RUTGERS
New Jersey Agricultural
Experiment Station

The Blueberry Bulletin

A Weekly Update to Growers

May 2, 2019 Vol. 35, No. 3

AT A GLANCE…

BLUEBERRY GROWER TWILIGHT MEETING

Thursday, May 30, 2019 @ 5:30 p.m.
Atlantic Blueberry Company
7201 Weymouth Rd.
Mays Landing, NJ 08330
For directions call 609-561-0612

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

BLUEBERRY CULTURE

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

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 honey bee which performs this task. While bumble bees 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.

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.

Blueberries have a tremendous number of blossoms per acre. A single bush may have 2,000 to 3,000 blossoms. At a planting density of 870 bushes per acre, that's 1.75 to 2.6 million flowers! Large-block single-variety plantings make it essential that high numbers of pollinators be available at one time.
The number of colonies needed per acre is determined by weather during the bloom period, colony size, variety, and blossom density per acre.

Weather during blossom time affects the honey bee's foraging efficiency. Honey bee 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. Honey bee 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 honey bees the answer? Many of you have seen your bees fly out of the hive, past your 'Duke' bushes, and over to your neighbor's 'Bluecrop' field. This preference for one variety over another is not fully understood. It may be related to the quantity of nectar, pollen, sugar concentration, or flower color. At this time, honey bees are the best bet. For the long term, we need to learn to cultivate the wild pollinators.

The recommended concentration of hives per acre to use are tabulated below: Remember that the number of hives needed per acre depends on the variety you have.

Sincerely,

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

Blueberry Bulletin Editor

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.**

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

Plum Curculio (PC) - PC adult (see Figure 1 on next page) counts have increased from last week. We are capturing PC in both organic and conventional fields. During the past week, all captures were found in Atlantic County. This week's average for PC were 0.06 per bush with a max of 1.5 per bush. There is nothing anybody can do for this insect until the bees are out. Scouting does give you an idea about where the

highest populations are, and where can be concentrated when insecticides start up again.

Leafroller (LR) – Counts of leafroller larvae and other Leps (Lepidopteran pests – moths and butterflies) increased over the past week. In addition to leafroller larvae, we see a number of spanworms and green fruitworm larvae.

Average counts were .02 larvae per bush with a maximum of .5 larvae per bush. This is well below the treatment threshold of 1 larva per bush.

Sawfly larvae are also present in a few fields. A sawfly is a type of wasp and not related to moths and butterflies. Therefore, the materials that can be used during bloom to target moth and butterfly larvae, such as various B.t.s and Intrepid, DO NOT WORK on sawfly larvae. Sawfly larvae are rarely an economic pest, and feed mostly on foliage rather than on flowers and developing fruit. Even if numbers were high in an isolated field, there is nothing that can be applied until the bees are out.

Phomopsis – During the past week, a number of fields showed symptoms of developing Phomopsis cankers (see Figure 2 below). Numbers are low, with average was 0.02% of terminals infected, and a maximum of 1% of terminals infected per bush.

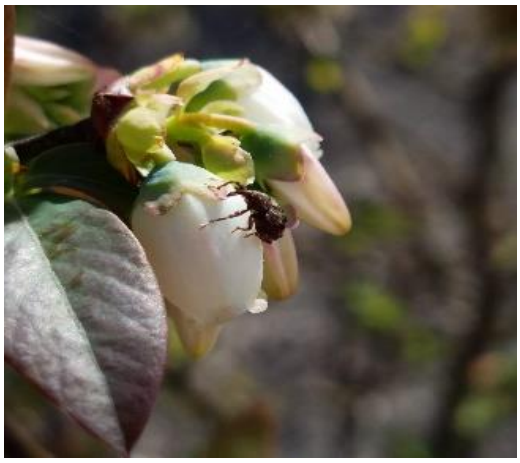

Figure 1. Plum curculio adult. Photo: Carrie Denson

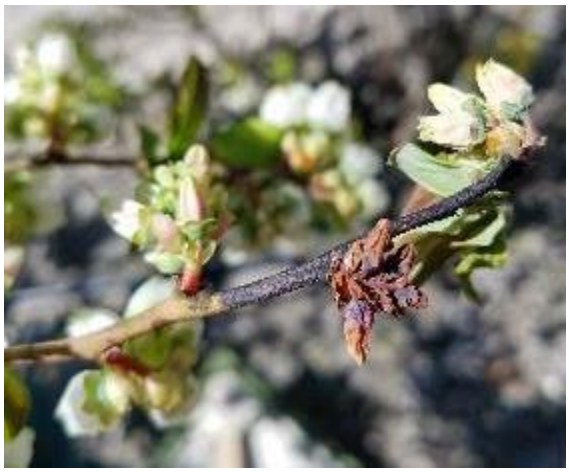

Figure 2. Phomopsis symptoms. Photo: Carrie Denson