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LEAF DROP

I have observed and many growers have noted significant leaf drop on some beds, particularly on the bed edges. Grower experience suggests that this is from too little oxygen during the winter months. I don't know of any scientific research that supports or refutes these observations. Leaf drop makes many growers uncomfortable. However, other research suggests that the old leaves provide little net carbon gain to cranberry vines. Three research projects support this view.

Several years ago we measured the rate of photosynthesis on current season growth and one-year-old leaves. We found that the one-year-old leaves had a rate of photosynthesis roughly half that of current season leaves. While these old leaves became photosynthetically competent earlier in the season, the rate of photosynthesis declined rapidly as the season progressed and as new leaves shaded them. Thus, their net contribution was still FAR less than current season growth.

In a second research project we fed new or old leaves radioactive carbon dioxide and then followed where the radioactivity (and thus the carbon as sugars) ended up. We found roughly 1000 times more carbon in the fruit from new growth than from old leaves. Most of the radioactive carbon given to the old leaves remained in those leaves. Clearly fruit growth is supported primarily (almost exclusively) by current season growth not by old leaves. We also fed labeled carbon to leaves on uprights adjacent to fruiting uprights along a given runner and found that almost no carbon moved from one upright to another.

In another experiment we removed either new growth, old leaves, both or no leaves from individual uprights at fruit set. We came back at harvest and looked at fruit set. We found that removing the old leaves had no effect on fruit set or the number of fruit, but removing the current season growth significantly reduced fruit set and yield. We did the same thing about two weeks later and found the same result, although the differences were not as large. This research also supports the notion that old leaves are not very important to fruit set or yield, but current season growth is very important.

What does this mean for you? As long as the buds survived and are swelling and growing the loss of old leaves is not very important. Areas with leaf drop may look horrible, but there is no reason that they should not produce a full crop just like areas that retained leaves.

Teryl Roper, UW-Madison Extension Horticulturist

POSTING REQUIREMENTS FOR PESTICIDE APPLICATIONS

Both federal and state laws require that land be posted following pesticide applications. Besides needing to comply with the law, it is also important to post to protect yourself, your employees and perhaps most importantly crop scouts. You and your employees may know where pesticides have been applied, but people coming onto your property to scout or to do research probably won't know if a pesticide was applied unless you tell them and have signs posted.

The state codes are quite clear on the posting requirements. The full regulations can be found in ATCP 29. http://www.legis.state.wi.us/rsb/code/index.html

Who is responsible to see warning signs are placed? The owner or manager, the pesticide applicator, and the pesticide applicators employee, if any. All may be held liable if proper posting is not in place.

Warning signs must be located at normal points of access to the site and at ¼ mile intervals along borders of a site that lie within 300 feet of a residence, day care facility, health care facility, commercial or industrial facility, public recreation area or other non-agricultural areas except a public road, where people are likely to be present during the label specified restricted entry interval (REI).

Signs required under the Worker Protection Standard must be covered or removed not more than 3 days following expiration of the REI, unless required for a subsequent application.

Posting protects you and your employees or contractors.

Teryl Roper, UW-Madison, Extension Horticulturist

SPANWORMS AND LOOPERS

Over the years we have found ourselves slipping into a convenient mode—categorizing all spanworms and loopers into one grouping, but really they are different. Spanworms and loopers have an unusual way of getting around. They stretch to full length, and take hold with the front legs and then bring forward the hind end close to the front pairs of legs; the body between bends up like a loop. These are named because of the SPAN between legs and because of their means of traveling (looping). There is only one generation of these intruders per year.

Here are descriptions of a few loopers & spanworms Wisconsin IPM consultants have observed since the early 1990's.

Spiney looper—½ wing looper (alias Pittsville looper

When this pest is young it is very tiny, but mature it is 1 ½ inches + long. Grey in color with definite yellow/gold spots along its sides. It will eat all new growth buds, leaves, hooks and blossoms. The female is wingless, thus all eggs are laid in a small area. Economic thresholds are only 3-5 in a series of 20 sweeps. Can be found on page 31 of *Cranberry Insects of the Northeast.*

Tractor Tread

This pest is yellow or pinkish in color with a red herringbone stripe along its back (similar to a tractor tread). We see the most damage from this critter during hood and bloom time. Thresholds have been high (8-10 per series of 20 sweeps). The tractor tread is an easy target for birds because of its color.

Big Cranberry Spanworm
Dark brown to almost black in color, mature larvae have distinct tubercles on dorsum of fifth abdominal segment and reaches 2 to 2.5 inches in length. Feeds on hooks and blossoms. As most spanworms this pest is an early spring intruder, but can be seen hanging around right around July if not controlled early. Thresholds are 8-12 in a series of sweeps.

Chain Spotted Geometer
The larvae are yellow with very distinct black spots on the head, and the outer sides of the prolegs, easily identified in the field. As most spanworms this pest plays like a stick when not feeding. It will hang on an upright upside-down—head downward—during the daylight hours and then feed late in the day and evening hours. This fella is not specific in what it eats, will eat any part of a cranberry plant. Thresholds are 8-10 in a series of 20 sweeps.

Green Spanworm
An early emerging pest, yet prolonged intruder, can still be found on the marshes in late June and early July if left untreated. They are ravenous eaters, devouring buds, blossoms, and when they are in large numbers we have observed brown areas where they have eaten down to the previous year's growth. This larva is green with several white lines along the back and sides plus there is a light yellow stripe along each side. The economic thresholds that I have used are 12-15 larvae in a series of 20 sweeps.

False Crocus Geometer
This pest is very similar to the green spanworm but lighter green in color. It likes hooks and blossoms and then it seems that they pupate and fall to the bed floor. We find some on the marshes but very sporadic activity, and thus far I have not found a need to spot treat this critter. I don't know what the threshold should be, if any.

Jayne Sojka, Lady Bug IPM

PENNY WISE & POUND FOOLISH

Today more than ever we need to get the Bang for our Buck! I truly believe that the first insecticide application of the spring is the most important application of the year. Let's walk through some thoughts that are worth dwelling on so we will not have to make a quick repeat application.

a. Timing your insecticide application is the most important task at hand. Too early will result in multiple applications, too late may allow pests to pupate and fall to the bed floor.
b. Calibrate your sprayer and check it over thoroughly.
c. Application rates and mixes need to be carefully checked. Don't fill the entire tank with water and then put in chemical because you won't get a good mix.
d. pH is important. If you need a chart of the half life of our products just ask. Reminder: Orthene pH of 9 (day ½ life) pH of 5 (55 day ½ life); Diazinon pH of 7 is 10 week ½ life but a pH of 5 has a 2 week ½ life. Vinegar is a very inexpensive additive.
e. Remember that the boom may have water it its lines. When you begin an application make sure you are applying product, not just water.
f. Make sure the ends and edges are covered so you do not leave a breeding ground uncontrolled.

Distribution of product is vital to control. Go all the way to the ends before shutting off the boom.

g. Use the right chemical for your target pest. (If you are treating girdler don't use Sevin XLR).
h. If the weather is questionable use a product that is not temperature sensitive. Or if rain is in the immediate forecast don't take the chance of getting your chemical washed off.

Jayne Sojka, Lady Bug IPM

The real question is not whether machines think, but whether men do

B.F. Skinner

NEW HORTICULTURIST HIRED AT UW-MADISON

Dr. Kevin Kosola has recently been hired for the fruit crops teaching and research position in the Dept. of Horticulture at UW-Madison. Dr. Kosola comes to us from the Kellogg Biological Station at Michigan State University. His graduate work was in vegetable crops at the University of California at Davis. Since then he has worked with citrus in Florida and forest crops in Michigan. We welcome him to the cranberry industry and to Wisconsin.

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