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### First detection of spotted wing drosophila in Wisconsin for 2018

*By: Christelle Guédot*

Spotted wing drosophila (SWD) was detected in our monitoring traps in Wisconsin. One female was found in a trap collected June 1, 2018. The monitoring traps are checked every other week so this female could have been caught anytime from May 17 to June 1. Michigan detected their first SWD on May 11 this year. To put this in perspective, see the table below with the first SWD detections in Wisconsin since 2013 when we initiated an active monitoring program.

Year	Date of 1 <sup>st</sup> detection
2013	June 24
2014	June 30
2015	July 8
2016	June 10
2017	June 5
2018	June 1

As you can see from this table, SWD are detected earlier each year putting more crops at risk that may have otherwise escaped damage from SWD by ripening prior to peak populations. This topic was discussed in a previous [article](#). Overall, the seasonal patterns of SWD populations are fairly consistent and show that ~3 weeks after the first detection, populations start ramping up.

At this point, we strongly recommend all fruit growers begin monitoring for SWD as soon as their fruit starts turning color. You can either use commercial or homemade traps and baits. Commercial traps and lures can be purchased from companies such as [Great Lakes IPM](#). For more information on making your own trap and bait, please refer to the [SWD website](#). Another option which should be implemented especially by strawberry and grape growers is to sample suspected fruit to look for the presence of larvae. We recommend checking fruit twice a week, crushing the fruit and looking inside for SWD maggots, or using the [salt test method](#).

If you find larvae in your fruit, sanitation and harvest schedule methods should be implemented and were discussed in a previous [article](#). Other management methods should also be implemented and were discussed in our article on [organic management of SWD](#) in the last issue of the Wisconsin Fruit News. Some insecticides and other strategies that can be used in conventional management are also discussed in a previous [article](#).

Happy growing season!

## First reports of Eastern flower thrips in Wisconsin for 2018

By: Christelle Guédot

Eastern flower thrips (EFT) were reported by a couple of growers at the WBGA field day. Please pay close attention to your strawberry plantings and inspect for the presence of EFT.

As a reminder, it is recommended to monitor all varieties as they begin to bloom. Look at 10 blossoms per site, with five or more sites per variety. Shake/tap blossoms in white bowl or tray. Yellow sticky cards can be used to detect the presence of thrips. Although no formal threshold has been established for EFT, chemical control is warranted when populations exceed 2-10 thrips per blossom or small berry. This is a broad range of densities and other states that do not see a lot of thrips damage recommend 10 thrips per blossom. If you have a history of damage and find thrips, you may feel more comfortable with the lower threshold. More research is needed to correlate ETF densities with damage in order to establish a formal action threshold.

For more information on management methods for ETF, please refer to our previous [article](#) from last year.  
Happy growing season!

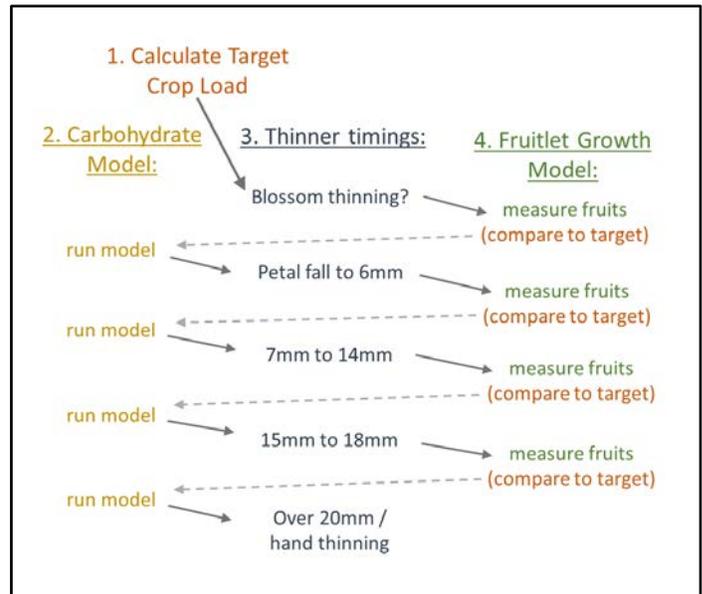
## Apple thinning

### Precision apple thinning part VI: *Wrapping up, and last rescue thinning*

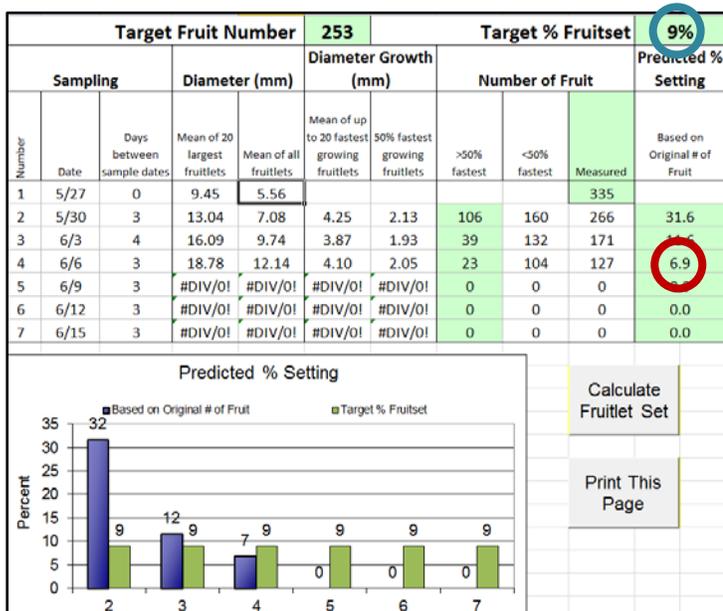
By: Janet van Zoeren and Amaya Atucha

This week king fruit in most orchards are reaching 18 – 20 mm, which means that the thinning window is rapidly closing for Wisconsin apple growers. In today's article, the final installment in our series on precision apple thinning, we first quickly wrap up all the process of using the precision thinning model to inform thinner spray decisions, remind you of how to use the fruitlet growth model to determine if you have reached your target cropload, and then discuss late thinning options.

“Precision thinning” encompasses three steps: calculating target crop load, using the carbohydrate model to adjust spray rates, and using the fruitlet growth model to determine when the target crop load has been reached (Figure 1). This year we have used the model and discussed the process throughout this newsletter series. Beginning at early pink, we counted the number of flower clusters on each of five trees, and used the diameter of the trunk to determine the target crop load (part II). Then, at petal fall, before applying the first thinner, we ran the carbohydrate model, and adjusted the doses based on the output of the model (part III). We provided a table in part IV summarizing the characteristics of each thinning window, including information on chemical thinners, and when and at what rate to apply. Lastly, after each chemical thinner application, we measured the diameter of fruitlets and used the fruitlet growth model to assess the percentage of fruitlets that would drop (part V).



**Figure 1:** A flow chart depicting how the precision thinning processes can guide decision-making. The process involves calculating a target crop load, planning when to begin spraying, using the carbohydrate model to adjust thinning rates based on weather conditions, and using the fruitlet growth model to determine if another spray is necessary. Adapted from T. Robinson, Cornell University.



**Figure 2:** “Summary” page the of MSU fruitlet growth model spreadsheet, showing that in this block we have reached 6.9% of the initial cropload (red circle), which is slightly less than the target cropload of 9% (blue circle), indicating that another thinner application is not necessary.

This week, six days after the second thinner application, we measured fruitlet diameters and, using the MSU spreadsheet, calculated that we are currently thinning down to around 7% of the initial cropload, which is just under the target cropload (Figure 2). This helps to back up the grower’s visual observations that trees have achieved the desired crop load, and that it is unlikely that much, if any, hand thinning will be necessary on that block this year.

### Rescue thinning

Some blocks or orchards may not have reached the target crop load. However, fruit across the state are nearing 18-20 mm diameter, which is the diameter at which it becomes very difficult to thin. By the time fruit has reached 25 mm, probably in the next few days for most Wisconsin orchards, hand thinning will be the only option.

In the 15 – 20 mm window, products like NAA (Fruitone L, PoMaxa) and 6BA (MaxCel, RiteWay) are not very effective. There are two products that can still work until fruit reach around 25 mm diameter: carbaryl and ethephon. Dr. James Schupp from Penn State recommends an application of carbaryl at 1 pint to 1 quart per 100 gallons of water, if only a mild thinning is needed to adjust the final crop load of the trees. However, if a more aggressive thinning is needed, then the best option at this stage would be using ethephon (Ethrel). This treatment can be risky; it can potentially remove the entire crop, so special consideration needs to be taken into account when applying this product. Here are some recommendations from Dr. Wes Autio and Dr. Win Cowgill from Rutgers University regarding the use of ethephon as a rescue thinning treatments:

- Temperature is very important during the day of application and the 2 following days, and ideally temperature in the 70s are recommended. Higher temperatures will result in over thinning.
- Fruit will be receptive to this treatment when they are between 15 to 25 mm.
- A tank mix with half-pound of Sevin (carbaryl) and a surfactant is recommended.
- The concentration of the application will depend on the variety, here's a table with recommendations:

Variety	Concentration ethephon (Ethrel) per 100 gallons of spray
Spur-type Delicious and Fuji	1.0 to 1.5 pint
Golden Delicious, Rome Beauty (very sensitive varieties)	0.4 pint
Gala, Cameo and GoldRush	0.75 pint
Jonagold	0.5 to 0.75 pint

### Current carbohydrate model outputs

By: Janet van Zoeren and Amaya Atucha

Following are screen shots of the current NEWA carbohydrate model outputs from across the state. The green bar shows the current day's temperature and solar radiation data, and the model's estimate of tree's carbohydrate balance. Below the green bar, in tan, is the forecasted weather data and corresponding forecasted carbohydrate balance. This week across the state models suggest an *increased* rate (from 15% to 30% increased) compared to the standard rate. The thinning window is closing across most of the state, so future newsletter issues will only contain model output information for Door County.

#### Richland County

Current phenological stage: 14 - 20 mm fruit

Green tip: 4/30

Full bloom: 5/16

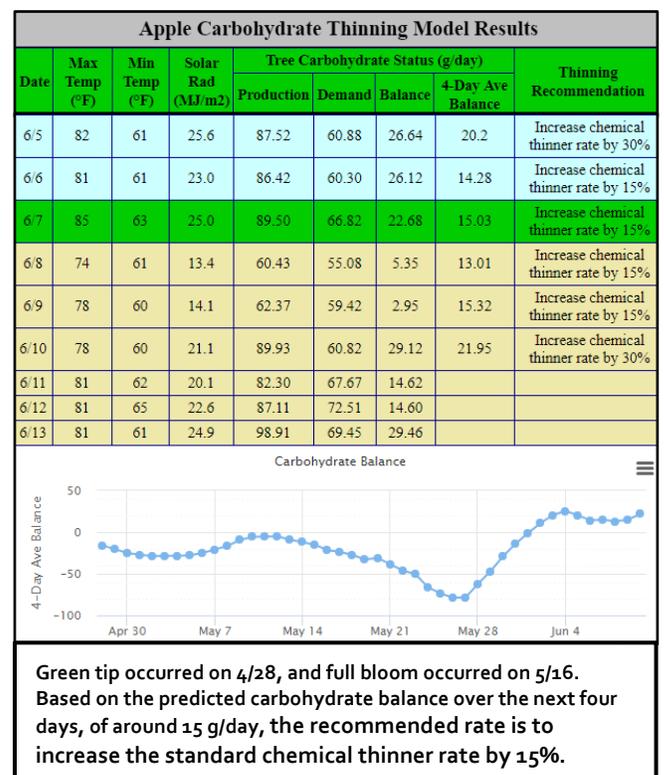


#### Trempealeau County

Current phenological stage: 14 - 20 mm fruit

Green tip: 4/28

Full bloom: 5/16

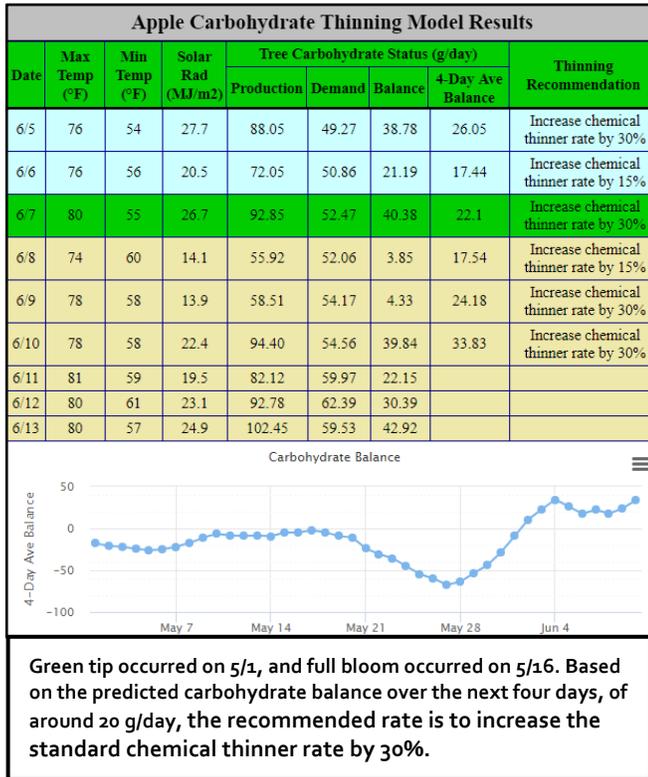


## Eau Claire County

Current phenological stage: 14 - 20 mm fruit

Green tip: 5/1

Full bloom: 5/16

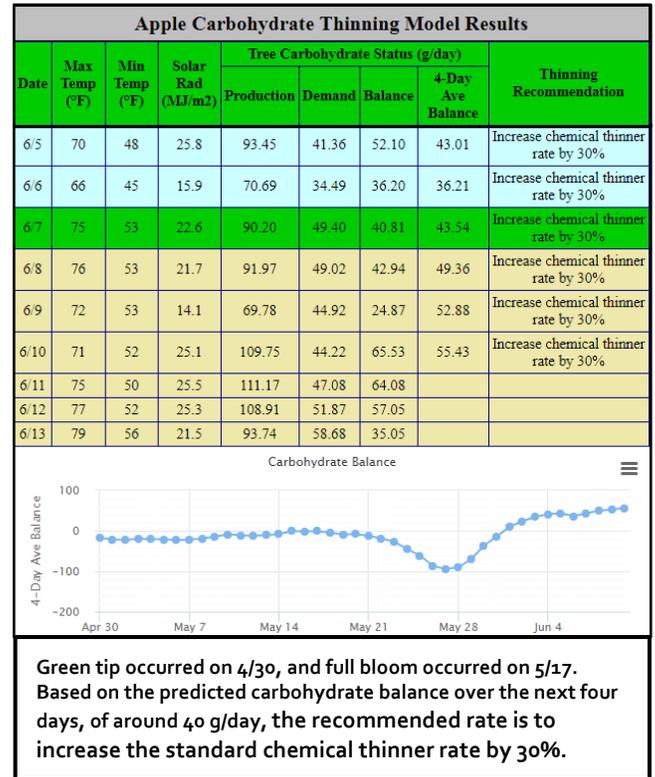


## Racine County

Current phenological stage: 14 - 20 mm fruit

Green tip: 4/30

Full bloom: 5/17

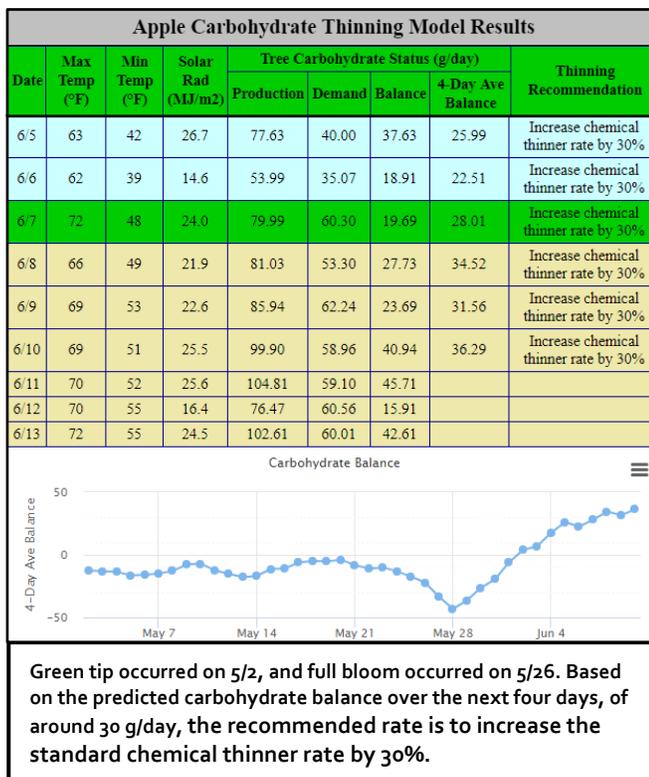


## Door County

Current phenological stage: 7 - 14 mm fruit

Green tip: 5/2

Full bloom: 5/26



## Dane County

Current phenological stage: 14 - 20 mm fruit

Green tip: 4/29

Full bloom: 5/16

