because of freeze severity, but more often because of physical exhaustion and mental fatigue of the producer and his/her helpers (e.g. I know of mistakes made on 3/23-3/24 that had to do with not starting the system up early enough on this third night of protection, or not at all!).

Another important key to successful frost/freeze protection relates to knowing the limits of your irrigation system. I was very impressed this season with how well everyone in the industry seemed to appreciate the importance of running higher precipitation rates on nights when winds were a factor. Most growers have probably memorized Table 1 (below), which shows the needed precipitation rates to keep an open strawberry blossom above a critical temperature of 28 F, based on the interaction of air temperature and wind.

Table 1. Required irrigation rates, in/hr, for critical temperature of 28 F and relative humidity of about 70%. By Katherine Perry, from The Strawberry Grower, Vol. 5 No.2, Feb. 1998.

Wind speed Min. temp. °F	0-1 mph	2-4 mph	5-8 mph	9-14 mph
27	0.10	0.11	0.14	0.16
26	0.10	0.13	0.16	0.17
25	0.10	0.14	0.18	0.21
22	0.10	0.18	0.24	0.29
20	0.11	0.21	0.28	0.34

The precipitation rates in this table are actually lower with a 28 °F critical temperature than say at 30 F, but this does not seem to matter "in practice" as the rotation speed of your nozzles is just as important, and if you go up on your nozzle sizes too much (to achieve higher irrigation rates) you will be "trading off" badly on nozzle rotation speed. A 9/64" nozzle should be satisfactory for delivering 0.12" - 0.14"/hr (this higher amount takes you up to 2-4 mph and temperature of 25 °F). A bigger nozzle size should be considered if you think you are at risk for even lower temperatures than 25-26 °F, or higher winds. But, as former Pres. of the NCSA, John Vollmer, indicated to me recently, he can only go up one nozzle size before he sees a significant loss in rotation speed (the goal is 1 full rotation every 60 seconds).

One unfortunate development during this most recent round of back-to-back nights of frost/freeze protection had to do running out of water! With most growers starting at around sunset on March 22nd (when the dewpoints were in the teens for many areas), several new strawberry growers discovered that they had enough water for several hours of irrigation, but not for 15 + hours. This was a great tragedy as I know that one of these growers had an average of 12 healthy blossoms/plant up until the hour when his water supply gave out early in the morning on March 23rd. Row covers would have been a far better option for any situation in which the grower is not sure about the adequacy of his/her water supply!

All-in-all, given the extreme nights of cold and exceptionally low dewpoints that we have just come through (the arctic blasts of 3/22-3/24 were a 1:20 year occurrence, according to SkyBit), I am very pleased with the overall outcome, and the southeastern crop will likely be ready by Easter weekend (April 10-11). In Central NC, the crop is on a somewhat slower track due to all of the cold weather in recent weeks (plus very cold temperatures in mid-to-late February). In the final week of March we are finally beginning to see some open blossoms in northern piedmont counties, and my current projection is that these will not be "red-ripe" berries until the very end of April, and "serious picking" will not be possible until the first week in May in areas like Rockingham County, and colder sections of Guilford and Forsyth.

Spider Mites/ Miticides
An Update

Ken Sorensen
NC State University

Spider mites have been reported in Duplin, Lee, Johnston, and Wake Counties in North Carolina over the last two weeks. Mites await hot, sunny days with no rain (day temperatures above 70°F and night temperatures above 50°F).

Miticides available include: AgriMek, Acramite, Brigade, Kelthane, Danitol, Savey, and recently, Zeal. They represent six classes of miticides. Alternate miticides to lessen chance of mites developing resistance include:

1. Zeal (etoxazole) is a miticide registered by Valent USA Corp. in strawberries to control spider mites, lygus bugs, tarnished plant bugs, and spittlebugs. It acts primarily as an ovicide and larvacide (in this case, the egg and the first stage after the mite egg hatches). In this regard, it performs as a miticide much like Savey (hexythiazox), although it is currently believed to possess a unique mode of action and should not confer cross-resistance with hexythiazox in spider mites. Only one

application is permitted in a growing season and it can be applied within one day of harvest. It carries the signal word, "Caution".

2. There are several new insecticides and miticides expected to be registered in 2004 and beyond. These include the miticides: Kanemite (acequinocyl) by Arvesta Corp., Fujimite (fenpyroximate) by Nichino America, Mesa (Milbemectin) by Gowan Co., and Nexter (pyridaben) by BASF Corp. (a miticide and insecticide especially for whiteflies). Stay in contact for more information.

Insect Management

Lorsban should be applied already or at least before first bloom. This is an essential spray for the strawberry weevil (clipper). Lorsban also suppresses lygus bugs, cutworms, aphids, and mites. Danitol is another material with good activity against lygus bugs and keeps spider mites in check. Clinch or Extinguish baits for fire ants should be placed around fire ant mounds immediately if not done sooner.

Bramble Chores

Spring/Summer Schedule 2004

Gina Fernandez
NC State University

Here is a brief summary of chores for the next few months for the harvest season. If you have any questions give me a call: 919.513.7416.

PRUNING/TRAINING

Prune out spent floricanes after they have produced fruit, do not thin out primocanes until mid-to late winter. Train primocanes to trellis to minimize interference with harvest. Shift trellises or V trellises make this relatively easy. Contact your bramble specialists for more information on these trellis systems.

WEEDS

Weed growth can be very vigorous at the same time as the bramble crop peaks. Weed control is best done earlier in the season before harvest commences. Please note that glyphosphate application at this time can cause serious injury to the crop. See article at http://www.smallfruits.org/Recent/AvoidGlyphosate.htm for details.

INSECT AND DISEASE CONTROL

See bramble spray schedule (Diseases):
http://www.smallfruits.org/GrowerInfo/brgro.htm
And your states Ag. Chemical recommendations.

Also see the article by Barbara Smith in this newsletter for control on double blossom.

IRRIGATION

-Bramble plants need about 1”-2” water/week, and this is amount is especially critical during harvest. Don’t be complacent and think the plant can get by because of all the rain we have gotten this spring, keep them watered.
-Consider installing an overhead system for evaporative cooling. We had very good luck preventing sunscald in our research plots using this method once or twice a day from 10 am to 3 pm for short periods of time (approx. 15 minutes). Do not use evaporative cooling in the late afternoon. You need to have the canopy dry going into the night to minimize disease problems that may arise due to wet canopy during the night. Contact me for details.

TISSUE SAMPLING

-Take leaf samples after harvest and send to a clinic for nutrient analysis. For information on how to sample and where to send samples in NC go to:
http://www.ncagr.com/agronomi/pwshome.htm

HARVEST AND MARKETING

-Service and clean coolers.
-Make sure you have enough containers for your fruit
-Prepare advertising and signage for your stand
-Contact buyers to finalize orders
-Hire pickers

-Prepare signage for field orientation, it is easier to tell pickers where to go if rows are numbered.
-Keep harvested fruit in shade and move into coolers as soon as possible to lengthen the shelf life of the fruit.
-Do you see white spots on your blackberry fruit? It could be stink bug damage or sunscald. See article at
http://www.smallfruits.org/Recent/whitespots_bramble.htm

FALL PLANTING
Order plants now for fall planting see a list of nurseries at:
http://www.smallfruits.org/GrowerInfo/brgro.htm
Due to extensive amount of damage to blueberry blossoms and foliage following application of Rovral, Bayer CropScience cancelled the label for blueberries. The move comes after blueberry growers from Georgia experienced damage to several hundreds of acres of blueberries.

The cancellation should not pose any serious threats to the southeastern blueberry industry. Rovral was primarily used for control of grey mold, also known as Botrytis Fruit Rot. The disease can be effectively controlled with other fungicides available to growers such as Pristine, Elevate, Captevate and Switch.

What's HOT in Caneberry Production and Research

Douglas G. Pfeiffer
Virginina Tech.

New Guthion label. EPA has announced the new label for Guthion, effective August 21, 2003. Grapes and strawberries are now deleted from the label. Guthion remains available for *caneberries, nectarines and peaches until 2005*. Guthion remains apples and crabapples, blueberries, cherries, and pears. Guthion Solupak will be the only formulation available. Raspberry crown borer soil treatment has returned to the Guthion label; both soil and foliar treatments remain on the Sniper and Azinphosmethyl 50 labels. All caneberry labels are still scheduled for elimination after 2005. The Preharvest Interval for U-pick operations has been extended to 30 days.

SpinTor registered on caneberries: SpinTor 2SC (spinosad) is now registered on caneberries for several pests of caneberries. While the label primarily addresses Lepidoptera, several non-lepidopterans are included in the label's pest list: raspberry fruitworm and sawfly (Hymenoptera). The use rate is 4-6 fl oz/A. The PHI is 1 day.

For more information on products and registrations for caneberry production go to: http://www.ento.vt.edu/Fruitfiles/HotBramble.html.

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