

Cranberry Crop Management Journal

IN THIS ISSUE:

| | |
|--|---|
| Predicting Bud Break and Bloom..... | 1 |
| WPS Pesticide Posting Requirements | 2 |
| Nutrient Management..... | 3 |
| Nectar Gardening | 4 |
| Grower Update..... | 4 |

ADDRESS CORRECTION

Contact us if you have any address corrections, additions, or deletions.

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CAN WE PREDICT BUD BREAK AND BLOOM TIME USING GROWING DEGREE DAYS?

by Amaya Atucha
UW Extension Fruit crop Specialist

A couple of weeks ago I was asked this question by a grower, and I thought it would be a good topic to cover in a newsletter article as there might be more growers wondering the same thing. Most growers are familiar with the Growing Degree Days (GDD) units because it is extensively used to predict insect development stages for IPM purposes, and it is a pretty accurate method for timing management strategies to control insect pest. So, why can't we use it to predict phenological stages in cranberries? To calculate GDD we need to know what the base temperature is, which refers to the lowest temperature at which growth and development happens in cranberry plants. There has been some work done by UW researchers trying to estimate the base temperature for cranberry vines to resume growth in spring. However, at this point, we do not know exactly what the base temperature is. In other fruit crops, such as blueberries and grapes, the standard base temperature used for calculating GDD is 50°F. However, work done by Dr. Beth Workmaster and Dr. Jiwan Palta looked at predicting phenological stages of cranberry using growing degree days with a base temperature of 41 °F, under the assumption that cranberries would grow at a lower temperature threshold than other fruit crops (Fig. 1). There is currently research being done at UW-Madison looking at estimating the base temperature for growth in cranberries, and hopefully we will have more information to be able to predict developmental stages based on GDD in the future.

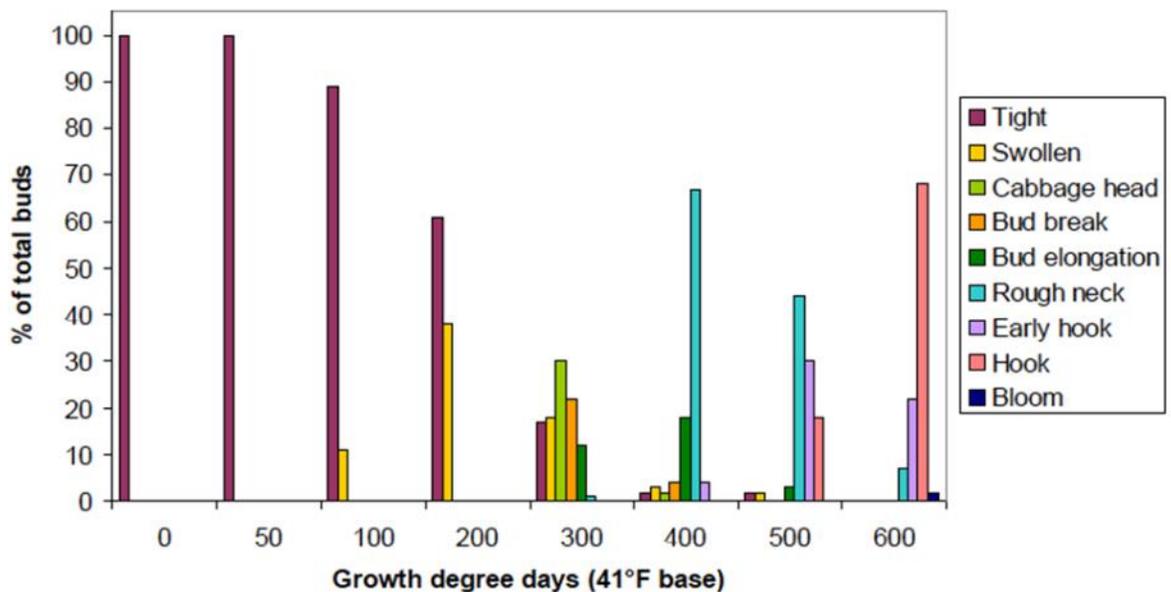


Figure 1. Phenological stages of cranberry buds based on GDD accumulation during spring and calculated using an arbitrary base temperature of 41 F. Data from B. Workmaster and J. Palta 3-year study in Stevens.

PESTICIDE POSTING REQUIREMENTS UNDER WPS 170.409

by Ben Tilberg
Ocean Spray Cranberries, Inc.

As the season begins, most growers use some sort of pesticide to control emergence of weeds or insects. The use of pesticides requires notification to ensure workers and persons entering the application areas are protected from exposure. Proper PPE will protect workers from exposure while working near or in restricted-entry areas. The quick reference Overview of Worker Protection Standard for Cranberry Pesticides, found on the next page will help to remind personnel of the requirements for PPE and notification.

Outdoor production areas subject to restricted-entry intervals greater than 48 hours: If a pesticide with product labeling that requires a restricted-entry interval greater than 48 hours is applied to an outdoor production area, the agricultural employer must notify workers of the application by posting warning signs.

Outdoor production areas subject to restricted-entry intervals 48 hours or less: If a pesticide with product labeling that requires a restricted-entry interval equal to or less than 48 hours is applied to an outdoor production area, the agricultural employer must notify workers of the application either by posting warning signs or by providing workers with an oral warning. Posting is still recommended since it ensures all workers, private or employed, are notified when entering production area.

Exceptions:

- A. From the start of the application to an outdoor production area until the end of any restricted-entry interval, the worker will not enter, work in, remain in, or pass on foot through the treated area or any area within 1/4 mile of the treated area on the agricultural establishment.
- B. The worker was involved in the application of the pesticide as a handler, and is aware of all information

Warning signs must meet all of the requirements listed in WPS 170.409. Signs must be posted no earlier than 24 hours before the scheduled application of the pesticide and remain posted thru the restricted-entry interval to the production area. Signs must be removed or covered up within three days after the end of the restricted-entry interval. Standard sign must be at least 14" by 16" with letters at least one inch in height. When posting an outdoor production area using the standard sign, the signs must be visible from all reasonably expected points of worker entry to the treated area, including at least each access road, each border with any worker housing area within 100 feet of the treated area and each footpath and other walking route that enters the treated area. Where there are no reasonably expected points of worker entry,

| OVERVIEW OF WORKER PROTECTION STANDARD FOR CRANBERRY PESTICIDES | | | | | | |
|--|----------------|--------------|-------------|--------------|------|--|
| Product | Restricted Use | REI Hours | Signal Word | Notification | | Personal Protective Equipment |
| | | | | Oral | Post | |
| Insecticides | | | | | | |
| Actara | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Altacor | | 4 | Caution | x | x | Basic PPE in accordance with WPS |
| Assail 30 SG & 70 WP | | 12 | Caution | x | x | Basic PPE & Chemical resistant gloves and headgear |
| Belay | | 12 | Caution | x | x | Basic PPE & Chemical resistant gloves |
| Confirm 2F | | 4 | Caution | x | x | Basic PPE in accordance with WPS |
| Diazinon AG600 & 50W & AG500 | | 5 days | Caution | x | x | Basic PPE & respirator, face shield, safety glasses, Coveralls, CR footwear |
| Delegate WG | | 4 | Caution | x | x | Basic PPE in accordance with WPS |
| Imidan 70W | | 3 days | Warning | x | x | Basic PPE & respirator, face shield, safety glasses, CR apron |
| Intrepid 2F | | 4 | Caution | x | x | Basic PPE in accordance with WPS |
| Lorsban 4E & Advanced (Chlorpyrifos) | | 24 | Warning | x | x | Basic PPE & respirator, face shield, safety glasses, CR apron, CR footwear |
| Orthene 97 | | 24 | Caution | x | x | Basic PPE & respirator, face shield, safety glasses, CR apron |
| Sevin XLR | | 12 | Caution | x | x | Basic PPE & respirator, face shield, safety glasses, Coveralls, CR footwear |
| Fungicides | | | | | | |
| Abound | | 4 | Caution | x | x | Basic PPE in accordance with WPS |
| Bravo Ultrex | | 12 | Danger | x | x | Basic PPE & respirator, face shield, safety glasses, Coveralls, CR footwear |
| Bravo Weather Stik | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Indar 2F | | 12 | Caution | x | x | Basic PPE & headgear |
| Tilt & Orbit | | 12 | Warning | x | x | Basic PPE in accordance with WPS |
| Proline 480 SC | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Herbicides | | | | | | |
| 2, 4-D Granules | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Callisto | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Casoron 4G | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Devrinol 2-XT & DF-XT | | 24 | Caution | x | x | Basic PPE in accordance with WPS |
| Evital 5G | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Round-up Weathermax | | see label | Caution | x | x | Basic PPE in accordance with WPS |
| Poast | | 12 | Warning | x | x | Basic PPE & face shield, safety glasses, Coveralls, CR Apron, CR footwear |
| Select & Max | | 24 | Caution | x | x | Basic PPE in accordance with WPS |
| Stinger | | 12 | Caution | x | x | Basic PPE in accordance with WPS |
| Weedar 64 | | 48 | Danger | x | x | Basic PPE in accordance with WPS, CR Apron |
| This is advisory information only. Always read and follow current label directions. The label is the law. | | | | Basic PPE | | **Handlers and loaders should always use long Sleeved Shirt, long pants, eyewear, shoes with socks and chemical resistant gloves |

PESTICIDE POSTING REQUIREMENTS, CONTINUED

signs must be posted in the corners of the treated area or in any other location affording maximum visibility.

If **oral notification** is required, the agricultural employer must provide oral warnings to workers in a manner that the workers can understand. If a worker will be on the establishment when an application begins, the warning must be given before the application begins. If a worker arrives on the establishment while an application is taking place or a restricted-entry interval for a pesticide application is in effect, the warning must be given at the beginning of the worker's work period. The warning must include the location(s) and description of any treated area(s) subject to the entry restrictions during and after application specified. Also, the dates and times during which entry is restricted in any treated area(s). Instructions must be given not to enter the treated area or an application exclusion zone during application, and that entry to the treated area is not allowed until the restricted-entry interval has expired and all treated area warning signs have been removed or covered, except for entry permitted by early entry workers with required PPE.

The label is the law, so read the label, and post!



NUTRIENT MANAGEMENT STAYING IN COMPLIANCE WHEN RENOVATING

by Pam Verhulst
Consult With Pam, LLC

In making the rounds this spring, I see a lot of growers are well into bed renovations. During this busy time there are a few Nutrient Management notes that are important to remember:

- √ Pre-plant soil samples
- √ Incorporate soil amendments
- √ Lighter, more frequent fertilizer
- √ Spoils
- √ Renovation notes

The 590 standard requires a pre-plant soil sample for every 5 acres of new beds. Pre-plant soil analysis are important in Cranberry production for a few reasons. The most obvious reason is to make sure your pH is in a range that cranberries like (4.5-5.5). Another reason is that typically the sand that is used on a new planting contains little to no nutrients. Often the sand used is from a sand pit or a sand pile that has never had any fertilizer applied and contains very low organic matter. If soil analysis shows this, you may consider a soil amendment.

Bed renovation is the only time when incorporation of fertilizer into the soil is an option for cranberry growers. Cranberry growers may not be familiar with the advantages of this practice that is utilized in other crops where tillage is utilized. Any fertilizer applied to the soil before the vines are in the ground is considered a soil amendment. Soil amendments need to be incorporated into the soil. A couple ways to incorporate a fertilizer application would be to mechanically work it into the soil or water it in with an irrigation system.

Once the vines are in the soil the best management practice is to apply lighter, more frequent fertilizer applications. Growers should alternate between nitrogen only products (ammonium form) and complete N-P-K products. No more than 15 pounds of Nitrogen should be applied at one time. By the end of the season, no more than 150 total pounds of Nitrogen should be applied. If

more than 150 pounds of Nitrogen is used, take note as to why. It is okay as long as you have a valid reason, supported by in-season observations (extended growing season) or lab analysis.

During renovations the old vines and top soil (spoils) are usually removed. It is important that this material is discarded properly to avoid surface water pollution (eutrophication). The most common procedure is to compost the spoils. Be sure not to discard the material near surface water or in it.

Record how much soil was removed and what was done to improve the bed. Know how much sand was brought in and from where, so you can later identify the soil type. Explain tile, drainage and the irrigation system to fulfill water management requirements. Know the variety you planted and how many tons or plugs per acre. Keep these notes handy so you can update your plan narrative at the end of the season.



SPRING NECTAR GARDENING

by Suzanne Arendt
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Providing food sources for native pollinators in the spring, summer and fall is a great way to contribute to pollinator conservation efforts. Cranberry growers can play a key role in providing flowering plants throughout the native pollinators foraging stage, as well as provide habitat and overwintering homes in our support lands. Growers are cognizant of the vital role pollinators play in our cranberry production and efforts to minimize bee exposure to harmful pesticides is part of everyday best management practices on the marshes. I have already seen several species of native pollinators foraging in and around our cranberry beds. Within the cranberry beds, pollinators are active in the willow and leather leaf that is in currently in bloom. In the

adjacent areas near the cranberry beds and in support land, growers can incorporate nectar gardens. Planting fruiting trees, like apple, plum, and cherry are some of the most bee attracting trees you can include in your nectar gardens. Willows are important to, however we do end up having issues on some marshes as they can move into the cranberry beds to compete with water and nutrients for our cranberries. Other spring nectar rich plants include crocus, hyacinth, borage, calendula and wild lilac. Consider establishing nectar gardens in and around your cranberry acreage to help provide year long nectar sources for our native pollinators.

GROWER UPDATE

SARATOGA CRANBERRY COMPANY

Saratoga Cranberry is an 80 acre operation ran by my family since 1984. The marsh is located south of Wisconsin Rapids on County Highway Z in the township of Saratoga. There are currently 50 acres in production and 30 acres in varying stages of renovation. ‘Stevens’ makes up the total of established beds right now with ‘Crimson Queen’, ‘Mullica Queen’, and ‘Sundance’ being the new varieties that are going into our renovated beds. Highlights of our spring so far include the start of frost watch, which was April 21 and finishing up mowing and baling for the renovation project. Next week we are planning on starting our herbicide program starting with an application of Casaron.

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