Integrated Cranberry Crop Management for Wisconsin

Cranberry Crop Management Newsletter

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USING CALLISTO® HERBICIDE

Because this is the first year that Callisto herbicide has been available for Wisconsin Cranberry growers there are many questions about its use. Our first advice to growers who wish to use Callisto is to carefully read both the Section 18 Exemption and the full package label. Many questions can be answered simply by reading the label. In this article we'll discuss Callisto use in Cranberry.

Activity. Callisto has both pre-emergent and post-emergent weed control activity. When applied before germination of annual weeds the seedlings take up the herbicide from the soil resulting in death. The Section 18 exemption indicates that Callisto should not be applied if growers anticipate rainfall or sprinkling for frost protection within 48 hours of application.

When applied post-emergent the herbicide is taken up through the foliage. Thus, irrigation immediately following a post-emergent application is not recommended. In bearing beds, Callisto can be applied after the bud break stage but before the fruit set stage. In non-bearing beds, Callisto can be applied after the bud break stage but not less than 45 days before flooding in fall or winter.

Callisto is a bleaching type herbicide. Susceptible plants treated with Callisto will turn white or yellow.

Weeds controlled. Under our current Section 18 Exemption Callisto application is only to be made to control four weeds: Birdsfoot trefoil, Violet, Marsh St. Johnswort, and Buttercup. While Callisto is effective against more than these species, these are currently the only weeds for which application should be made. If you don't have at least one of these species in a bed it should not be treated with Callisto.

Rates. The maximum application rate for Callisto is 8 oz/acre/ application with no more than two applications per season. Thus, the maximum annual application is 16 oz/acre. Split applications need to be at least 14 days apart. Research plots had single application rates of 4 oz/a to 8 oz/a.

Application. Because Callisto is a very active herbicide it is critical that application be made with a carefully calibrated sprayer. Also, because Callisto is expensive and is registered for a narrow weed spectrum at present, many of the applications are going to be spot applications with a backpack or hand held sprayer. These sprayers must also be calibrated. Calibration

of hand sprayers is determined by the walking speed of the applicator and the discharge rate from the nozzle along with the concentration of the material in the tank. Use great care in spot treating. The difference between an 8 oz application and an 80 oz application is only seconds on the trigger. Spot treatments made to runoff will exceed the maximum application rate.

WPS requirements. These requirements are not on the Section 18 Exemption. That is one reason why it is critically important to read the package label. Callisto has a 12 hour re-entry interval and a 45 day pre-harvest interval. Applicators and handlers must wear at least:

- Long sleeved shirt and long pants.
- Shoes plus socks.
- Chemical resistant gloves (Category A)

Pesticide interactions. Wisconsin's current Section 18 exemption does not mention tank mixing Callisto with any other pesticides. In addition, the current recommendation from Syngenta is that Callisto not be applied within 7 days (either before or after) of an organophosphate or carbamate insecticide such as Lorsban.

Research plots have shown Callisto to be a safe and effective herbicide for control of weeds in Wisconsin cranberry marshes. In our research trials, we have not observed a reduction of cranberry yield from Callisto application. However, as with any new pesticide, it would be advisable to test this product in a small area with the emergency exemption weeds given that research plots cannot account for all climatic conditions, management practices, cranberry varieties and bed age, and other variables that differ greatly among marshes. We'll have a larger discussion of Callisto use at the summer field day in August. We hope to see you there.

Teryl Roper, UW-Madison Extension Horticulturist
Jed Colquhoun, UW-Madison Extension Weed Specialist

TORNADO SAFETY

Tornadoes are one of the most powerful and violent storms that nature can produce.

They come in all shapes and sizes and can occur in every state in the union, on any day of the year and at any hour of the day.

However, one thing that all tornadoes have in common is that they can be a direct threat to your safety.

What Is A Tornado?

A tornado by definition is a violently rotating column of air that extends from the base of a cumulonimbus cloud down to the ground. there may or may not be a visible funnel cloud inside the tornado. in other words...the funnel cloud is not the tornado.

For instance, for many years it was assumed that most tornadoes spin downwards to the ground. Recent research and eyewitness reports indicate that most tornadoes actually spin up from the ground and grow upwards into the thunderstorm.

These types of tornadoes may not actually have a visible funnel reaching the ground making them almost impossible to see.

Frequently, dirt and debris violently rotating at ground level is a good confirmation of a tornado.

Wisconsin Tornados

In Wisconsin, the peak tornado season is May through July.

The peak hours of occurrence are between 3 p.m. and 9 p.m. with 5 p.m. being the most favored time for tornadoes to develop.

Roughly three-fourths of Wisconsin tornadoes occur between 3 p.m. and 9 p.m.

On average Wisconsin sees 20 tornadoes a year with an average of one fatality each year due to tornado-related injuries.

Our Safety

During this time of year, your safety depends on you being alert and cautious.

Be sure that you understand the difference between a tornado watch and warning. Many people confuse watches and warnings.

Now is a good time to review the difference before severe weather hits. It is also a good time to make sure that you know what county you live in.

The National Weather Service issues warnings on a county basis. Keep abreast of the current watches and warnings from a NOAA weather radio, local TV or radio stations or cable stations.

Tornado Watch

The National Weather Service issues a watch to give you advance notice that the development of tornadoes is possible in your area. this gives you the time to make preliminary plans for moving to a safe shelter quickly if a tornado is sighted.

Tornado Warning

A tornado warning is an urgent announcement that a tornado has been reported by a person or indicated by radar and warns you to take immediate precautions.

When a warning is issued, move quickly. Seconds save lives.

What Action Should You Take?

Schools, office buildings, factories and those planning large outdoor activities should all have a well-rehearsed plan of action in case of threatening weather.

This includes having a NOAA weather radio to monitor the current and future weather conditions.

The National Weather Service recommends taking shelter in a permanent structure in an interior hallway, bathroom or closet on the lowest floor.

If available a basement is the best choice to take cover.

Auditoriums or areas with windows should be avoided. In last-minute situations a desk may used for cover.

The southwest corner of the basement is not necessarily the safest place because large objects such as motor vehicles can be deposited into basements.

You need something sturdy overhead, such as an I-beam. Another better option in the basement is to get underneath a heavy desk or table or the staircase.

If you are caught outside in the open during a tornado, try to hide in a ditch or ravine. Lie flat and cover your head. If you can..wrap a covering around exposed portions of your body.

Any debris driven by tornado strength winds has the potential to cause serious injury.

What To Do If You're Driving?

Never drive directly towards or the vicinity of a tornado.

Any tornado can change direction or speed and put you directly in its path. Move away from the tornado or get out of the car and take shelter immediately.

Also, never take cover under highway over-passes. The tornadic winds will be even stronger under highway over-passes and you are actually more exposed to flying debris than you are lying in a ditch or ravine.

People have been killed taking cover under highway over-passes.

Mobile Home Safety

If you live in a mobile home you should be especially cautious during times of possible severe weather.

Most mobile homes are not safe in severe weather especially tornadoes. The size and construction of mobile homes makes them particularly vulnerable to overturning in high winds.

Some protection may be provided against damage by securing them with cables anchored in concrete footings.

You should be aware that when high winds or tornadic activity are imminent mobile homes should be evacuated. The NWS

advises that in these conditions you should move immediately to a sturdy, permanent structure.

If no such shelter is available, lie flat in a ditch or depression in the ground. Act Quickly. A majority of tornado related deaths occur in mobile homes. Preparing ahead of time could save your life.

SOURCE: National Weather Service

PERIODICAL CICADAS

Much has been written in the popular press during recent weeks concerning the emergence of the Periodical cicadas in the Midwest. They have largely emerged in northern Illinois and the southern tier of counties in Wisconsin. They live for about 30 days and the females lay eggs in the small twigs of woody species. Apples and grapes are the primary fruit crops that are affected, along with woody ornamentals. Within two weeks of emergence the females begin laying their eggs. Each female cicada deposits from 400 to 600 eggs into slits made in the bark. More than 80 species of plants are subject to attack. The female cicada favors the tender twigs of one-year-old growth for egg laying. In six to seven weeks the eggs hatch, the young fall to the ground and enter the soil for their long subterranean existence. After forming a chamber adjacent to a rootlet, the nymphs penetrate the xylem vessels with their piercing-sucking mouthparts and begin to feed. No apparent damage results from the nymphal feeding. The nymphs remain in the soil for 17 years and only move from their original feeding site if adverse conditions arise.

The cicadas that are emerging this year are known as Brood XIII and are composed primarily of Magicicada septendecim. Other broods emerge on a 17 year cycle in other parts of the Midwest and eastern United States. Brood XIV is due to emerge during 2008 and it appears to be present in the cranberry production areas of southeastern Massachusetts.

According to the brood maps I have seen none of the broods of periodical cicadas are found in central or northern Wisconsin. Another common species known as the 'Dog Day Cicada' is common each year in Wisconsin and emerges in mid- to late-summer.

Cicadas are not known to attack or feed on cranberries. While they are a curiosity and a pest where they are present, this is not an insect Wisconsin cranberry growers have to contend with.

Teryl Roper, UW-Madison Extension Horticulturist

Note: Partially based on information from Karen Delahaut

REDUCING THE RISK OF MICROBIAL CONTAMINATION OF CRANBERRIES

Every few weeks, it seems, there is a report in the media of people getting sick from eating fresh or minimally processed produce. Fortunately none of these food borne illness outbreaks have originated in Wisconsin or from cranberries. That does not mean, however, that this will not happen in the future. Fortunately for the cranberry industry some 95% of the crop is processed into juice, sauce, and other products where heat pasteurization is part of the processing. For fruit that is sold fresh food safety should be a major concern. Wholesale purchasers of fresh produce are increasingly demanding that workers be trained in appropriate practices and that a third party audit verifies that appropriate practices are occurring.

Spread of food borne illnesses are usually related to unclean water, manure handling, poor personal hygiene, and poor practices for handling and shipping. This article will explore these topics. Subsequent articles will describe the microbes pose the greatest danger.

Water is intimately tied to cranberry production. Water is used in every stage of production including winter flood, frost protection, irrigation, pest management, harvest, and processing. The key to water safety is using water of a quality that is appropriate to its use. Water used for irrigation can be of low quality. If microbes are present in water many will be killed by exposure to UV light or will not compete among the soil microfauna. Water used in dump tanks should be chlorinated and the chlorine level of that water should be tested periodically to ensure that sufficient active chlorine is always available. Water used for final cleaning of fruit after harvest should be of potable quality. Wells that provide this water should be inspected regularly to ensure that the casings are intact and functional. Wells should be tested regularly for coliform bacteria. Water used in processing facilities must be of potable quality. Equipment in processing facilities must comply with local food handling codes that ensure cleanability. Equipment must be cleaned and sanitized daily.

Fortunately, cranberry growers don't use manure as a source of plant nutrients. However, feces may end up in beds from rodents and other wildlife. Domestic animals, especially dogs, are sometimes in beds and may leave feces in beds. Dogs should be trained to stay out of cranberry beds. Little can be done about bird droppings or feces from wildlife.

The most important means of preventing the spread of foodborne illness is for workers to practice good personal hygiene. Workers should be taught good hygiene and these practices should be modeled by supervisors. Workers (both field workers and harvest/handling workers) should wash their hands as they begin work, after going to the toilet, before and after eating and before smoking. Facilities for hand washing should be available on every property. Proper hand washing takes time. Get hands wet and add soap. Rub hands together and scrub for at least 20 seconds. Rinse hands under running water and dry with single use paper towels. 94% of people say they wash their hands after using the toilet, while only 68% of people actually do wash their hands based on observations.

Workers should wear 'clean' clothing to work. This means that clothing should be laundered regularly to remove surface soil, etc.

Workers who are sick should not be at work, particularly in processing facilities or during harvest. Workers who contact fruit directly should have any cuts or wounds bandaged and gloves may be required to prevent direct contact with fruit.

During and after harvest containers that will hold cranberries should be clean and in good repair. Containers used during harvest should be cleaned if they are also used for storage. All containers should be cleaned prior to harvest. Vehicles used to transport fresh fruit should be inspected and cleaned prior to use. If a truck was used to haul grease or meat prior to cranberries the truck should be thoroughly and completely cleaned. Trucks used for fresh fruit should have refrigeration capacity to keep the fruit cool, both for maintaining product quality as well as to reduce the opportunity for microbes to grow.

Food safety is everyone's job. If cranberries were the source of a food borne illness outbreak the media report would not include just the farm in question, but would implicate all cranberries. The cranberry industry learned a similar lesson in 1959. Hopefully we won't have to learn this lesson again this decade.

Teryl Roper, UW-Madison Extension Horticulturist

Government is not reason, it is not eloquence--it is a force. Like fire, it is a dangerous servant and a fearful master.

George Washington

YOUTH SAFETY SEMINARS

Wednesday June 13 is the date for youth safety seminars in the Warrens and Cranmoor area. The Warrens session will begin at 10:00 am at the Russell Rezin & Son Marsh on County EW. The Cranmoor session will begin at 2:00 pm at the Lake Dexter County Park on Hwy 80.

These training sessions will cover pesticide safety training to meet the WPS requirements as well as small equipment safety and large equipment safety. It does not replace the tractor driving course for those who will be driving tractors.

There is no registration required for the event, but to enable us to plan for refreshments, etc. we do ask that you contact the Wood County Extension office (715-421-8440) and let them know how many young people will attend from your marsh.

If you will hire young people, including family members, to work on your marsh this summer we encourage you to have them participate in this training so that we as an industry can avoid any accidents that would mar the great reputation we currently enjoy.

Teryl Roper, UW-Madison, Dept. of Horticulture
Matt Lippert, Wood County Extension Office

CALENDAR ITEMS

June 5. Early Season Pest Management training sessions at Mather and Gaynor marshes.

June 13. Youth Safety Seminars. See the information in the previous column. Please call the Wood County Extension Office to reserve a space for your youth employees.

August 8. Cranberry Field Day at Copper River Cranberry Co. west of Merrill. Registraion information will be sent by WSCGA soon.

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