

The Blueberry Bulletin

A Weekly Update to Growers

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BLUEBERRY CULTURE

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Atlantic County Agricultural Agent

I have gotten a lot of calls in the past few days due to the challenging weather we are experiencing. Growers have asked as what temperatures can they expect damage to the blueberry fruit buds and blooms. The information below should give growers some guidance. Farm visits this week have showed all levels of damage. The majority of fields are showing corolla browning but when I pull off the corolla the pistil is still green. This means that the flower can still be pollinated and produce fruit. However, there are fields where the pistil and ovary are damaged and in that case, no fruit will set.

Growth Stages

Dormant or tight bud



Plant part: Flower bud.
Description: No visible swelling of the fruit buds. Bud scales tightly closed. No visible signs of growth.

Bud swell



Plant part: Flower bud.
Description: First sign of growth as plant growth begins in the spring. Visible swelling of the flower buds; outer bud scales begin to separate at the tip revealing paler interior bud scales. **This bud stage can usually tolerate cold temperatures of 10 to 15°F (-12 to -9°C).**

Early green tip



Plant part: Leaf bud.
Description: Bud scales are separating at leaf bud tips. Green leaf tissue is emerging from the leaf bud tips. From 1/16 to 3/16 inch (2 to 5 mm) of green tissue is exposed. Leaves are tightly rolled.

Bud break or bud burst



Plant part: Flower bud.
Description: Flower buds open and the individual flowers can be seen between the bud scales. **Can tolerate cold temperatures of about 20°F (-7°C).**

Late green tip



Plant part: Leaf bud.
Description: Leaves are beginning to unfold. More green leaf tissue is visible, ¼ to ½ inch (6 – 13 mm). This stage generally occurs around flower bud burst.

Tight cluster



Plant part: Flower.
Description: Individual flowers are distinguishable in the flower cluster. **This bud stage can tolerate 20 to 23°F (-7 to -5°C).**

Shoot expansion



Plant part: Shoot expansion.
Description: Multiple leaves have emerged from the vegetative buds and unfolded. Leaves are enlarging and shoot growth has begun.

Early pink bud



Plant part: Flower.
Description: Expanding flowers are readily visible and have separated. The pink corolla tubes (petals) are short and closed. **This bud stage can tolerate 23 to 25°F (-5 to -4°C).**

Late pink bud



Plant part: Flower.
Description: Individual flowers fully developed. Expanded corollas are now white but still closed. **This bud stage can tolerate 24 to 27°F (-4.4 to -2.8°C).**

Early bloom



Plant part: Flower.
Description: Some of the corollas are completely expanded and open. Many flowers are still closed. **The bloom stages can tolerate 25 to 28°F (-4 to -2.2°C).**

Full bloom



Plant part: Flower.
Description: Most of the flowers on the bush have opened. **The bloom stages can tolerate 28°F (-2.2°C).**

Petal fall



Plant part: Flower.
Description: The corolla tubes are falling off the flowers, revealing small green fruit. This is the most vulnerable stage to freeze injury. **Damage can occur at 32°F (0°C).**

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

Leps and Other ‘Worm’ Larvae: Levels of leps have been minimal this week. We observed a few spanworms and green fruitworms, no treatments are needed.

Plum Curculio (PC): PC are out and will continue to be active during bloom. The first PC adult was found on **Wednesday 4/15**. During cool weather they will not be too active, therefore there has been very little activity. However, the bees haven’t been very active either because of the cool weather.



Cool Weather and Other Pests: The cool weather, especially when accompanied with rain makes ideal conditions for **Botrytis**. Try to include a **Botrytis** material when choosing your fungicide. Materials that are effective for both **Botrytis and Anthracnose** include Pristine, Switch, Ziram and Omega. Elevate is effective for Botrytis alone so would need to be combined with another material. See the article by Peter Oudemans and the 2020 Blueberry Production Guide for more information.

Photo taken by Carrie Denson on April 20th

Insect Incidence						
Week Ending	% Bud Feeding		CBW/Bush (Beating Tray)		Leps./Bush (Beating Tray)	PC/Bush (Beating Tray)
	Avg	Max	Avg	Max	Avg	Avg
3/27	12.8	40	0.68	8.3	.01	
4/3	0	0	0.8	7.6	0.0	
4/11	0	0	2.06	19.6	0.003	
4/18	-	-	-	-	0.01	
4/21	-	-	-	-	0.005	0.004

CBW = cranberry weevil; PC = plum curculio

Disease Management during a Novel Bloom Period

By Peter V. Oudemans, Ph.D.
Extension Specialist

There are no end to the surprises and challenges in the 2020 growing season so far. What is unique this year are the number of frost events and rainy weather that raises the threat of Botrytis as well as the unusual development patterns. Typically Duke and Bluecrop are pretty well synchronized in terms of bud break and flower initiation. Not this year! The Bluecrop are lagging behind and will likely be in full bloom sometime next week whereas the Dukes are moving along briskly and hopefully the bees can keep up.



Duke, April 22, 2020



Bluecrop, April 22, 2020

Disease Management in Bluecrop and later varieties. The most important stage of growth for anthracnose control is during bloom. Therefore with an extended or delayed bloom period it will be helpful to stretch out your fungicide applications to cover this period. Piling your applications at the beginning of bloom will potentially cost you disease control towards the end of bloom. Also, with the cooler climate we are experiencing, the anthracnose fungus is also moving a little slower. With the bluecrop pictured in the photo (above right) they would be ready for a second application by Monday. Keep in mind that development is very erratic and can vary greatly between fields depending on pruning methods, nutrition and microclimate therefore timing should be assessed for each location.

A word about fungicide choices. The standard choice of Ziram and Abound remains a solid program with proven efficacy. Inclusion of Botrytis fungicides such as Pristine or Switch are excellent substitutions for Abound. Omega is another material with excellent Anthracnose and Alternaria activity. Quadris Top, Quash and Proline will cover anthracnose and leaf drop but should be reserved for applications in early to mid-May.