

# Small Fruit News

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## Special Reports

### Capture Receives Supplemental Label

The insecticide Capture has received a supplemental registration from EPA for the control of raspberry crown borer in caneberries. The expansion of the label allows a fall or spring application to control borers, which have become a major problem in blackberry plantings. The SRSFC lobbied with the IR- for this expansion. Directions for use allow a “ 0.1 lb ai/A post-harvest(fall) or pre-bloom(spring) application as a drench directed at the crown of plants in a minimum of 200 gallons water/acre. Greater efficacy is observed at higher water gallonages(up to 400 gallons/A) or in application prior to a significant rainfall event. Do not make pre-bloom foliar and pre-bloom drench applications”. The directions for use are quoted from the supplemental label. Capture is a restricted use pesticide and is toxic to fish and aquatic organisms. Follow all label instructions; restrictions; and precautions and consult local authorities for guidance in using this product. The actual label can be viewed [here](#).

### Bramble Chores Spring 2006

#### **Plant growth and development**

- Plants deacclimate quickly
- Bud differentiation (additional flowers formed)
- Bud break
- Flowering
- Primocane emergence

#### **Pruning and trellising**

- Finish pruning and make sure all floricanes are tied to the trellis before budbreak.

- Rotate shift trellises to horizontal position before budbreak; rotate to upright position immediately after flowering.

#### **Weeds**

- Weed growth can be very vigorous at the same time as the bramble crop peaks. Don't let weeds get out of control.
- Weed control is best done earlier in the season before harvest commences.
- Hand-weed perennial weeds in and around plots.

#### **Insect and disease scouting**

- The period of time in the spring when the plant is flowering is the most important season for control of insects and diseases. Know what your pests are and how to control them.

#### **Water management**

- Bramble plants need about 1"-2" water/week. This amount will be especially critical during harvest.
- In the South consider installing an overhead system for evaporative cooling. Turn on once or twice a day from 10 am to 3 pm for short periods of time (approx. 15 minutes) until mid afternoon.

#### **Nutrient management**

- Apply second half of nutrients if doing split application.

#### **Marketing and miscellaneous**

- Service and clean coolers.
- Make sure you have enough containers for fruit in the coming season.
- 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.

## Weed-Free Area Requirement for Establishment of Blueberries

**D. Scott NeSmith**  
**Dept. of Horticulture**  
**University of Georgia – Griffin Campus**  
**Griffin, GA 30223**

Orchard floor management is of concern to most fruit growers throughout the life of their crop; but, it is of paramount concern during the establishment of a new orchard. The rather large capital investment by a grower in a new fruit orchard needs to be offset by rapid establishment and early productivity of the crop. Factors which delay stand establishment and crop productivity need to be managed. However, costs of managing these "limiting" factors need to be considered in order to utilize inputs in the most economically efficient manner.

The continued expansion of the blueberry industry in the Southeast is coupled with many uncertain issues of orchard establishment. A major concern of growers is the control of vegetation, or weeds, particularly during the first few years of planting. In general, vegetation surrounding newly planted orchard crops may reduce growth and crop plant vigor by allelopathy, or by competition for water and nutrients (Hogue and Nielsen, 1987). Undesirable vegetation can be removed via cultivation; however, this practice may damage crop root systems when tillage is conducted too close to the plant. Because of these many factors, herbicides are widely used to manage vegetation in most orchard crops.

Information concerning threshold weed-free areas for optimum crop establishment would benefit blueberry growers by hopefully decreasing the crop establishment period and by reducing herbicide and labor costs associated with "excess" vegetation management. The following is a summary from a research project (NeSmith and Krewer, 1995) that examined the early growth of two rabbiteye blueberry cultivars in response to varying weed-free areas in a fescue sod.

'Tifblue' and 'Brightwell' rabbiteye blueberries were planted into an existing fescue sod in March with 12 ft between rows and 6 ft between plants in a row. The 2 varieties were randomly assigned to rows with a single row containing 8 plants of the selected variety. Following planting, weed-free circles of varying diameters were established using herbicides and

metal rings. Resulting treatments were as follows: 1) no vegetation control; 2) 2 ft diameter vegetation-free circle; 3) 3 ft diameter vegetation-free circle; 4) 5 ft diameter vegetation-free circle. These treatments resulted in vegetation-free areas of 0, 3, 7, and 20 ft<sup>2</sup>. Ten plants of each variety received each treatment. Single plants were considered as replications. Herbicides used were recommended rates (Georgia Pest Control Handbook) of paraquat (Gramoxone) and oryzalin (Surflan)<sup>1</sup>. These were applied about 1 month after planting, and were used over the course of the experiment in conjunction with hand weeding in order to maintain the vegetation-free areas. Plants were grown primarily dryland, with the exception of 2 to 3 overhead irrigation events in extreme drought situations. Soil tests were made annually, and fertilizer was applied according recommendations.

Growth of the plants was monitored for the first 3 years. Canopy height (h) and width (w) were measured (in cm) every 4 to 6 weeks during the growing season. These measurements were used to calculate a growth index (GI) as follows:

$$GI = (h \times w)/100$$

In the fall following the first year's growth, cumulative shoot length and number were measured for each plant. Yields were not determined for the crop in any year; however, flower bud counts were made in the spring of the 3<sup>rd</sup> year for each plant.

In general, there were no significant cultivar differences in response to treatments; hence data were pooled for analyses. By the end of the first year, there was a significant response of growth index of both cultivars to weed-free area (Figure 1). Growth was much greater for the largest weed-free area than for the control. There was a trend for increased growth index as weed-free area increased; however, there was generally no significant difference between GI for the 7 ft<sup>2</sup> and the 20 ft<sup>2</sup> weed-free areas. By the fall of the third year, all weed-free area treatments had a significantly higher GI than did the control. Average shoot length the first fall following plant establishment increased with diameter of the weed-free area (Figure 2). There was no influence of vegetation management on shoot number per plant. Treatments of both cultivars

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<sup>1</sup> Mention of trade names is for the benefit of the reader, and does not imply endorsement by The University of Georgia.

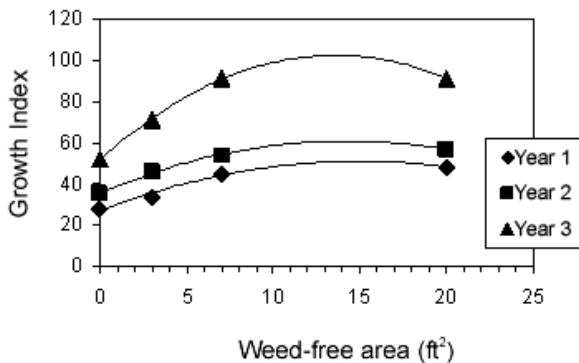
averaged around 40 shoots per plant. Flower bud counts from the spring of the 3<sup>rd</sup> year showed a strong correlation with weed-free area, with the greatest bud number being present on those plants having the largest weed-free area (Figure 3).

Overall, these data indicate there is a definite beneficial response of young blueberries to weed control. The absence of sod (or weeds) accelerated early growth of all treatments. However, it appears the threshold, or optimum, weed-free area is less than the 20 ft<sup>2</sup> maximum area used in this study. The threshold is likely between 7 ft<sup>2</sup> and 15 ft<sup>2</sup>. Hence, a grower with 6 ft between plants would likely get maximum growth response of young blueberries by maintaining a weed-free band of 2 to 3 ft.

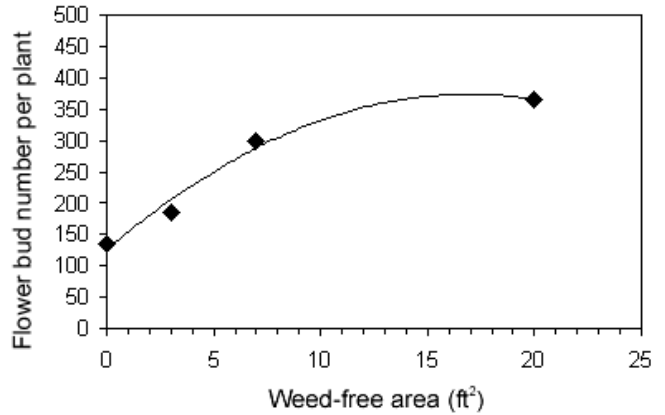
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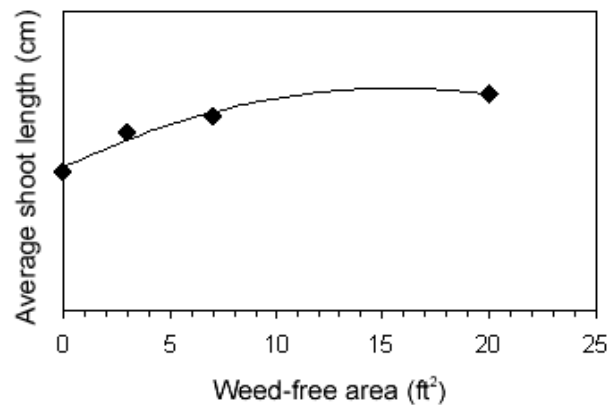
NeSmith, D.S. and G. Krewer. 1995. Vegetation-free area influences growth and establishment of rabbiteye blueberry. HortScience 30: 1410-1412.



**Figure 1.** Growth indices of rabbiteye blueberry plants for various weed-free areas over a three year period. Growth index was calculated by dividing the product of canopy height and width by 100.



**Figure 2.** Average shoot length of rabbiteye blueberries in response to weed-free area. Shoot data were taken the first fall following crop establishment.



**Figure 3.** Flower bud number of rabbiteye blueberries in response to weed-free area. Data were taken in the spring of the 3<sup>rd</sup> year of the experiment.

**Baron Named Executive Director of the IR-4 Program**

Dr. Jerry Baron will succeed Dr. Robert Holm as Director of the IR-4 program effective September 1, 2006. Dr. Holm will retire on that date. Jerry received the Ph.D in Horticultural Science at NC State University in 1985 under the direction of the current coordinator of the SRSFC, Tom Monaco. Jerry’s thesis research dealt with the mechanism of tolerance of blueberry to hexazinone(Velpar) so he has a connection to small fruits.

Dr. Baron received his Bachelor of Science in Agriculture and Master of Science in Horticulture from Ohio State University, and as mentioned the Doctor of Philosophy in Horticultural Science from North Carolina State University. He joined IR-4 and Rutgers University in 1986 as Coordinator and Assistant Research Professor. Jerry served as National Coordinator and Associate Research Professor from 1991 to 1997 and Assistant Director and Research Professor from 1998 to 2002. He spent just over a year refining his leadership and management skills serving as Associate to the Executive Dean of Rutgers' Cook College from 2001 to 2002. Since 2002, he has served as the Associate Director of IR-4. In that capacity, Jerry manages the development of the yearly research plan; oversees all aspects of IR-4's ornamental and non-food crop research objective; and supervises IR-4 Project Headquarters administration support staff. He has also served as a consultant to foreign governments in regards to US crop protection laws and regulations and opportunities to harmonize.

The IR-4 program is very critical to the small fruit industry and other specialty crops. Without this program most of the crop protectants utilized by our growers would not be registered by EPA. To learn more about the IR-4 program check the following web site: <http://ir4.rutgers.edu/>

### **Rebel Southern Highbush Blueberry**

A new southern highbush blueberry cultivar named 'Rebel' has been developed by Dr. Scott NeSmith at The University of Georgia. Rebel has a chill requirement of 400 to 450 hours. It is a new, very early season southern highbush with large fruit. Berries are medium to light blue in color, and have a small, dry picking scar, and good firmness. Flavor is only average. Berries ripen 6 to 9 days before Star in south and middle Georgia. Plants are highly vigorous, very precocious and have a spreading bush habit with a medium crown. Rebel flowers 3 to 4 days before Star in south and middle Georgia. Yield has been similar to or greater than 'Star' in Georgia. Leafing has been excellent, even following mild winters. Propagation is very easily accomplished using softwood cuttings. Plants are self-fertile to a degree, but should be planted with other southern highbush blueberry cultivars with a similar time of bloom for cross-pollination (Emerald and Star recommended). Rebel is new, so planting on a trial basis is recommended. Released by UGA in 2006. Please note the new blueberry releases from UGA are protected varieties. For information on licenses

and licensed propagators of UGA blueberry varieties, contact the Georgia Seed Development Commission in Athens (ph. 706-542-5640), or visit their web site at <http://www.gsd.com/>.



**Figure 1.** Rebel southern highbush blueberry during bloom.



**Figure 2.** Rebel plants growing in a high density bed in late summer.



**Figure 3.** Rebel southern highbush fruit during ripening (upper photo). Berries of Rebel (TH-642) compared to Emerald, Star, and O'Neal berries (lower photo).

### Camellia Southern Highbush Blueberry

A new southern highbush blueberry cultivar named 'Camellia' has been developed by Dr. Scott NeSmith at The University of Georgia and Dr. Arlen Draper, USDA-ARS retired. Camellia has a chill requirement of 450 to 500 hours. It is a new early to mid-season southern highbush blueberry cultivar. Berries are large, have very light blue color, and have a small, dry picking scar. Firmness is good and flavor is excellent. In south Georgia, Camellia ripens a few days after Star, but before O'Neal. Plants are highly vigorous, with strong cane growth and an open, upright bush habit and a narrow crown. Camellia flowers 5 to 8 days after Star and O'Neal in south Georgia. Yields have been similar to Star and greater than O'Neal. Camellia should be planted with other southern highbush blueberry cultivars with a similar time of bloom for cross-pollination (Star and O'Neal recommended). As with all new blueberry varieties, Camellia is recommended on a trial basis. Camellia was released by UGA and USDA-ARS in 2005. Please note that new blueberry releases from

UGA are protected varieties. For information on licenses and licensed propagators of UGA blueberry varieties, contact the Georgia Seed Development Commission in Athens (ph. 706-542-5640), or visit their web site at <http://www.gsd.com/>.



**Figure 1.** Camellia southern highbush blueberry during bloom.



**Figure 2.** Camellia southern highbush blueberry fruit during ripening (upper photo). Berries of Camellia (TH-621) compared to Star (lower photo).

## Gramoxone Inteon A New Formulation of Paraquat

**Wayne Mitchem  
NC, SC and GA Regional Weed Specialist**

Gramoxone Max has been the trade of paraquat marketed in the United States since it replaced Gramoxone Extra several years ago. A new formulation of paraquat, Gramoxone Inteon, is being marketed for the first time this spring and will replace Gramoxone Max when current supplies are sold. The Gramoxone Inteon formulation offers the same activity as Gramoxone Max but is considered more user friendly than Gramoxone Max. Gramoxone Inteon contains an alginate which reduces oral toxicity of paraquat. Additionally its' odor alerting agent smells like decaying grass, a less offensive odor than the alerting agent in Gramoxone Max. The most significant difference between Gramoxone Max and Gramoxone Inteon is the formulation concentration which directly impacts application rate. Gramoxone Max contains 3 lbs of paraquat per gallon while Gramoxone Inteon contains 2 lbs of paraquat per gallon. The less concentrate Gramoxone Inteon therefore requires a higher use rate than Gramoxone Max (**see Table 1**). Gramoxone Inteon must be applied in combination with a non-ionic surfactant for optimum herbicide performance like paraquat formulations.

**Table 1. Gramoxone Inteon use rates, maximum number of applications and PHI for small fruit, as well as Equivalent Gramoxone Max rate.**

<b>Crop</b>	<b>Gramoxone Inteon Rate</b>	<b>Max Num of Apt</b>	<b>PHI (days)</b>	<b>Equip Gramoxone Max Rate</b>
Blueberry	2 to 4 pts/A	5	-	1.4 to 2.7 pts/A
Bramble	2 to 4 pts/A	5	-	1.4 to 2.7 pts/A
Grape	2.5 to 4 pts/A	5	-	1.7 to 2.7 pts/A
Strawberry	2 pts/A	3	21	1.4 pts/A

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**Editor and Contributor .....Tom Monaco**

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