Integrated Cranberry Crop Management for Wisconsin

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Cranberry

Crop Management Newsletter

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MANAGE OR MANIPULATE

These two words: manage and manipulate conjure up very different mental images. Webster defines manage as "to handle or direct with a degree of skill". On the other hand, Webster defines manipulate as "to control or play upon by artful, unfair, or insidious means." Both words are derived from the Latin word *manus*, meaning hand. You may ask what this has to do with horticulture or raising cranberries. These two words may describe two different approaches or paradigms about applying fertilizer to cranberries. In this article I'll try to describe how the two approaches differ and problems I see with each.

In my view the manipulative approach involves frequent application of some sort of fertilizer product. In this approach it is not uncommon for fertilizer to be applied weekly or twice weekly. Nitrogen applications in the short run may exceed plant requirements and when vines respond to the nitrogen by runnering attempts are made to reduce vine growth by making substantial applications of potassium chloride (muriate of potash)—or in some cases an illegal application of an herbicide—that will injure the roots and stop uptake of further nitrogen and supposedly reduce the rate of plant growth.

Management, on the other hand, is providing just enough of essential plant nutrients at about the right time during the season so that plants are never deficient such that normal growth would be limited. This usually requires somewhere between six and eight applications of fertilizer a year.

The manipulate approach sees soil as only a matrix that physically supports plants. It does not have the ability to retain or provide nutrients for more than perhaps a few hours after application. The management approach understands that soils are dynamic entities that retain and release plant nutrients over an extended period of time and recognizes substantial biological activity occurring in soils.

Folks in the manipulate camp see human intervention as absolutely essential for cranberry vines to grow and fruit. The

management viewpoint remembers that cranberries grew for eons without human intervention and were even able to spread into appropriate sites throughout northeastern North America.

Manipulators believe that doing something is superior to doing nothing—regardless of the cost. Managers believe that an activity is justified only if the benefit exceeds the cost; in both the short and long term.

Manipulators want populations of cranberry pests to be zero. They want pesticides to immediately kill pests dead in their tracks. Managers want cranberry pest populations to be below economic injury level. They know they can patiently await pesticide action because they will still be below injury thresholds.

Manipulators try to impose their will on cranberry vines—to have them grow and stop growing based on human will and not on environmental cues or vine genetics. Managers recognize the genetic limitations of various cultivars and try to work with them to optimize their performance within existing limitations. Manipulators seek to maximize. Managers seek to optimize.

I have concerns about the manipulative approach to cranberry production where mineral nutrition is concerned. Applying one fertilizer and then counteracting plant response with another seems counterproductive. There is an environmental cost anytime a fertilizer is released into the environment. The energy used to produce, ship, and apply the fertilizer has environmental as well as economic costs.

In reality cranberry growers are usually neither fully manipulators nor managers. We all fall on a continuum between the two extremes. Perhaps I have exaggerated each approach to make a point. What is the point? Understanding how plants grow and how soils provide nutrients can help us make better decisions about nutrition and fertility. When we understand the underlying principles we can work in concert with nature to produce the best possible crop. When we don't understand how plants grow and how soils provide nutrients we fret and "wander to and fro" feeling we need to 'do something'.

In my Extension programming I have tried to teach the principles of plant growth and then trust growers to make good decisions rather than trying to establish rules and teach recipes for fertilizer application. I think the former approach is superior to the latter. As you make decisions about fertilizer application think about what is going to happen to the fertilizer once it reaches the soil and how it is going to get into the plant and then to the place in the plant where it will be used. Doing so will help you make the best possible decision.

Teryl Roper, UW-Madison Extension Horticulturist

Tipworm Reminder

During our farm visits on July 7, I had a couple of questions regarding tipworm. I brought several terminals from one location back to my lab for microscopic examination. It appears that we are between generations (probably between 1st and 2nd generations).

Many of the terminals examined were damaged, but without occupants. Some terminals had late instar larvae and pupae; a few had eggs.

The questions posed regarded the cool weather, and the possibility of damage to next season's crop. Remember that plants compensate to tipworm injury by producing one or more lateral buds. Research has shown that, in the central part of the state, in years with "normal" temperatures, these new stems will successfully mature to produce flower buds for the following year, and the crop will not be affected. However, in the northern part of the state, where the growing season is often shorter (fewer heat units), the new stems may set vegetative rather than fruiting buds for the following year, resulting in reduced yield. Observations suggest that this may also occur in the central part of the state if we have an unusually cool summer. Unfortunately, we can't predict the weather very well, especially what will occur over the next three months. But chances are that warm weather will come, and the plants will compensate for tipworm injury by producing fruiting buds for next year. In other words, unless your tipworm populations are very high, it is probably not justified to treat them at this time. Continued monitoring of the population is warranted, however.

Dan Mahr, UW-Madison Extension Entomologist

Everyone who moves restlessly from place to place and from pleasure to pleasure must finally face this fact: Here I am with myself on my hands.

Richard L. Evans

STEM GALL SIGHTINGS

Recently I saw some unusual cases of cranberry stem gall at two locations in central Wisconsin. Although the dieback of shoots looks the same as what we've seen in past years, the galls themselves are quite small and not at all obvious. In past years, most notably 1998 and 2002, by the time we'd notice shoots browning and dying, we would see large, unmistakable galls encircling the stem. I do not know if what I've seen this year is just the early stages and galls are small because they're just getting started, or if it's just a mild form of stem gall that will not get much worse. In these same areas we see vines dying back with no visible galls, so it could be that something else entirely is killing uprights. In the past I thought stem gall was just a year-by-year phenomenon, with symptoms being severe one year and absent the next. However, this year we're seeing these smallish galls on stems in the same areas of beds that had severe stem gall last year. So, it may be that stem gall is more perennial, rather than annual in nature. I would be interested in what you are observing. Call or e-mail me with your thoughts. Phone 608-265-2047; e-mail psm@plantpath.wisc.edu.

Patty McManus, UW-Madison Extension Plant Pathologist

Nothing can bring you peace but yourself; nothing can bring you peace but the triumph of principles.

Ralph Waldo Emerson

ROUNDUP REMINDERS

With flowering over and fruit setting growers will once again be thinking about wiping weeds with Roundup. Be sure to read the product label before you begin an application. A few points warrant reminders:

- Coverage is the most important variable. You must have good coverage of the weed's leaf surface in order to get enough material throughout the plant to kill it completely. Dyes added to the wiping solution help you tell where you have wiped.
- Increasing concentration does not make Roundup more effective. Concentrations that are too high may be detrimental as they can kill the contacted tissue before enough is translocated to kill the roots. A 10 to 20% Roundup solution works for most people.
- Cut stump applications are allowed for woody brush. Cut the plant off then treat the stump with a Roundup solution. Making an emulsion with lanolin and then applying to the stump will help keep the Roundup on the surface so it is absorbed for a longer period of time.
- Adding ammonium sulfate per the label specifications can help entry of the active ingredient and will improve performance.
- Roundup requires a 6 hour rainfree period following application to get into the plant. Don't apply if rain is imminent.
- Remember the 30 day PHI.
- Wear appropriate PPE. This includes a long sleeved shirt and long pants and shoes plus socks. Waterproof gloves are not required, but are prudent.
- Keep the wiper surface clean. If dirt, weeds or other debris covers the wiper too little solution will accumulate on weed leaves.

Teryl Roper, UW-Madison Extension Horticulturist