

CRANBERRY CROP MANAGEMENT JOURNAL

DIVISION OF EXTENSION

Volume 33 • Issue 6

UNIVERSITY OF WISCONSIN-MADISON

July 29, 2020

Promoting Wild Pollinators in Wisconsin Cranberry

By Nolan Amon and Christelle Guédot

Planting a pollinator garden is a great way to support some of the over 400 species of bees we have here in Wisconsin, especially if you own or manage land used for agricultural production that relies on pollination. As you're probably aware, both managed honey bees and many native bees have experienced concerning population declines in recent years. Pollinator gardens can help bee populations by providing plenty of food and nesting resources, and a safe haven from pesticide spraying. Pollinator gardens additionally provide beautiful pops of color and texture to the landscape (Figure 1), and help enhance some of Wisconsin's native biodiversity.

We've been collaborating with Central Wisconsin cranberry growers since June 2018 to study the impact that pollinator gardens have on the bee communities in cranberry marshes, and what impact these pollinator gardens may have on cranberry production. We are currently in the third year of our study, and have so far collected over 40,000 individual bees from cranberry marshes with pollinator plantings, representing more than 100 different bee species. While we can't present our final study results just yet (still collecting data as we write this), we would like to share some important lessons for success in establishing pollinator gardens and what we've been observing in these plantings.

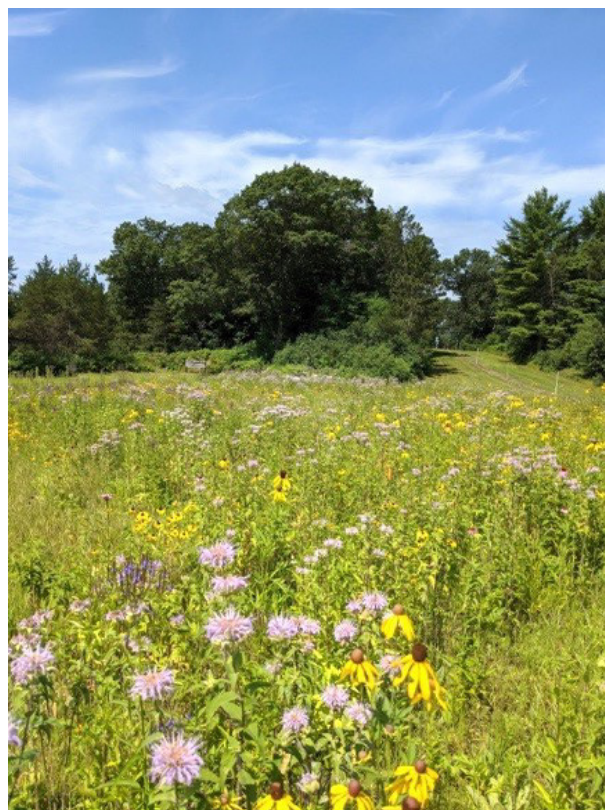


Figure 1. Pollinator garden in 3rd year of establishment. Photo by Nolan Amon.

The two most important lessons we've learned while working with growers to get these pollinator gardens up and running are that site preparation and planting time are essential for establishing successful pollinator gardens. Good site preparation entails thoroughly eradicating the existing vegetation (likely weeds) where you intend to plant your pollinator garden, either through repeated cultivation or glyphosate applications. This step takes time- cultivation happens every 2-3 weeks between spring and fall, and glyphosate should be applied three times that season (spring, summer, and fall) after mowing or burning the intended planting site in the early spring. After almost an

entire year of site preparation, the site should be tilled once again prior to seeding. Thorough site preparation ensures very few vigorously growing weeds compete with your pollinator garden seedlings and sets you up for success - we have seen pollinator gardens with native seedlings choked out by annual grasses and white clover due to insufficient site preparation. Very thorough site preparation like this isn't an absolute necessity, but it's your first step on the path towards pollinator garden success!

Planting time is another important consideration while developing a pollinator garden. There are three potential time periods for planting your garden: early spring (Mar.-Apr.), late spring (May-Jun.) and fall (Sep. 1-hard frost). While fall is the recommended planting time, each period has advantages and disadvantages, which you can read more about in a guide prepared by Prairie Nursery here. Notably, spring plantings will require irrigation during the summer of their first year, while fall plantings will not. Pollinator gardens do not require any irrigation after their first year. However, it's absolutely critical that you avoid planting during July and August. Planting during these months is essentially a death sentence for your pollinator garden seedlings, which easily fry in the hot sun, even with irrigation. Two of our pollinator gardens failed to take off in 2018 due to planting in the summer heat, and needed to be reseeded the next year. If you miss your opportunity to plant in the early spring, it's best to maintain your weed-free intended pollinator garden until the fall rather than risk a summer planting.

The seed mix for our pollinator gardens contains 4 grasses and 22 wildflower species that are perennial and native to the Central Sands area of Wisconsin, and was developed in collaboration with Prairie Nursery in Westfield, WI. Pollinator gardens are an investment in the future. During the year you plant you may see very little flowering (Figure 2). The next year, you may only see a few wildflower species (Figure 3) like black-eyed susans (*Rudbeckia hirta*) (Figure 4) or lance-leaved coreopsis (*Coreopsis lanceolata*) (Figure 5) emerge, but you will start seeing bees and butterflies hovering on flowers.



Figure 2 (left) and Figure 3 (right). A pollinator garden in the 1st (planting year) and 2nd year of establishment.

During this time, the other wildflowers in your garden are focusing on vegetative growth and developing the long root systems they need to thrive in Central Wisconsin. The second year after planting (Figure 1), you'll be rewarded in the early summer by tall spikes of smooth penstemon and blue vervain (*Penstemon digitalis*, *Verbena hastata*; Figure 6). A bit later on in July, wild bergamot (*Monarda fistulosa*) as well as yellow and purple coneflowers (*Ratibida pinnata*, *Echinacea purpurea*, *Echinacea pallida*) wash over the gardens, and attract tons of bumble bees, including the threatened yellow-banded bumble bee, *Bombus terricola*. You will hear the buzzing and bustling of all the wild native pollinators you attracted to your beautiful flowers!

We are eagerly waiting to see what other plant species emerge as the year progresses, and are excited to share those observations and the results of our research with you in the future! If you have any questions about pollinator plantings, you can reach master's student Nolan Amon at namon@wisc.edu or Christelle Guédot at guedot@wisc.edu.

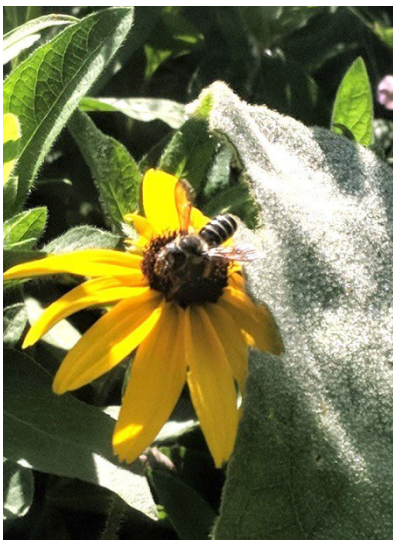


Figure 4 (left), Figure 5 (right), and Figure 6 (center). Native bees visiting black-eyed Susan, blue vervain flower, and lance-leaved coreopsis.

How to Fertilize Areas With Winter Damage or Leaf Drop

By Amaya Atucha

Many growers experienced significant leaf drop this spring, probably due to an early cold event that occurred last fall. In addition, during our last virtual brown bag seminar several growers and consultants commented on the occurrence of spring frost damage as well. One of the most common questions I get when we have these types of damages is what can we do to help the affected areas recover?

1. If you have areas with significant leaf drop do not apply extra fertilizer. The new upright will have enough nitrogen to support initial growth and if you apply additional fertilizer in the spring it will only result in a longer upright and NOT in more and bigger berries. Fertilize the beds based on the amount of fruit set you see. The only instance in which I would recommend applying additional fertilizer before bloom would be if the new growth coming from uprights looks weak and yellow. In that case apply ~5 units of actual N/ac before bloom. If you experienced leaf drop in the spring, but you had a normal upright growth with good fruit set, then continue to fertilize your beds as normal.
2. If you the beds have spring frost damage and most of the buds are dead or there are no flowers, do not apply extra fertilizer. If there is no fruit, the fertilizer will go into promoting vegetative growth and this will result in higher density of uprights, longer uprights, and delayed bud set for next season. To avoid the excessive vegetative growth reduced the amount of fertilizer based on the fruit set you have (e.g., if you have 60% of the crop you would have expected, then reduce your fertilizer doses by 40%).
3. In areas with scarce vegetation due to leaf drop weed control is more important than fertilizer application to make sure those areas are back into production the following growing season.

Below you'll see Ben Lears in two states of recovery, and Stevens with recovering runners



Observations from the Field

By Pam Verhulst

We saw our first Cranberry Flea Beetles the week of July 6 it wasn't until July 16 that we reached economic thresholds (ET). We determine ET based on sweep net counts and feeding on the cranberry vines. So far, the pressure in the areas that grower cooperators applied Nematodes is noticeably less. For example, we are only sweeping single digits in those historic hot-spots while other hot-spots on the property have 30+ flea beetles in a series with feeding on the vines. These are great preliminary observations! Shawn Steffen and his technician will work on the actual data collecting and specifics.

As you may know, blunt-nosed leaf hoppers (BNLH) have been popping up in Central Wisconsin. When they are at high populations, we observed that their feeding can cause crop reduction. Some growers have acted against them. Other growers with low numbers of BNLH but flea beetle present and they treated the third and fourth week in July. With these treatments we have seen Diazinon, Actara and Imidan work against BNLH, at the field level. We are continuing to learn more about this new "old" pest.

In the coming weeks, be aware of your market's pre-harvest intervals and their necessary time for pesticide screening. Mark "last day use" on a calendar for pesticides you usually use around this time.

We are only a couple months away from harvest!



Update from the Wisconsin Cranberry Research Station

By Wade Brockman

Here at the station we are cleaning up from some rain events. Last week we had 2" in 30 minutes alone, and it dealt damage to the new beds. We've been fixing washouts and doing a lot of ditching.

Grower Updates

Flying Dollar Cranberry

By Seth Rice

Hello everyone, not much to report here just finishing up with some more fertilizer and mowing between the rain. Berries are starting to size up pretty nice.

It won't be much longer and we will be in our hip boots harvesting! Stay safe everybody.

Gardner Cranberry

By Willow Eastling

All of our properties are out of bloom and sizing up nicely! We finished up fruitworm applications and had overall low pressure. Now for the flea beetle battle! Up north, flea beetle comes early and quick for some of our properties and we are already focused on treating them.

Aside from insects, the crews are busy wrapping up fertilizer, irrigating in between rain falls, mowing and getting trailers and berry pumps ready for harvest. Yes I said it... harvest! Can you believe it's August already?

I hope everyone is staying safe and healthy!

