RUTGERS
New Jersey Agricultural Experiment Station

The Blueberry Bulletin

A Weekly Update to Growers

April 2, 2020 **Vol. 36, No. 2**

Please note that the 'Diseases' column has been updated to reflect the corrected article on pages 6 and 7.

- *Visit the Blueberry Bulletin webpage at njaes.rutgers.edu/blueberry-bulletin*
- *The 2020 Commercial Blueberry Pest Control Recommendations for New Jersey is available on njaes.rutgers.edu*

BLUEBERRY CULTURE

Dr. Gary C. Pavlis, Ph.D.
Atlantic County Agricultural Agent

Growers are aware that bud break is the best timing for the first application of an N-P-K fertilizer. If it is applied as a granular, a split application is best - one half now and one half in 6 weeks. If fertigation is the method used, again half now and half 6 weeks later. Even better, it has been found that spreading the fertigation application over the next 6 weeks is optimum.

As growers are also aware, the Rutgers IPM program also takes leaf and soil samples at the appropriate times and sends the samples to a lab for analysis. This year 255 leaf samples were taken and 225 soil samples were taken. The lab analysis shows that 155 or 68% of soil samples were below 4.5 which is the low range of optimum. Very few samples were above 5.0. There needs to be an increase in the application of lime. Research we did years ago shows that for every tenth increase desired, 100lbs./A of lime should be applied. Thus to go from 4.0 to 4.5, 500lbs./A lime should be applied.

The leaf analysis also indicated a few problems. First and four most, 98.8% of the samples were below optimum for Nitrogen. If the pH of the soil is too low, N uptake is decreased so the lack of N in the leaf samples is partly due to the low pH in many of the samples. Growers should check their pH soil tests and if it is below 4.5, low N may be due to the pH. However, if the pH is in the proper range of 4.5 to 5.0, an increase in N is warranted. Understand that just applying additional N when the pH is low can result in softer fruit. A good rule of thumb is to look at the plants and see if most had 3-5 new canes that grew to the full height of the plant in 2019. If this didn't happen, it is usually due to low pH or low N or both.

Lastly, the leaf analysis showed that there is a problem with some of the micro nutrient levels. 88% of the samples were deficient in Iron and 86% were deficient in Copper. Growers should check their leaf analysis results and if a deficiency is indicated, a foliar application is warranted. Both of these elements are very important for optimum plant growth and fruit yield. In addition, 70% of the samples showed excessive levels of Boron. In many case, boron should be omitted from the fertilizer program in 2020.

Grower should again consult with their analysis and if the level is above 75 ppm, omit Boron this year. The optimum range is 30ppm to 50ppm. I saw the highest levels of Boron I have ever seen from these 2019 samples. **Too much Boron is as bad as too little.**

Gary C. Pavlis, Ph.D.
Atlantic County Agricultural Agent

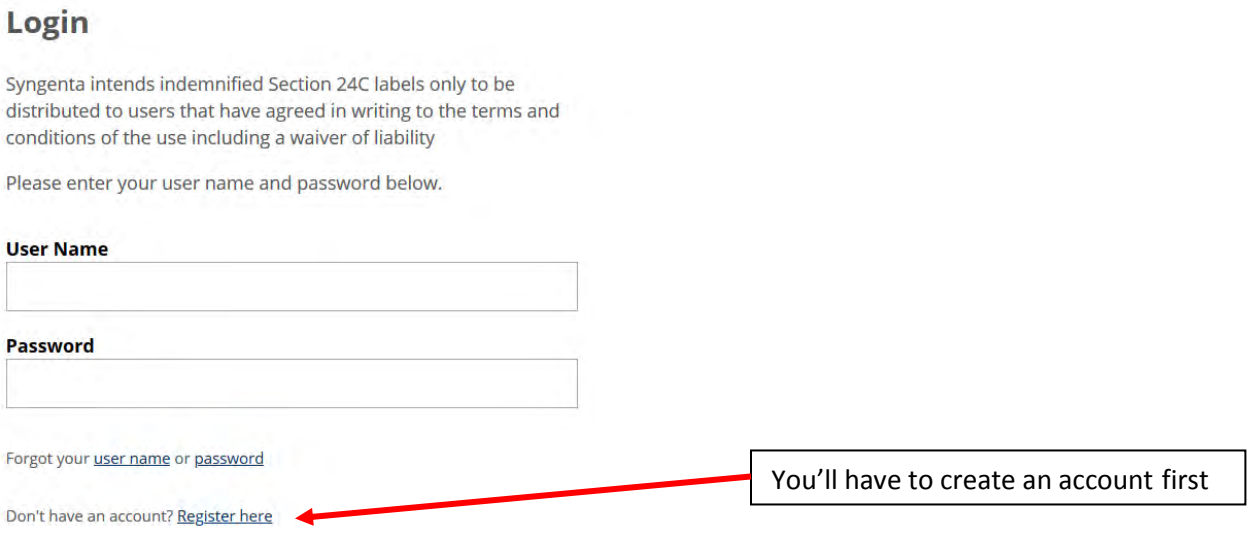
Thierry Besancon, Asst. Extension Specialist in Weed Science

Where Can I Find the 24(c) Label for Dual Magnum Herbicide in Blueberry

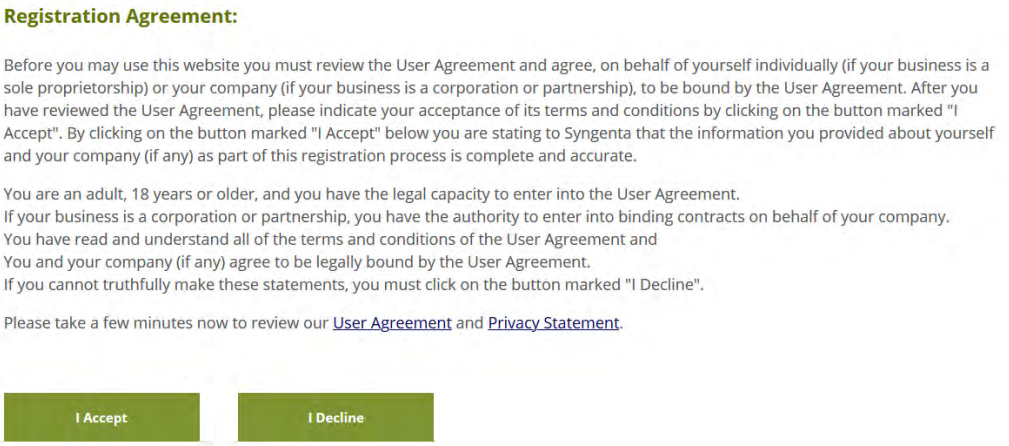
I've been recently asked by a few people if Dual Magnum is really labeled for use on highbush blueberry since they cannot find the label on the CDMS website. Dual Magnum received a 24(c) Special Local Need label for various crops in New Jersey, including highbush blueberry. The 24(c) label is an indemnified label provided by Syngenta, meaning that this label con only be distributed to users that have agreed in writing to the terms and conditions of the use including a waiver of liability. Therefore, the label is only available from the Syngenta website:

https://www.syngenta-us.com/labels/indemnified-label-login

Step 1



Step 2

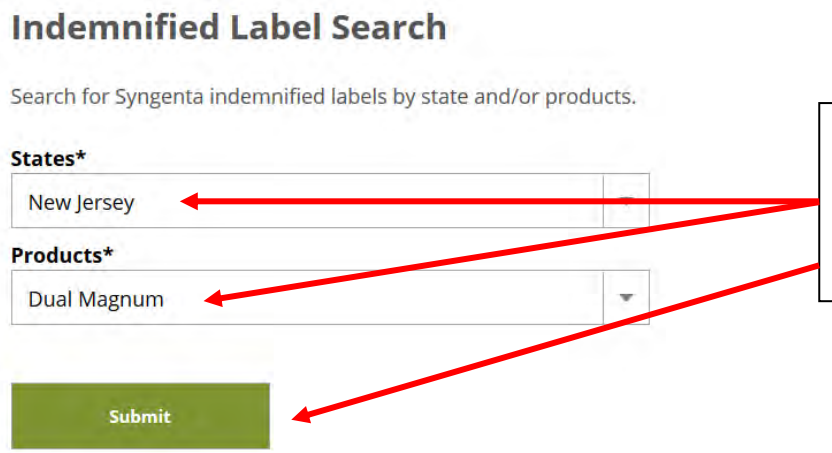


One you've completed all the information required for registration, accept the registration agreement by clicking on "**I Accept**"

Step 3

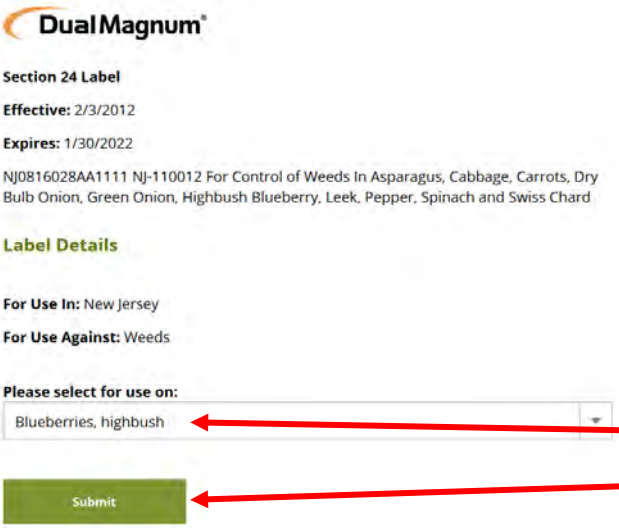
Login to the indemnified label section by using your Username and Password. You'll then be redirected to the Indemnified Label Search page

Step 4



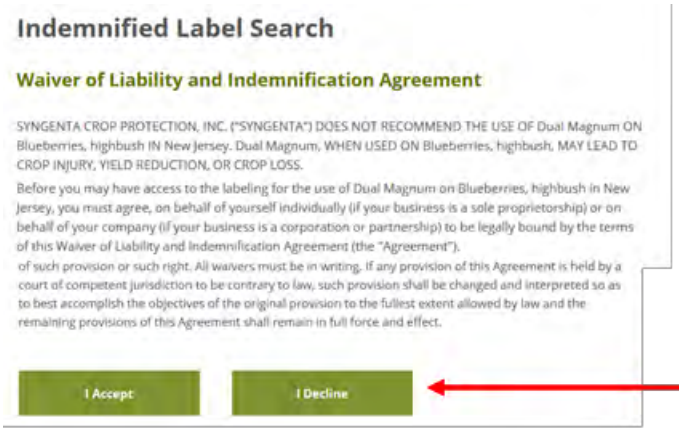
From the drop-down menu, select "New Jersey" under States and "Dual Magnum under Products".
Then click on the "Submit" button

Step 5



Select "Blueberries, highbush" under For use on. Then click on the "Submit" button

Step 6



Read the Waiver of Liability and Indemnification Agreement, and then click on either "Decline" or "Accept" to get access to the label.

BLUEBERRY IPM

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit
Ms. Carrie Denson, IPM Program Associate – Fruit

Cranberry Weevil (CBW): Adult CBW have been found on numerous fields over the past 2 weeks. Most of the observed feeding was noticed last week. Heavier populations started in field areas that bordered the woods. Scouting done this week indicated that adult weevils have moved to the interiors of fields, defined as greater than 6 rows from a field edge. Very little interior feeding was observed in field interiors, possibly due to the cooler weather this week. As the plants move past the T4 stage and on to bloom, the weevil should be less of a problem. However bushes can still sustain injury anytime prebloom, especially if populations are high. Begin to check by looking at field edges, and move in to at least 6 rows. If you find feeding signs, and no insecticide has been applied, then a treatment is suggested. Threshold guidelines for cranberry weevil are to treat if over 20% of sampled clusters show damage, or if there are at least 5 weevils per bush (on bright sunny days). A damaged cluster is defined as damaged if at least 1 flower or developing flower is damaged.

Insect Incidence					
Week Ending	% Bud Feeding		Adults/Bush (Beating Tray)		Leps./Bush (Beating Tray)
	Avg	Max	Avg	Max	Avg
3/27	12.8	40	0.68	8.3	.01
4/3	0	0	0.8	7.6	0.0

NOTE: Please see corrected 'Diseases' article on next page.

DISEASES

By Peter V. Oudemans, Ph.D.
Professor and Extension Specialist
Plant Pathology

Timing	Phomopsis	Mummy berry	Anthracnose
Week of April 6	Nothing required	If necessary begin/continue applications	N/A
Material	----	Indar or propiconazole	----
Week of April 13	Nothing required	Scout for leaf blight. If present or if your field has a history of Mummy berry	Begin applications on all varieties
Material	----	If Mummyberry is a concern materials such as Proline, Quadris Top or Quash are effective against both Anthracnose and Mummy. Otherwise the Ziram followed by Abound is recommended for anthracnose management	
Week of April 20	N/A	Nothing required	Continue applications on a 7-10 day interval
Material	----	----	Ziram or (Abound)

A note on Quadris Top. This is a combination of Abound and a group 3 material called difenconazole. At 14 fl.oz. per acre which is the high rate for Quadris Top the rate for Abound is less than the labelled rate. Therefore, you can add 4.25 fl.oz. of Abound to Quadris Top to make the rate equivalent to Abound at 15.5 fl.oz. If you have questions or are unsure about this please call.
A note on Anthracnose control. The best treatment we have found for this disease is alternation of Ziram and Abound or Quadris Top (7-day interval) for a total of 4 applications. There are some alternatives to Abound such as Omega, Proline, Quash, or Switch.
A note on Botrytis control. First of all the anthracnose program will suppress Botrytis and under severe conditions buy you some time to take preventative action. Materials such as Switch, Pristine, Elevate, and Luna are good botrytis materials.

2020 brings its own unique set of challenges. First of all this was one of the best winters for accumulating chilling units in the past 20 years (Fig. 1) and it ranks up there with 2001, 2003, 2005 and 2013. This is important because the level of chilling dictates the rate and timing of budbreak (T3) and bloom. As you can see from Fig. 2, 2020 is one of the earliest seasons on record for bud break and it looks like bloom will be early as well.

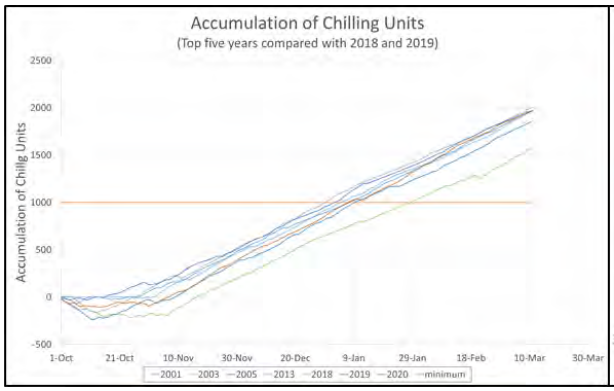


Fig. 1. Accumulation of chilling units for Hammonton, NJ (Data from https://benedick.rutgers.edu/Blueberryweather/)

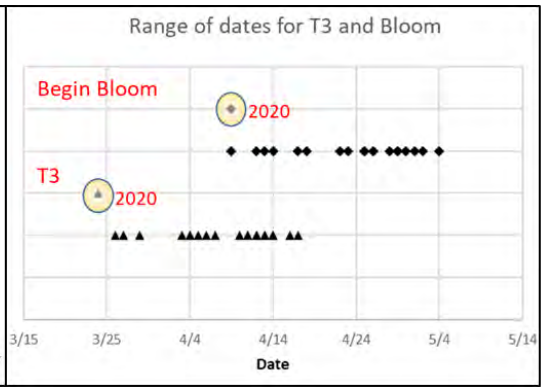


Fig. 2. Figure showing dates for peak T3 (triangles) and beginning of bloom (Duke). Data courtesy of V. Roth.

Early seasons bring a host of concerns as well as challenges. First of all the likelihood of a spring freeze is greatly increased in this type of season. Also, if cool wet temperatures prevail during bloom we could see a repeat of 2003 and have a Botrytis challenge. Frost is a moving target and as the crop develops, the critical temperatures also move. Figure 3 shows this relationship and explains the temperature sensitivities of various bud stages.

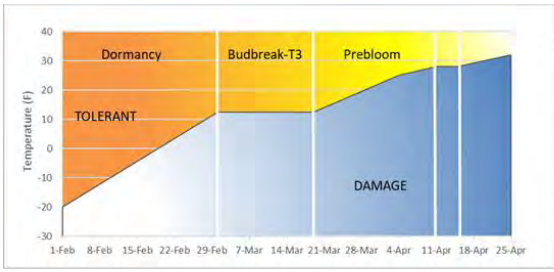


Table 1. Blueberry Critical Temperatures

Bud Stage	Tight Cluster	Early Pink Bud	Late Pink Bud - Pre bloom	Bloom	Green Fruit
Damage					
Slight	23° F	25° F	28° F	29° F	31° F
Severe	20° F	23° F	24° F	27° F	28° F

Fig. 3. Changes in cold tolerance during the 2020 growing season. Tolerance levels and a graphical description are presented here (https://www.canr.msu.edu/blueberries/ growing_blueberries/growth-stages)

We have already seen some examples of cold damage in some fields and where the buds are damaged fruit production will be reduced. Temperature sensitivity will increase as we approach bloom, fruit set and berry development.

Fig. 4. Flower buds affected by freezing temperatures. Damage in 2020 was possibly incurred on the 6th-8th or possibly the 16th of March. Note the light green appearance of the damaged buds versus the red coloration of the undamaged ones.