

# Cranberry Crop Management Journal

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## UPCOMING DEGREE-DAY BENCHMARKS FOR SPARGANOTHIS AND DEGREE-DAY MAPS: MAY 25, 2016

Elissa Chasen and Shawn Steffan  
*USDA-ARS and UW Entomology*

In these warmer days of spring and summer, degree-days can accumulate pretty quickly. For example, each of the last few days with lows in the 50s and highs near 80 degrees accrued somewhere around 20 degree-days. You can see this easily in the degree-day look up table that the Steffan lab created for Sparganothis fruitworm (<http://labs.russell.wisc.edu/steffan/files/2013/11/Degree-day-look-up-table.pdf>).

Figure 1 shows that Sparganothis degree-days are ranging across the state from a low of 105 DD to a high of 460 DD. In central WI cranberry growing regions, we have accumulated around 350 degree-days, and flight is predicted to begin around 600 degree-days which means it is likely that flight will begin before the next degree-day update!

Northern WI growers will have a bit longer to wait before it reaches this benchmark.

With that in mind, Figure 2 illustrates key Sparganothis benchmarks and their associated degree-day estimates. In general, insecticide applications aimed at

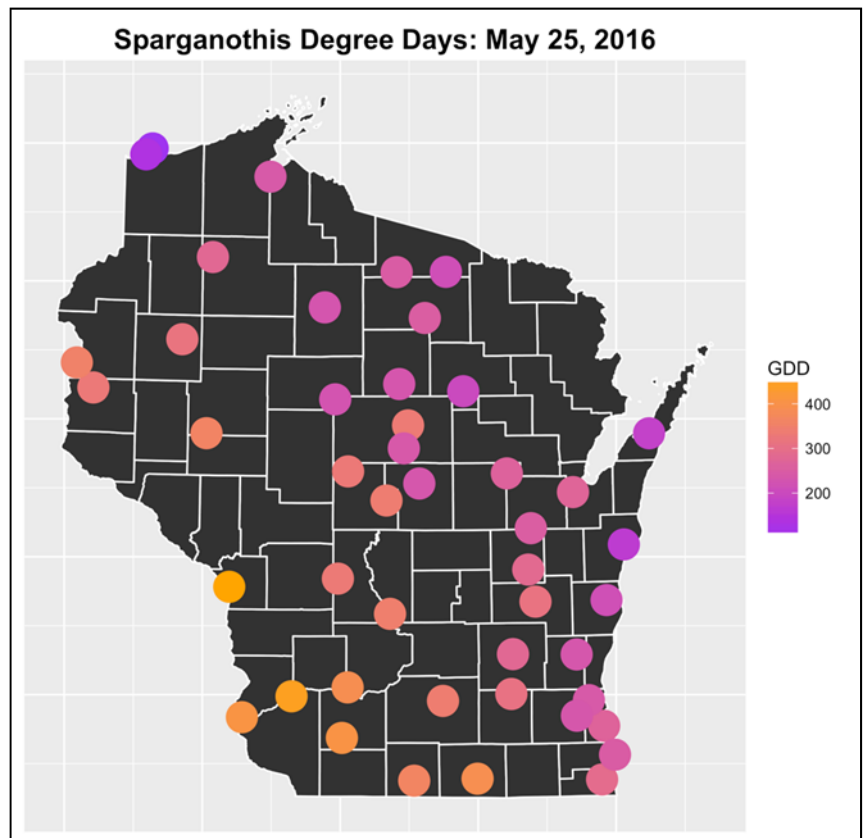


Figure 1

## ADDRESS CORRECTION

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







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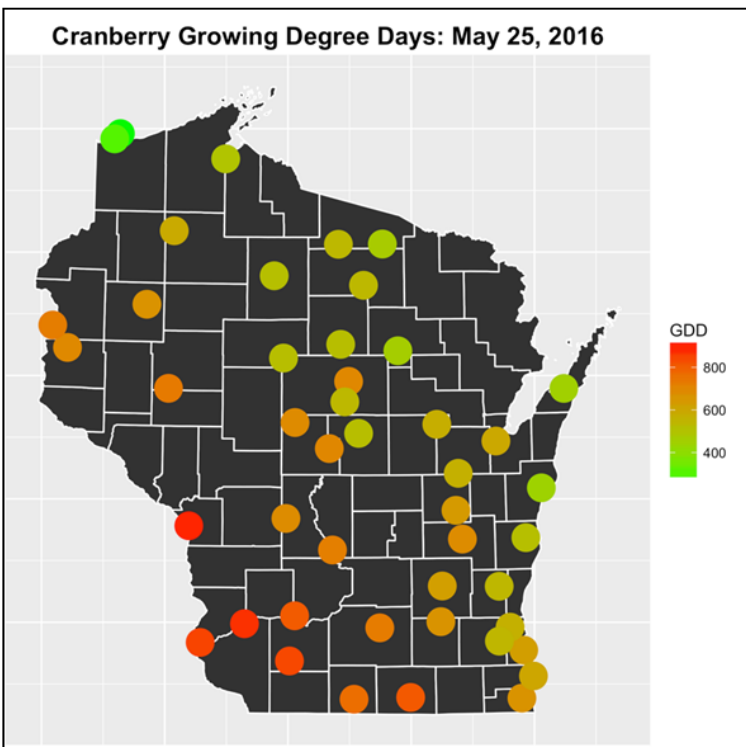
## UPCOMING DEGREE DAY BENCHMARKS

*Continued from page*

adults can be timed for peak flight, while insecticide applications aimed at larvae are often timed for the middle of the egg-hatch window (i.e., larval emergence), depending on the insecticide being used. Compounds with long residual activity for eggs/larvae can be applied earlier in the egg-hatch period, while compounds with shorter activity generally may need to be applied near or a little after peak emergence (for Sparg, this is ~1,400 DDs).

	Event	DDs from March 1 (approximate)
	Flight initiation	595.7
	First eggs laid	681.0
	Peak flight	884.12
	First egg hatched*	895.4
	End of egg laying	1,634
	Last egg hatched*	1,890
* Egg hatch window: 895 – 1,890 DDs		

**Figure 2**



**Figure 3**

Figure 3 shows degree day accumulations for the cranberry plants through May 25, 2016. Throughout WI, plant degree-days ranged from a low accumulation of 255 DD to a high of 910.

Figure 4 allows for comparison of degree-days over the last three years. Based on our observational data from the last couple of years, plants at this time will be likely in cabbage head and moving into roughneck.

	Cranberry Growing Degree Days			Sparganothis Degree Days		
	2014	2015	2016	2014	2015	2016
Central WI (Wisconsin Rapids)	517	789	705	233	405	343
Northern WI (Minocqua)	394	563	544	172	260	251

**Figure 4**

## VIRUSES

Patty McManus  
*UWEX Fruit Crops Specialist & Plant Pathologist*

Once cranberry plants become infected with a virus, such as tobacco streak virus (TSV) or blueberry shock virus (BIShV), they cannot be cured. Fortunately, the year after symptoms are visible, a cranberry plant goes on to produce normal fruit, with no apparent negative effect on yield or plant health, even though it remains a source of virus that can infect healthy plants. Two reasons that you might want to know if a bed is infected with a virus:

TSV and BIShV can be carried in vine cuttings. There are still many unanswered questions about these viruses, so it's best to avoid using infected vines when establishing new beds.

Although research and observations to date suggest little or no long-term impact of TSV or BIShV, be aware that combinations of viruses in woody plants can sometimes cause problems. If you know that a bed is infected, then you might want to monitor its performance more closely.

The best time to scout for TSV and BIShV visually is during early stages of fruit development, in middle to late July. Scarred berries turn red prematurely and stand out from the background of green leaves and healthy, immature berries. If you want to have vines tested for viruses, sample as described below. UW-Madison will not be doing routine virus identification this year, so you should send samples to Agdia, a commercial lab in Indiana. Check [www.agdia.com](http://www.agdia.com) or call 800-622-4342 for prices.

### **If you see scarred fruit:**

Collect ~10 uprights with scarred fruit from an affected bed.

1 upright = 1 sample.

Place each sample (1 upright) into a single plastic bag.

Refrigerate (do not freeze!) samples until shipping.

Request to have berries and leaves tested from each upright if collection is during early fruit set. Request that leaves be tested if collection is during late fruit set or harvest.

### **If you do not see scarred fruit, then collecting more samples and more uprights per sample is required:**

Collect ~10 uprights from 10 locations representative of a bed.

10 uprights = 1 sample.

Place each sample (10 uprights) into a single plastic bag.

Repeat until you have at least 8 samples, each sample in its own bag. The more samples you test, the better for getting an accurate answer.

Refrigerate (do not freeze!) samples until shipping.

Request to have leaves tested from each sample.

## OBSERVATIONS FROM THE FIELD: MAY 29, 2016

Jayne Sojka  
Lady Bug IPM, LLC

### The Buzz word all over Wisconsin Cranberry Land is FROST.

Let's go back to April when we had 82 degrees and then a deep freeze. Did that 82 degrees wake up our plants? Did we HAVE to start protecting from that point on or was that bud tight enough to tolerate cool/cold temperatures? The growers that started protecting had a jump start on spring. Their plants were ahead as we saw elongated buds and roughnecking several weeks ahead of those that did not protect early. Is that a good thing? I have heard that some growers flooded up to 5 times this spring to protect the plants. Some growers have spent 22 nights protecting so far this season.

We have had some very unusual frost events in May. (May 8<sup>th</sup> and May 14<sup>th</sup>) Dew points dropped to 19 and 20 and the air temp ended up being less than 20 degrees or less for single digits, plus we had winds with this event. Frost protection was extremely difficult. What was the RIGHT thing to do? Some flooded up, some brought the water up to a surface flood and ran the sprinklers as well, but many protected with the sprinklers only. Most growers could not turn the sprinklers off until 9:30 or 10:00 the following morning.

Only you can answer these questions for your marsh. Just what does it cost to run pumps 10 to 12 hour nights? What does it cost YOU to flood up? Can your sprinklers reach all pies and corners with high winds?

A pillar in my Cranberry World always reminds me that everyone harvests at the same time regardless how early they got their plants started in the spring. He also points out that our plants are tougher than we give them credit for. Yet with those words he clearly states that "Look at your buds and see exactly where they are at because once you start protecting you HAVE to continue." When you decide to flood for protection the buds are so much more vulnerable afterwards than if you irrigated for protection so be conscience of your decisions.

I have attached some frost pictures that we see across WI. Please pay attention to the strange patterns on one of my pictures. Has anyone else seen this type of damage? The grower shared that the sprinkler heads at the end of beds where there is no overlap show these unique patterns.

### INSECTS:

Most of our growers have taken control of the 1<sup>st</sup> generation at this point. Cutworm seems to be at an all time high this spring, but Sparg were right behind them in numbers. Blueberry Looper and ½ wing looper are popping up where they were not present in 2015. BHFw made a debut early and most were controlled with FROST protection floods. Trapping will start May 30<sup>th</sup>.



*Frost damage found on the edges and centerlines of beds*



*Frost damage found on the edges and centerlines of beds*



## REVISITING THE INSECTICIDE INTREPID

Christelle Guédot  
University of Wisconsin, Entomology

**Intrepid** is not a new insecticide for cranberry. It has been registered with EPA since 2000. It is marketed by Dow AgroSciences under the formulation 2F (2 lbs of active ingredient per gallon, Flowable). Similar to Confirm, Intrepid is an Insect Growth Regulator (IGR) with the active ingredient methoxyfenozide (IRAC code 18, class of diacylhydrazines). It mimics the action of a natural insect hormone that induces molting in lepidopterous larvae. It is highly active against most lepidopterous larvae by inducing premature lethal molt primarily after ingestion from treated crop surfaces. Feeding generally ceases within hours of ingestion and affected larvae will often become lethargic and discolored. The larvae may take several days to die. Intrepid is very selective to Lepidoptera larvae and should have no effect on other insect orders.

Intrepid 2F is registered on cranberry for control of blackheaded fireworm, sparganothis fruitworm, spanworms, gypsy moth, and spotted fireworm.

We have had Intrepid 2F in our insecticide trials for about a decade now and it has shown great activity against sparganothis fruitworm, blackheaded fireworm, and cranberry fruitworm. Even though cranberry fruitworm is not on the label under cranberry, it is legal to use for cranberry fruitworm control as Intrepid is registered for cranberry in Wisconsin.

Intrepid 2F may be applied by ground equipment, by chemigation, and by air (see label for specific application regulations). For ground applications, conventional ground sprayers need to be calibrated to deliver a minimum of 10 gpa to young or small plants and 20 gpa to densely foliated established plants to ensure thorough coverage.

A chemical is considered toxic to bees if its toxicity (measured as the LD50 or Lethal Dose required to kill 50% of the test population) is below 11 µg/bee. Intrepid has an LD50 of 100µg/bee, thus it is not considered toxic to bees. While Intrepid is considered safe to spray during bloom, as a general rule, avoid spraying when bees are actively foraging and concentrate your spraying earlier or better yet later in the day.

Drift or runoff from applications of Intrepid 2F may be hazardous to sensitive aquatic invertebrates. Do not apply directly to water.

Restrictions on maximum residue limits may be applied by some handlers and you are encouraged to check with your handler before using this or any other product.

And as always, make sure to read the label before using any pesticide. You may find the label of

Intrepid 2F at the following link: [www.agrian.com/pdfs/intrepid\\_2f\\_label1h.pdf](http://www.agrian.com/pdfs/intrepid_2f_label1h.pdf)

### INSECTICIDE: INTREPID

- Available as 2F (2 lbs. of Flowable = liquid AI per gallon; 23% AI)
- Restricted re-entry interval (**REI**): 4hours
- Pre-harvest interval (**PHI**) on cranberry: 14 days
- Do not exceed a total of 64 fl. oz. per acre per season
- Rate of use per acre: 10-16 fl. oz.

# GROWER UPDATES

## Adams 73 Cranberry

I know I am preaching to the choir, but enough with the frost protection already. From the first of May through the 22nd we had 16 nights of frost protection. Many of those nights started before the sun went down. The only advantage to that is you do not need the spotlight for the initial start up.

With warmer weather the past few days the vines are finally perking up.

Warm humid weather is being forecast over the next week. I feel that is what we need to get this growing season back on track.

Happy Memorial Day

**Jeff Hopkins**

Adams 73 Cranberry

## Habelman Bros. Tunnel City

Mother nature's cold hand has touched us. In 30 plus years this is the most injury we have seen on the marsh due to the cold and windy nights. Many trees and vegetation were hurt also. It was a very frosty stretch of nights.

The "bug flood" was applied on May 16 and the growing degree days were at 553. It was on for 30-36 hours. The flood was not as successful as in years past.

We are now at 913 growing degree days. Our soil temperatures are at 65 degrees. With the warm days and nights the vines are moving fast. It won't be long and we will be seeing our first blossom. Then shortly after that we will be applying our first application of fungicide. This week an application of fertilizer will be applied. We were able to get the first application of Callisto on last week

Hope everyone enjoyed the weekend and had a chance to think of our past and present military.

In regards to the last grower update, we were referring to the brewers bats being boring and were reminded that there is always something to do on a cranberry marsh.

**Steve Schoonover**

Team Habelman

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