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April 16, 2025 **Vol. 41 Issue #3**

THE BLUEBERRY BULLETIN

A Weekly Update to Growers

* 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

Fertilizing Newly Planted Fields: Growers putting in a new field have requested information on fertilization. First, no fertilizer should be placed in the planting hole. When the plants are set out in the fields, usually in April or early May, the fruit buds should be rubbed or pruned off. With no crop present and only a small area of soil requiring fertilizer, about 125 lbs/A of 10-10-10 is sufficient (1 1/2 oz./bush). Sidedressing with a fertilizing spreader will require higher rates to compensate for open areas between plants. Special caution should be observed as to the time of fertilizing after planting.

Fertilizer should not be applied until a second growth starts. For example, if plants are set out while dormant, do not fertilize while the first crop of leaves is unfolding and changing from light green to dark green, wait for new growth. Making the first field application too soon has frequently caused reddened foliage and a delay of several weeks in the starting of new growth. Keep the fertilizer at least 2 inches away from the crowns of the young plants. In late-June, the application of fertilizer is usually made.

Note: Never put leaves, chips, sawdust etc. in the planting hole unless it has been composted for at least 2 years. Fresh organic matter ties up all nutrients and starves the blueberry plants.

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

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PEST MANAGEMENT

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Dr. Janine Spies, IPM Agent – Fruit
Ms. Carrie Mansue, IPM Sr. Program Coordinator – Fruit

Scouting activity has been limited due to unfavorable weather conditions. Cranberry weevils should have been managed if populations exceeded treatment thresholds. We expect to have more scouting data available in the coming weeks as conditions improve.

Terrapin Scale Traps:

The terrapin scale (Fig. 1) is an occasional pest of tree fruits and ornamental shrubs in the eastern United States. This insect is characterized by a brownish protective covering, known as a derm, marked with radiating black bands that resemble a turtle shell. Terrapin scales feed on plant stems, extracting sap and reducing overall plant vigor. Their feeding also results in the production of honeydew, which can coat foliage and promote the growth of sooty mold. Female scales overwinter on stems and produce live young, called crawlers, in early summer. Management is most effective when timed to coincide with crawler emergence or through the application of dormant oil before bud break.
(For detailed scale management recommendations, visit:

https://njaes.rutgers.edu/pubs/publication.php?pid=E265).

Figure 1. Terrapin scale on blueberries. Photo Credit: C. Mansue.

As part of our Integrated Pest Management (IPM) program, traps have been deployed in areas with high terrapin scale activity. While crawler emergence has not yet been observed, activity is expected to begin around May. No treatment is currently necessary, but we are monitoring populations closely. Additional information on scale control strategies will be shared in upcoming articles.

Cranberry Fruitworm and Cherry Fruitworm Traps:

Traps were deployed during the week of March 28th, and to date, no captures have been recorded in either Atlantic or Burlington Counties. No treatment is recommended at this time.

Week Ending	CBFW AC		CBFW BC		CFW AC		CFW BC	
	AVG	HIGH	AVG	HIGH	AVG	HIGH	AVG	HIGH
4/3/25	0	0	0	0	0	0	0	0
4/11/25	0	0	0	0	0	0	0	0
CBFW = Cranberry Fruitworm, CFW = Cherry Fruitworm; AC = Atlantic County, BC = Burlington County								

Botrytis Blossom Blight in Highbush Blueberry

- *Ross Sousa, Graduate Assistant, Plant Biology*
- *Peter Oudemans, Extension Specialist in Blueberry and Cranberry Pathology*

Botrytis blossom blight, also referred to as twig blight or gray mold, is a fungal disease that can infect the twigs, leaves, blossoms, and berries of highbush blueberries. The common name of this disease is determined by the infection site and/or timing (i.e., twig blight refers to twig infections and gray mold refers to the color of post-harvest berry infections). Botrytis cinerea is the primary causal organism of Botrytis blossom blight in New Jersey, but infections can be less commonly caused by other species such as B. pseudocinerea. The host range of this pathogen is broad, including small berry crops such as raspberries, grapes, strawberries, vegetable crops and many ornamental plants.

Botrytis blossom blight is infrequent and unpredictable on blueberry in New Jersey, even though the pathogen is abundant. In other growing regions, this disease is more common, especially in the cooler, wetter growing regions where it is devastating if left uncontrolled. In New Jersey, the pathogen frequently affects strawberries and some cane fruits. As is the case with many fungal pathogens, climatic factors are closely associated with the severity of the disease.

Diagnosis

Symptoms of Botrytis blossom blight include dead, necrotic blossoms (Fig. 1A) that may cause water-soaked areas to form on berries (Fig. 1B). Under wet, cool conditions, the symptoms will expand to the entire flower cluster, killing the blossoms and calyx as well as the supporting stems (Fig 1A, C). Fruit can begin rotting before ripening, eventually causing necrotic, shriveled berries (Fig. 1C). The leaves will also develop brown lesions when infected blossoms drop on the leaf surface (Fig. 1D) whereas twig lesions develop when infections progress from infected blossoms back into the woody tissues. Grayish spores form in masses on the blossoms and calyces (Fig. 1E, F). Spores can be seen on the dying blossoms, calyx, and shriveled berries. *B. cinerea* also produce hardy, blackened structures called sclerotia that survive the winter season in soil or attached to plant stems (Fig. 1G).

Life Cycle

Spores of the fungus, *B. cinerea*, are introduced into the field at the beginning of each season in many ways. The pathogen can be introduced to blueberry fields from other crops via airborne spores. In a field that was previously infected, the pathogen may develop from overwintering structures. Dead plant debris and sclerotia can serve as an inoculum source and location for the pathogen to overwinter. Wet, foggy conditions with temperatures between 16 °C (61 °F) and 20 °C (68 °F) are ideal for infection to occur. Older, weak, or damaged tissue is more susceptible to infection than newer, healthy tissue. Blossoms are often the first part of the plants to be symptomatic, especially during seasons with poor or slow pollination.

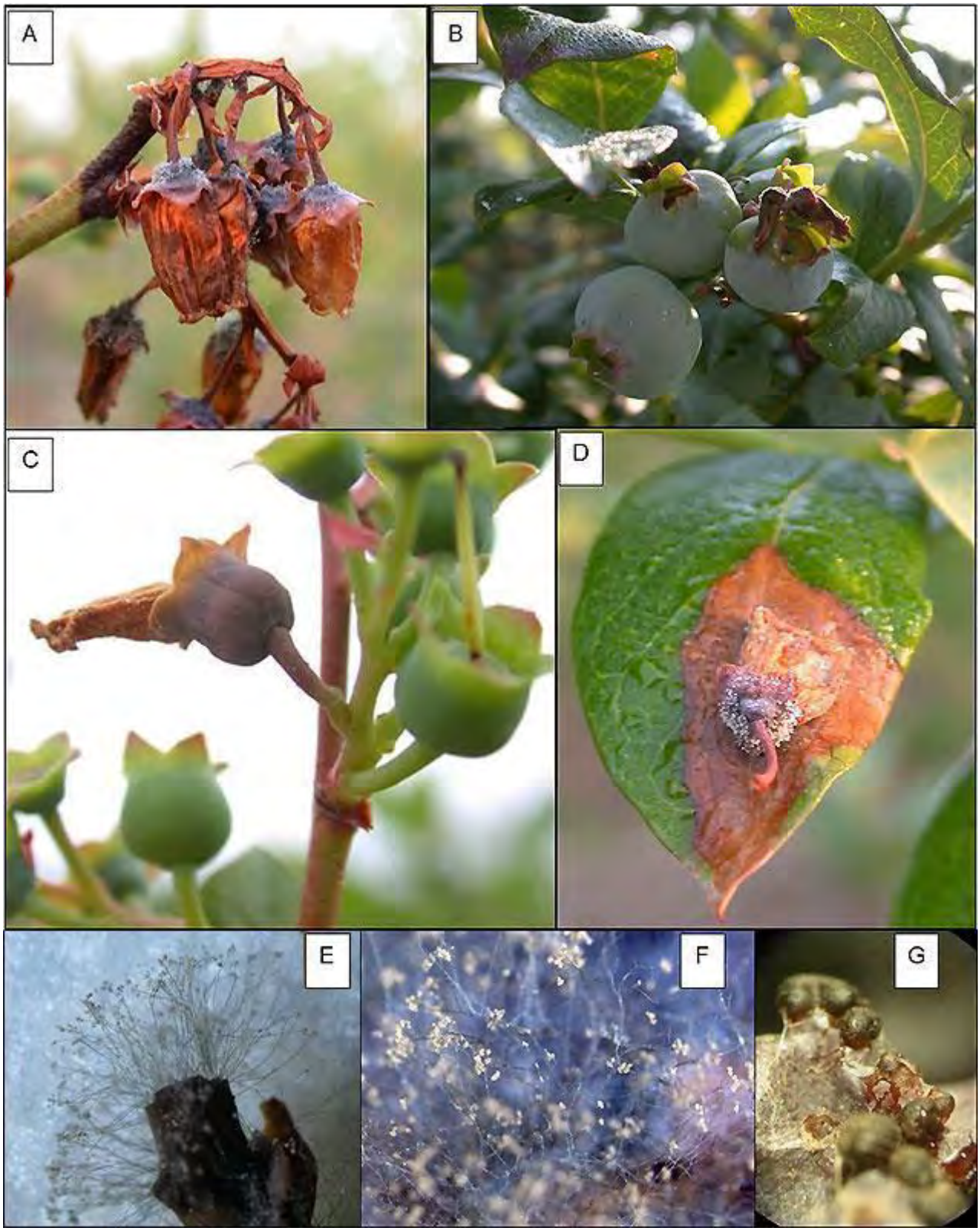


Figure 1. An array of symptoms caused by Botrytis infections on highbush blueberry. A) A necrotic twig and floral tissue as well as sporulation on the calyx. B) Blossoms infected with Botrytis blossom blight drooping on ripening berries, spreading the infection. C) Symptoms of a blossom infected with blight that will further develop on the berries, causing them to rot. D) An infected blossom that fell onto a leaf, leading to leaf lesions on the bush. E) B. cinerea sporulating on a blossom observed under a dissecting microscope. F) Characteristic spores and spore bearing structures. G) Sclerotia forming on a decomposed blossom.

Slow pollination occurs when conditions affect pollinator activity, such as rain or cold and following frost events that damage flowers. This results in senescing petals that remain attached to the plant. These petals are susceptible to infection and lead to berry infections (See Fig. 1). Conidiation, or the production of asexual spores, leads to the infection's further spread on other tissues such as twigs, leaves, and berries. These spores are spread naturally through wind or rain events, or by humans conducting various agricultural activities in the production area.

Predisposing Factors

In general, *B. cinerea* is a weak, opportunistic pathogen. It typically infects tissue that is already senescing or diseased, where it then spreads to healthier plant tissue. Despite its weak nature, there has been fungicide resistance discovered in multiple strains of *B. cinerea*, leading to difficulties managing the fungus. Additionally, *B. cinerea* is often prevalent as the spores are often airborne throughout the environment, including cropping systems and post-harvest conditions.

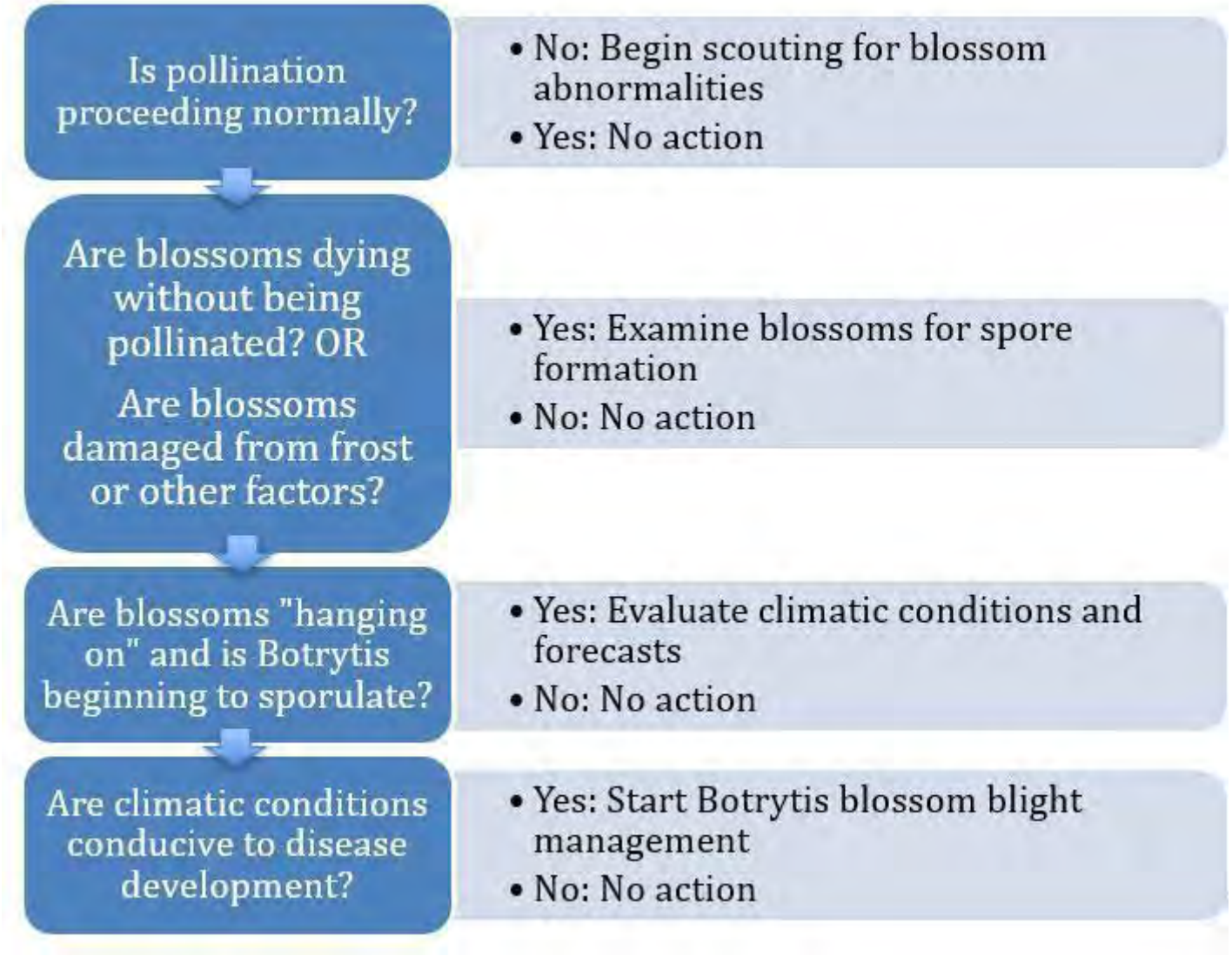
Figure 2. Frost damaged blossom susceptible to infection

A variety of factors can predispose highbush blueberries to Botrytis blossom blight. Frost damage can injure or kill emerging buds at the beginning of the growing seasons, leaving the tissue vulnerable to infection (Fig. 2). Water stress may also weaken plant defenses leading to greater incidences of *B. cinerea*. Phytotoxicity caused by pesticide applications may also lead to injured or dead tissue that is easily infected. As mentioned before, poor pollination can prolong the bloom period, causing older, senescing blooms still attached to the plant to become susceptible. Finally, pre-existing infections of other diseases such as Phomopsis canker and twig blight and blueberry scorch virus (BIScV) can leave highbush blueberries susceptible to other pathogens and encourage opportunistic co-infections of *B. cinerea* and the pre-existing pathogen.

Management

Fungicide applications are important in highbush blueberry production, however implementing cultural practices in a management program is an essential first step as fungicides can be expensive and not sustainable if solely relied on. When planting new fields, low lying areas are not ideal as they may experience longer frosts or fog. Row and plant spacing and pruning methods can affect plant ventilation between and within plants. These cultural methods can help reduce the risk of Botrytis by allowing bushes to dry out more quickly. Pruning out dead canes and twigs removes potential inoculum sources in the field.

Before applying fungicides, it is important to ask the following questions:



If no in-bloom fungicide applications were used and the climatic conditions are conducive, the risk of Botrytis blossom blight increases. For fungicide recommendations, refer to the current edition of the Commercial Blueberry Pest Control Recommendations for New Jersey.

References

- Blueberry (*Vaccinium corymbosum*)-Botrytis Blight. 2024. Pacific Northwest Handbooks.
- Delbridge, R., Hildebrand, P., Yarborough, D., and Annis, S. 2007, February. 212-Botrytis Blight Control for Wild Blueberries. University of Maine Cooperative Extension.
- Madeiras, A., and Schloemann, S. 2020, July. Blueberry IPM - Botrytis Blight/Gray Mold. Center for Agriculture, Food, and the Environment.
- Moorman, G. W. 2023. Botrytis or Gray Mold. PennState Extension.
- Schilder, A. 2015, May. Protect against blossom blights in blueberries. MSU Extension.

November 2024

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