The opportunity to spray fungicides for control of fruit rot diseases this year is past. Infections that lead to fruit rot occur mostly during bloom and early fruit set stages. However, we did not have an early spring in 2011, and conditions have generally been cool to normal and not excessively wet. In other words, this year so far has been quite different from last year when fruit rot was rampant.

Nevertheless, we are not out of the woods yet. Early rot, caused by the fungus, *Phylllosticta vaccinii*, has emerged as a problem in young plantings over the past 4 to 5 years. It is not the major fruit rot pathogen in Wisconsin, but because it is found more on newer varieties and can cause significant leaf drop; you should become familiar with the symptoms. Included with this newsletter is an early rot fact sheet with photos. The leaf symptoms generally show up in late July through August. The fruit rot shows up starting about mid-August. However, despite the photo in the fact sheet, it is really hard to identify early rot based on fruit rot symptoms. The leaf spots are a much more reliable symptom for identification in the field. For a positive ID, you should submit samples to the Plant Disease Diagnostic Clinic, 1630 Linden Dr., Madison, WI 53706.

If you do find symptoms, what should you do? As mentioned above, fungicides used after mid July will NOT prevent fruit rot. In non-bearing beds where nitrogen-fed shoots are still putting out new growth, fungicides might prevent further infection of leaves in late summer, but this has not been documented by research. Of course, fungicides will not eradicate this pathogen; it will still overwinter in vines. For the early rot pathogen, the fungicides likely to be most effective are chlorothalonil (e.g., Bravo, Echo, Equus) and fenbuconazole (Indar). Research from New Jersey suggests that azoxystrobin (Abound) is not effective on early rot. Because succulent new growth is susceptible, these beds should not be treated with further nitrogen in 2011.
What is early rot of cranberry? Early Rot is a cranberry disease that causes leaf spots, premature leaf drop, and fruit rot. Early rot is caused by the fungus *Phyllosticta vaccinii*.

Left: Early rot symptoms in a new planting in September. Leaf spots are tan to brown and sometimes have dark red margins. By late summer, significant leaf drop can occur.

Above Right: Leaves from plant at left. Tiny black pycnidia (fungal fruiting bodies) form within spots on the upper surface of the leaves.

Early rot on fruit appears as a soft, watery spot, usually with distinct margins. The spot is often lighter in color than the rest of the berry. Dark, concentric rings sometimes form, resembling a bull’s eye.
Why scout for early rot? Early rot can be severe in some cranberry growing regions of the U.S., requiring the use of fungicides to control the disease. Fortunately, early rot is rare in Wisconsin. Nevertheless, since 2005, this disease has been detected in young plantings at several sites in Wisconsin.

What should growers do? Growers should become familiar with early rot and report suspicious symptoms to their crop consultant or to Patricia McManus, Professor and Extension Plant Pathologist, University of Wisconsin-Madison, (608) 265-2047, psm@plantpath.wisc.edu.

How can you distinguish early rot from other diseases? The fruit rot phase of early rot is often difficult to distinguish from other cranberry fruit rot diseases. However, early rot appears on berries as early as late July, whereas most other types of rot appear in September in Wisconsin. Some other leaf spot diseases and how to distinguish them from early rot are described below.

**End rot.** Symptoms on leaves are rare but very similar to early rot symptoms. Older lesions turn gray. Positive diagnosis requires microscopy.

**Brown leaf.** The cause is not known. Leaves turn brown starting in June. Sometimes just one half of a leaf is affected.

**Red leaf spot.** Bright red spots with yellow borders appear in July. Diseased leaves (right) are sometimes shorter and rounder than healthy leaves (left). Spots turn black later in the summer.

**Cladosporium leaf spot.** Small brown lesions on previous season’s leaves. Spots have white or gray centers.

**Protoventuria leaf spot.** Gray to black circular spots with bull’s eye pattern appear on previous season’s leaves.
Yellowing vines are showing up across Wisconsin once again. Drought stress/Heat stress has become an issue in most counties. Sprinkler coverage in windy conditions has been a major factor in some of this stress. Remember that we can check up the water in our ditches to assist in preventing some of this. Some growers have taken a spray tank and watered the windy side of the beds during that 4-day stretch. Once roots are hurt it is tough to regain plant health in one given season so please be ever watchful.

Wisconsin has had one BEAUTIFUL bloom. One grower told me most recently that, “This is the time of the year that we have the MOST potential.” It is true! What happens from bloom to set is a critical time. This season the bees are working exceptionally well as we have had ideal weather for pollinating. Fertilizers are going on in a timely fashion to assist the set. But with all that said, remember that there is a lot of growing season left and we all will have to wait and see just what happens to that “potential”.

Those of you dealing with BFW should have had your control measures in place this past week. This 2nd generation larvae always hatch out during bloom so we used growth regulators (Confirm or Intrepid) to control the pest as these products do not hurt our pollinators. So far I am very pleased with the lack of insect pressure after the application.

We are slipping into CFW (Cranberry Fruitworm) control time so I would like to take this opportunity to remind you to keep the lines of communication open. Let your close neighbors know that you are treating, post at all entrances, talk to your employees, and let your scouts know when you are applying chemicals. There are REI (Re-entry Intervals) that we all have to be aware of. This week we found our 1st CFW working the fruit on the edge of a bed. Confirm or Intrepid can be used at 50% out of bloom but once those bees are gone most of you will be using a harsher control.

Tis the season!!!!!
Insects are usually known by their common names instead of their scientific Latin names. These common names are easier to remember and much easier to pronounce but they are sometimes misleading. Here are some clarifications about a few common misconceptions that result from common names. Just because the words “fly” or “bug” are in the common name doesn’t mean that the insect is indeed a fly or bug. True flies only have one pair of wings where basically all other insects have two pairs of wings. The true bugs will have sucking mouthparts much like a long straw that pierces their food. Some flies, such as mosquitoes, have straw-like mouthparts; however, they have only one pair of wings so they are true flies.

“Fly” examples:
Firefly – is actually a beetle
Butterfly – is actually from the order Lepidoptera
Crane fly – is a true fly
Mayfly – is actually from the order Ephemeroptera
Caddisfly – is actually from the order Trichoptera

“Bug” examples:
Ladybug – is actually a beetle
Bed bug – is a true bug
Giant water bug – is a true bug

Mayflies (Ephemeroptera) as adults hold their wings together above their body when at rest. With fragile legs, thread-like tails, transparent wings and non-functioning mouthparts the adults only live a few days. Not having to waste time on eating they focus all energy on mating. Sometimes large mating swarms and mass emergences of adults can become a nuisance to humans. The air becomes thick with flying adults and the ground littered with the dead mayflies but otherwise they are not harmful. The immatures, sometimes known as wiggles to anglers, have gills along their abdomen to breathe underwater where, in some species, the immature will live for up to three years before becoming an adult. The bodies of mayfly immatures are highly variable and depend on what sort of body of water they are living in. They all have three tails and nearly all eat algae and detritus, the organic matter such as fallen leaves at the bottom of the water. The presence or absence of mayfly immatures can be an indicator of stream or water health. This is why fly fishermen model their flies after mayflies, because much like trout, mayflies for the most part cannot tolerate much pollution and so are often found living in the same streams.

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**Fireflies (Coleoptera: Lampyridae)** are not really flies, they are beetles. Their shell is not incredibly hard, more of a leathery texture and the species we are finding in the beds have a black color with reddish pink stripes on its pronotum (the plate that covers its head). The diet of adult fireflies varies; some can be predatory while others feed on nectar and pollen. This pollination could be one of the benefits these beetles provide for your cranberry vines. The easiest way to find fireflies is to wait until dusk or early evening and watch for their unique glowing. Not all the beetles in this family produce light; but the ones that do, produce it at the end of their abdomen and it is used primarily for attracting mates. As immatures, fireflies are predacious and prefer damp environment, hence, why they are found around cranberry marshes. They are semi-flattened armored looking creatures not resembling the adults at all.

The males survive on pollen and nectar but both sexes are often found around a body of water. The reason being, their larvae are aquatic. The larvae are maggot-like, cylindrical and tapering off at each end. They often have bumps along their body and can be a variety of colors depending on the species. Because they have to breathe atmospheric oxygen rather than taking up oxygen from the water they are restricted to shallow water and stay near the surface. While in the larval stage these flies are mostly predacious but some are plant feeders. Overall not known to be a pest to cranberry, just an annoyance to humans.

**Deer flies/horse flies (Diptera: Tabanidae)** are the infamous large flies that will relentlessly buzz around your head and deliver a painful and itchy bite if they get a chance. Only the females of this family bite because they need to have a blood meal for their eggs to mature.

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Caddisflies (Trichoptera) are very abundant on marshes as well as any other area near a body of water. The adults vary greatly in size and color but all will hold their wings in a characteristic tent-like fashion over their body. These creatures could be confused for moths, both usually having a dull coloration; however, their wings bear hairs instead of scales like a moth’s and caddisflies will have much longer antennae. The adults will do little to no feeding. Often their mouthparts are reduced to the point of being unusable. The larvae live in water, breathing through their abdominal gills. Some species of caddisfly larvae build themselves cases from material found in the water. One might not even realize there is a caterpillar like animal living in the case it is so well disguised. Depending on the species the larvae eat anything from plant material, to algae, to other invertebrates. This group is a normal part of most aquatic ecosystems, and doubtfully, will ever be considered a pest to cranberry.

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