

The Blueberry Bulletin

A Weekly Update to Growers

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BLUEBERRY CULTURE

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It appears that our challenging weather is continuing. This weekend, May 9-10 may result in another frost event. Growers realize that there is not much they can do to protect the flowers at bloom time unless there are overhead sprinklers in the field. Even with this form of irrigation it must be stated that the sprinklers should not be turned off just because the temperature has risen about 32 degrees. It has been found that it is less harmful to the blooms to keep the sprinklers going until all the ice has melted.

I do want to make a few comments on practices that influence damage. First of all, if the field is irrigated the morning before the frost it has been found that the soil moisture retains some heat resulting in less damage. This is true even if the irrigation is of the trickle type. Also, it is

important to not cultivate between the rows. Cultivating reduces soil heat accumulation during the day and enhances heat loss at night.

Questions have been asked about sprayable (fertilizers, sugars, pesticides) to help avoid frost damage. My experience is that the results have been extremely inconsistent. Lastly, during a radiation freeze, the air is stratified (cold air close to the ground, warm air aloft) so there is a greater probability that freeze mitigation techniques may be effective. During such a freeze, helicopters can be used to mix warmer above –ground air with cold air, thus raising the temperature above bloom-injuring levels. Heaters are generally considered to be too expensive due to high fuel costs and there is a danger of environmental contamination through the spillage of fuel and air pollution.

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 have seen just a few spanworm and green fruitworm larvae, no treatments are needed. Small (about ½” long) Gypsy moth larvae are also present in a few places, having been blown in by recent winds. These are also not an issue to be

concerned about at this time. As you look around your farm and, on the roadside, you may see well-structured silken tents in the branch crotches of wild shrubs and small trees. These are from the eastern tent caterpillar. We have not seen these in blueberry fields yet, but as the days go by you should be aware of these

possibly moving into fields as they consume the foliage on the trees where they hatched.

Plum Curculio (PC): PC activity is starting to increase slightly, most likely due to slightly warmer temperatures. As long as there is bloom and bees are present, PC cannot be treated. Once the berries are fertilized and begin to swell, fresh egg scars should start to become visible (Figure 1). Check your field edges first to get an idea where hot spots are likely to occur and prioritize your first insecticide sprays after the bees come out.



Figure 1. Plum curculio adult and oviposition scar. Photo – Dean Polk.

Botrytis, Phomopsis and Mummy Berry Strikes: Very little disease has been seen. Botrytis is present (Figure 2), but the highest levels seen have only been a few clusters on .5% of plants examined. Nevertheless, this disease can spread fast if given cool wet conditions like we are supposed to have later this week. See suggested fungicides in the Blueberry Production Guide.



Figure 2. Botrytis infection developing on blossoms. Photo - Carrie Denson.

Insect Incidence							
Week Ending	CBW - % Bud Feeding		CBW/Bush (Beating Tray)		Leps./Bush (Beating Tray)	PC/Bush (Beating Tray)	Gypsy Moth/Bush (Beating Tray)
	Avg	Max	Avg	Max	Avg	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	
4/28	-	-	-	-	0.007	0.002	
5/4					0.013	0.022	0.001

Key: CBW= Cranberry Weevil, PC= Plum Curculio

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Diseases

Peter V. Oudemans

Extension Specialist, Plant Pathology

Following the frost events of the past few weeks there has been significant concern regarding the viability of the developing fruit. One symptom that has been getting some attention is a red ring around the calyx end of the receptacle (see photo on the right). This symptom in its most severe state (and as pictured here) results in dead ovules and a fruit that will likely drop. After some discussions it is possible that treatment with gibberellin may allow this fruit to set (with the limitations discussed last week).



Three fruit are pictured on the left. The top row shows the calyx end with the style and corolla removed. The amount of reddening is obvious in these photos. All of these flowers were considered damaged although to different degrees. The bottom row shows the stem end of the receptacle of the same three fruit with the base removed (cut away). Only the middle fruit is damaged to the point that it will drop while the two outside fruit will likely succeed.



This photo serves as a reminder of the path for infection of anthracnose and should help as a guide when optimizing spray rigs. First of all this flower was collected about 10-days ago and held in a moist container to promote fungal growth. The anthracnose fungus is seen here as small orange to yellow droplets which are basically concentrated mounds of spores. The fungus had overwintered in the bud scales and then migrated down the pedicel and on to the receptacle. You may remember Tim Wallers research showing how floral components can stimulate infection and that is quite obvious here. The goal of a spray program is to prevent the migration down the pedicel and to protect the stem end of the receptacle. So spray applications that protect that surface will be most effective.



Botrytis infections are being observed albeit at low levels. The next stage will be development of Botrytis infected fruit. Shown here are purple fruit within a cluster that became infected with this fungus. Treatments at this time cannot reverse the infection and symptomatic fruit will likely drop before harvest.

Scout for floral infections since the disease can be controlled at that stage.



Be on the look out for scorch infected plants. These should be removed after you are certain they are infected. The IPM group is not reported aphids and so transmission rates will be low and bush removal can be a moderate priority. Mark the bushes with flagging tape since the disease is not as apparent after flowering. It is easy to misdiagnose scorch and other diseases such as phomopsis and if you are uncertain tests for the virus are available.



Mummyberry primary infections are visible now and with a significant amount of unopened flowers and good bee activity there is plenty of potential for spread. Since honeybees are one of the most important vectors of this disease and they move freely between farms and native habitats primary infections from "off-site" can provide inoculum. This disease is quite localized and it is likely that it will only be a problem where it has been observed in previous years.



Leaf drop season is just around the corner. As of earlier this week spore release was not seen. Stay tuned and if you had this disease in 2018 or 2019 you should consider treating in 2020