RUTGERS
New Jersey Agricultural Experiment Station

The Blueberry Bulletin

A Weekly Update to Growers

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Visit the Blueberry Bulletin webpage
njaes.rutgers.edu/blueberry-bulletin

BLUEBERRY CULTURE

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

Dear Blueberry Grower:

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. In 2020, 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.

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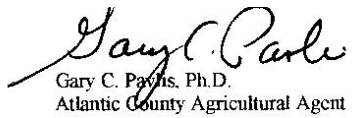
Both of these elements are very important for optimum plant growth and fruit yield. In addition, 70% of the samples showed excessive levels of Boron. In many case, boron should be omitted from the fertilizer program in 2020.

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.**



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BLUEBERRY INSECT

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

The following insecticides have recently been registered in highbush blueberries:

Apta / Bexar (tolfenpyrad). This insecticide from Nichino America that inhibits cellular respiration in the insect, facilitating anti-feeding behavior. The highbush blueberry use rate is 27 fl oz/acre and the label lists several insect pests including aphids, cranberry weevil, blueberry maggot, cranberry fruitworm, leafhoppers, scales, and plum curculio. Efficacy trials in 2020 showed good control on plum curculio. Further efficacy trials will be conducted in 2021 on plum curculio and aphids. This insecticide has a REI of 12 hrs, a PHI of 3 days, should be applied by ground only, and has a maximum of three applications per season or 81 fl oz/acre/season.

Verdepryn 100 SL (cyclaniliprole). This insecticide is distributed by SummitAgro USA and has a use rate of 8.2 to 11 fl oz/acre. The label lists the following insect targets: spotted wing drosophila, leafrollers, cutworms, armyworms, cranberry fruitworm, blueberry maggot, plum curculio, among others. In our efficacy trials, this product has provided very good control of spotted wing drosophila. Verdepryn belongs to the same class of insecticide as Altacor and Exirel (diamides). Exirel also provides very good spotted wing drosophila control. I recommend using Verdepryn and Exirel in rotation with other insecticide classes (organophosphates, carbamates, pyrethroids, and spinosyns) for the control of spotted wing drosophila.

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Verdepryn has a REI of 4 hrs, a PHI of 1 day, and a maximum application of 33 fl oz/acre/year.

Senstar (spirotetramat + pyriproxyfen). This insecticide from Valent has a use rate of 16-20 fl oz/acre in highbush blueberries. According to the manufacturer, Senstar provides growers with two modes of action that act in unique ways to prevent young insects from growing into adult form (i.e., growth regulators) for long-lasting control of soft-bodied insects. The label lists aphids, blueberry gall midge, and thrips (immatures) as targets. Efficacy trials will be conducted in 2021 to test this product against aphids. Senstar has a REI of 24 hrs, a PHI of 7 days, and a maximum application of 60 fl oz/acre/season.

Biological insecticides

NemAttack™ - Sr Beneficial Nematodes: This product contains the beneficial nematode Steinernema riobrave. These nematodes are naturally occurring, soil dwelling ambush predators that control a wide range of insect pests. Studies in apples, peaches, and blueberries show that S. riobrave is effective at controlling plum curculio larvae that exit fruit to pupate in the soil. Applications in blueberries should be targeted around early-mid June. See label instructions for method and rate of application.

Nemagard: This product contains the beneficial nematode Steinernema scarabaei. This nematode is effective at controlling oriental beetle larvae, including the hard-to-control third instars. Nemagard can be stored at room temperature or up to 12 weeks and mixes easily into solution. Nemagard is effective in a wide range of soil conditions and in soil temperatures above 14°C, allowing for treatment of grubs throughout September and into October. Follow label instructions for method of application and rate.

Next Generation of Blueberry and Caneberry Production in Vertical Farms

Multi-Year Partnership will optimize plants for indoor growing and commercialize blueberries and caneberries grown in vertical farms globally

March 30, 2021

07:00 AM Eastern Daylight Time

NEWARK, N.J. & SANTIAGO, Chile--(BUSINESS WIRE)--AeroFarms, a certified B Corporation and leader in vertical farming, and Hortifrut S.A., a certified B Corporation in Chile and a global business platform leader in berries marketing, distribution and production, today announced a multi-year partnership to jointly research and develop blueberry and caneberry production in fully-controlled indoor environments and vertical farms.

Together, this R&D partnership will identify and optimize blueberry and caneberry plants for indoor growing, allowing both companies to further expand their knowledge in sustainable farming. The goal of the partnership is to advance the production of the next generation of commercial blueberries and caneberries in vertical farms.

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(Vertical Farms continued from page 3)

The first phase of the partnership is already underway with blueberry plants arriving this spring at AeroFarms global headquarters in Newark, New Jersey U.S.A. where they have over 100,000 square feet

of vertical farming space for R&D and commercial production. Hortifrut, through its state-of-the-art genetic program, has bred compact blueberry plants ideal for vertical farming and AeroFarms has optimized its grow systems for berry production. Both companies envision a long term partnership working together to formulate the commercialization of blueberries and caneberries grown in vertical farms globally. The teams are focused on delivering the most flavorful, nutritious, fresh blueberries to consumers at any time, anywhere in the world. The agreement considers the experimental site setup, planting of Hortifrut varieties, feasibility, data analysis and potential further expansion.

"We are thrilled to announce our blueberry partnership with Hortifrut," said David Rosenberg, Co-Founder and Chief Executive Officer of AeroFarms. "As we started sharing our mission and values with Hortifrut, we found deep alignment between our corporate goals and agricultural technologies. Hortifrut's legacy of plant breeding and global blueberry production is unsurpassed in the industry, and we are excited to work together with the industry leader in delivering berries to the world every day. We look forward to bringing our mastery of controlled environment growing to commercial blueberry production. New Jersey has a rich history in blueberries dating back to 1910 when blueberries were domesticated for the very first time. Now AeroFarms and Hortifrut will be pioneering the next chapter for blueberries by domesticating them again in New Jersey – this time in a fully controlled environment."

"We are very excited to have reached this agreement with such a successful and thriving vertical farming company like AeroFarms," commented Juan Ignacio Allende, Hortifrut's CEO. "Now we will put the efforts and know-how of both teams to work side by side, allowing us to succeed in growing blueberries and caneberries under this new technology. Responsible farming, high quality fruit and a commitment to customer service are in our DNA. We believe this is only the beginning of a successful partnership focused on growing, supplying and marketing the best berries, every day all over the world."

<u>Sources of Press Release:</u>

https://aerofarms.com/2021/03/30/hortifrut/

https://www.businesswire.com/news/home/20210330005429/en/AeroFarms-and-Hortifrut-Announce-RD-Partnership-to-Advance-the-Next-Generation-of-Blueberry-and-Caneberry-Production-in-Vertical-Farms