

The Blueberry Bulletin

A Weekly Update to Growers

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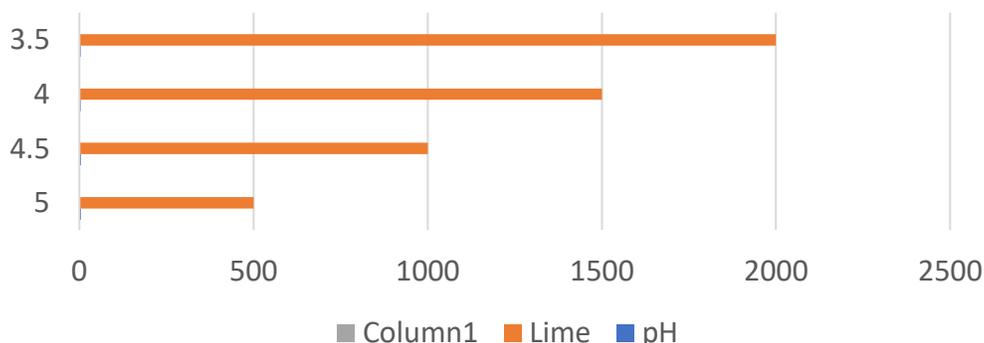
- ❖ Visit the Blueberry Bulletin webpage at njaes.rutgers.edu/blueberry-bulletin
- ❖ The 2024 Commercial Blueberry Pest Control Recommendations for New Jersey is available on <https://njaes.rutgers.edu/pubs/>

BLUEBERRY CULTURE

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

I have noted that many growers are planting the variety Draper as a replacement for Bluecrop, largely because Draper is more resistant to the fungal disease, anthracnose. The Draper blueberry has exceptionally firm berries and concentrated ripening periods. The berries have excellent post-harvest color retention and superior shelf life. It is extremely fast to hand-pick and also has potential to be harvested by machine. However, it is well documented that the variety has a large calcium requirement, similar to the large iron requirement of the variety Duke. The problem with calcium is that is much less available at a low pH. Our IPM program collects leaf and soil for analysis on a yearly basis and we have noted that 70% of the fields sampled have a pH below 4.5 and 24% are below 4.0. At these pH levels calcium is much less available and as a result, with the variety Draper, unripe fruit will fall to the ground before it can be picked. There are two options in all the newly planted Draper fields, 1. A weekly application of calcium carbonate from bloom until harvest will greatly decrease fruit drop or 2. Increase the pH to a level approaching 5.5. The table below indicates the amount of lime needed to increase the pH to 5.5. Note that a soil with a very low pH will require a ton of lime at the pH of 3.5. This amount of lime in one application will most likely injure the blueberry plant. A course texture lime is less likely to injure plants as opposed to a liquid lime application. A better course of action is to start applying lime in smaller applications each year until fruiting begins, usually in year three.

Draper Lime Requirement



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 Atlantic County Agricultural Agent

PEST MANAGEMENT

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University

Dr. Janine Spies, IPM Agent – Fruit

Ms. Carrie Mansue, Senior Program Coordinator

The Table below shows the activity periods of the major insect pests of blueberries in New Jersey. Bars show the period when scouting (in grey) and management (in black) of the pest is most important.

Insect Pest	dormant	budbreak- prebloom	bloom	1 st post - pollination	fruit maturation	post- harvest
Scale	█			█		
Cranberry weevil		█				
Leafrollers		█	█	█	█	
Spanworms		█	█	█		
Spongy moth		█	█	█		
Cranberry Fruitworm				█	█	
Thrips			█	█		
Gall midge			█	█		
Leafminers				█	█	
Plum curculio			█	█		
Aphids				█	█	█
Leafhoppers				█	█	█
Blueberry maggot					█	█
Oriental beetle					█	█
Spotted-wing drosophila				█	█	█
Japanese beetle					█	█
Bud mite						█

Cranberry Weevil

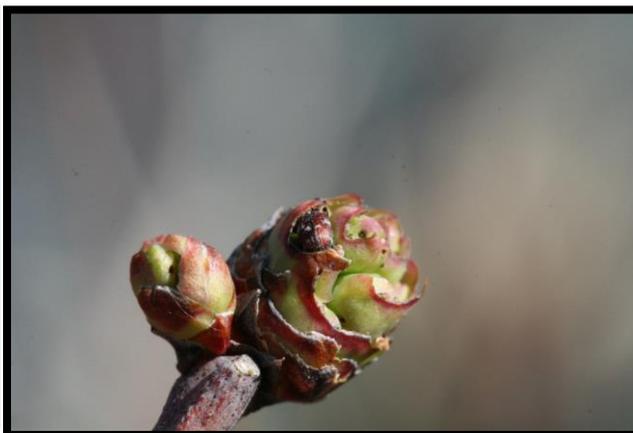
This is the main pest of concern at this time of the year.

Life cycle: Adults move from wooded areas, where they overwinter, into the fields; however, adults occasionally overwinter inside blueberry fields if left unmanaged. The adults are small (1/16 inch long), dark reddish brown beetles, with few whitish bands on the wings, and a long snout (see Picture 1). Eggs are laid singly through the feeding holes into the flower. Larvae feed from egg hatch to pupation within the flower buds in which they were deposited as eggs. Pupation occurs within the infested flowers and adults emerge in late May. Infested flowers turn purplish, fail to open, and eventually fall to the ground.

Scouting and Control: To monitor adults, use a beating tray under each bush and hit the bush to dislodge weevils; repeat on both sides of the bush to obtain number of weevils per bush. Because weevils are abundant near the woods where they overwinter, sampling for weevils should be intensified along the edge rows near the woods. Adults are found on sunny days. Monitor at least 10 bushes per sample site. Spraying should be confined to these “hot” spots on edge rows. Treatment thresholds are 5 weevils per bush or 20% of blossom clusters with feeding injury (i.e., at least 1 injury/puncture per 5 clusters) (see Picture 2). Asana, Avaunt, Imidan, or Mustang Maxx are recommended for cranberry weevil control.



Picture 1: Cranberry Weevil on a Blueberry Flower Bud (Photo by D. Polk)



Picture 2: Cranberry Weevil Feeding Injury to Buds (Photo by D. Polk)

DISEASES

Dr. Peter Oudemans, Professor and Extension Specialist, Plant Pathology

Timing	Phomopsis	Mummy berry	Anthracnose
Week of April 1	Continue with 1 st and 2 nd applications	Continue with 1 st and 2 nd applications	----
Material	Indar or other FRAC 3	Indar or other FRAC 3	----
Week of April 8	Continue treatments in fields with a history of phomopsis	Scout for strikes and take action if present	Watch for early bloom
Material	Indar or other FRAC 3	Indar or other FRAC 3	----
Week of April 15	N/A	N/A	Bloom Beginning
Material	----	----	Follow planned schedule

Mummy berry: Mummy blight symptoms to look for starting this week. It is important too look for brown powdery patches along the lead midrib. Also, progressive discoloration on leaves and flowers starting at the base and moving towards the tip help diagnose this disease. It can be easily confused with shoestring as well as Phomopsis and Botrytis.



For **Phomopsis** two applications of fungicide are most beneficial for susceptible cultivars such as Duke. Fungicide applications will have a diminishing return after flowers begin to open. Field with higher Phomopsis in 2023 are at greatest risk for 2024.

Symptoms of common early season diseases. It is important to distinguish between common diseases seen this time of year. Effective treatment depends on an accurate diagnosis.



Symptoms of common early season diseases. A) Shoestring virus on Blueray. Note the development of reddening at the base of the leaf and progression towards the leaf margins. This symptom can be confused with mummyberry. B) Botrytis blossom blight typically develops after bloom and especially in years with wet overcast conditions (poor pollination) and the flowers age without dropping the corolla. The gray spores typically form abundantly on the dead tissues. C) Phomopsis is the most common disease this time of year and is especially prevalent on Duke, Symptoms begin just prior to bloom and continue after bloom is complete. Botrytis spores can form on these dead tissues.

Climate and Phenology

Dormant blueberries can tolerate temperatures below 15F. As the buds develop the sensitivity to cold changes. The stages of bud development correspond to different levels of cold tolerance. The chart below illustrated the relationship between temperature and cold damage at different growth stages. This illustration can be used as a guideline for cold tolerance. This information was modified from <https://www.canr.msu.edu/blueberries/weather/critical-spring-temperatures>.

Bud Stage	T1	T3	T4	T5	Bloom	Fruit set
						
Damage						
Slight	15°F	23°F	25°F	28°F	29°F	31°F
Severe	10°F	20°F	23°F	24°F	27°F	28°F