

The Blueberry Bulletin

A Weekly Update to Growers

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- ❖ Visit the Blueberry Bulletin webpage at njaes.rutgers.edu/blueberry-bulletin
- ❖ The 2021 Commercial Blueberry Pest Control Recommendations for New Jersey is available at njaes.rutgers.edu/pubs/

BLUEBERRY CULTURE

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Pollination: Pollination is an important factor in production of the highbush blueberry. Lack of adequate pollination causes reduced yield, small berry size, and a delay in berry maturity. It is chiefly the honeybee which performs this task. While bumblebees are efficient and diligent pollinators (even under more adverse weather condition), their numbers are steadily decreasing.

According to MSU Entomologist, Dr. Roger Hoopingarner, "Historically, feral (wild) honey bee colonies have provided more than half of the pollination in Michigan." Wild bee populations are declining. This is due to changes in our own blueberry production practices which remove bee forage and suitable habitat, and there is the problem with mites.

Varroa and tracheal mites are killing wild and managed colonies in the U.S. The varroa mite has completely wiped out all of the wild colonies in Europe. It is certain that our dependence upon this population of bees will be reduced in the next few years.

What does this mean for blueberry producers? What happens when we lose the free pollination service provided by wild bees? You probably already know - more honey bees.

Weather during blossom time affects the honeybee's foraging efficiency. Honeybee activity increases as the temperature increases from 50 to 95°F. Sunshine also increases foraging, especially at lower temperatures. Cold, wet, windy weather decreases foraging activity. Temperatures above 95°F will also reduce foraging as the bees spend their time cooling the hive.

As a general rule, over-wintered colonies are stronger than package bees. A three-pound package may have 12,000 bees, while an over-wintered colony may contain two to three times as many. Honeybee colonies will be smaller in an early bloom year. In essence, the crop has developed faster than the development rate of the forager bees. Are honeybees the answer? Many of you have seen your bees fly out of the hive, past your bushes, and into the woods. This preference for one flower over another is not fully understood. It may be related to the quantity of nectar, pollen, sugar concentration, or

flower color. At this time, honeybees are the best bet. For the long term, we need to learn to cultivate the wild pollinators.

Take home message: Don't skimp on bees. The recommended concentration of hives per acre to use is tabulated below: Remember that the number of hives needed per acre depends on the variety you have.

VERY ATTRACTIVE TO BEES:

1 Hive/2 Acres:

- Rancocas
- June
- Rubel
- GN-87

MODERATELY ATTRACTIVE:

1 Hive/Acre:

- Weymouth
- Bluetta
- Blueray
- Pemberton
- Darrow
- Bluecrop*
- Duke

POOR ATTRACTIVE:

2 Hives/Acre:

- Stanley
- Concord
- Berkeley
- Coville
- 1316-A
- Elliott
- Jersey*
- Earliblue*

* Efficiency of pollination poor, add 1/2 hive more per acre.

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BLUEBERRY INSECT

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

Mr. Dean Polk, IPM Agent – Fruit

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The Table below shows the activity periods of 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.

	dormant	budbreak- prebloom	bloom	1 st post - pollination	later post- pollination	fruit maturation	post-harvest
Scale	█			█			
Cranberry weevil		█					
Leafrollers		█	█	█	█	█	
Spanworms		█	█	█			
Gypsy moth		█	█	█			
Thrips			█	█	█		
Gall midge			█	█	█		
Plum curculio			█	█	█		
Cranberry fruitworm				█	█		
Aphids				█	█	█	█
Leafhoppers				█	█	█	█
Leafminers				█	█	█	
Oriental beetle					█	█	█
Blueberry maggot					█	█	█
Spotted wing drosophila					█	█	█
Japanese beetle						█	█
BB bud mite							█



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

Cranberry Weevil (CBW) - This is the main pest of concern at this time of the year. We have started to see the start of CBW over this past week. Last week the high count was 2 weevils per bush and by the start of this week it has increased to 9.3 weevils per bush. Average counts also increased from .21 adults per bush last week to .95 adults per bush this week. Since the treatment level is set at 5 adults per bush, some growers need to treat now where levels are high.

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 cluster with feeding injury (i.e., at least 1 injury/puncture per 5 clusters (see Picture 2). Asana, Avaunt, Imidan, or Mustang Max are recommended for cranberry weevil control.



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