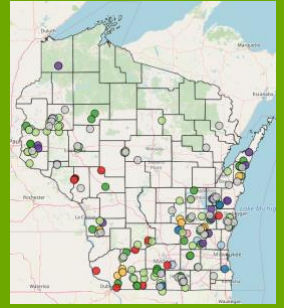


PROJECT UPDATE  
December 2024

# Wisconsin Cover Crop Data Network



## Wisconsin Cover Crop Data Network

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*A project of the Michael Fields Agricultural Institute and UW-Madison's Nutrient and Pest Management Program. We are grateful to our collaborating Wisconsin farmers and Soil Health Alliance for Research and Engagement ([SHARE](#)) project partners.*



*This sunhemp, proso millet, berseem clover cover crop mix (above) produced 7.4 tons per acre dry matter biomass in Rock County. Photo October 2024*

*A citizen science-based project to build better knowledge about cover cropping on farms around Wisconsin.*

### Project updates

We're wrapping up the fall 2024 season of surveys and sampling. We started this project in 2020 with about 15 participants, and this year registered 58 farmers growing cover crops in 60 counties around Wisconsin. After 5 years, we now have over 200 fields worth of information about how farmers around the state are using cover crops across different farm systems and climate conditions, including their incentives and the results they are seeing.

We'll crunch some of the numbers and share overall results later this coming spring, but for now we have a couple quick updates.



*Oats, crimson clover, radish, turnip, canola/rapeseed interseeded into corn late June 2024, photographed in October.*

Along with your personal biomass, nutrient and forage quality cover crop sample results we will be emailing two resources for interpreting the reports. Many of you over the years have told us how much you'd like to be able to determine nutrient credits from cover crops. It's never a straightforward calculus, but hopefully this will help. We are learning a lot from the forage quality data (see below). Please reach out to us if we can be of any assistance.

"I didn't get my corn silage off as early as I'd hoped and it ended up being too dry and my cover crops did not come up well. Most of my cover crops are max 2 inches over my entire farm right now."  
*Comment submitted late October*



*Cereal grain + winter legume in southern Rock County, no-till planted in late October following food grade soybean harvest.*

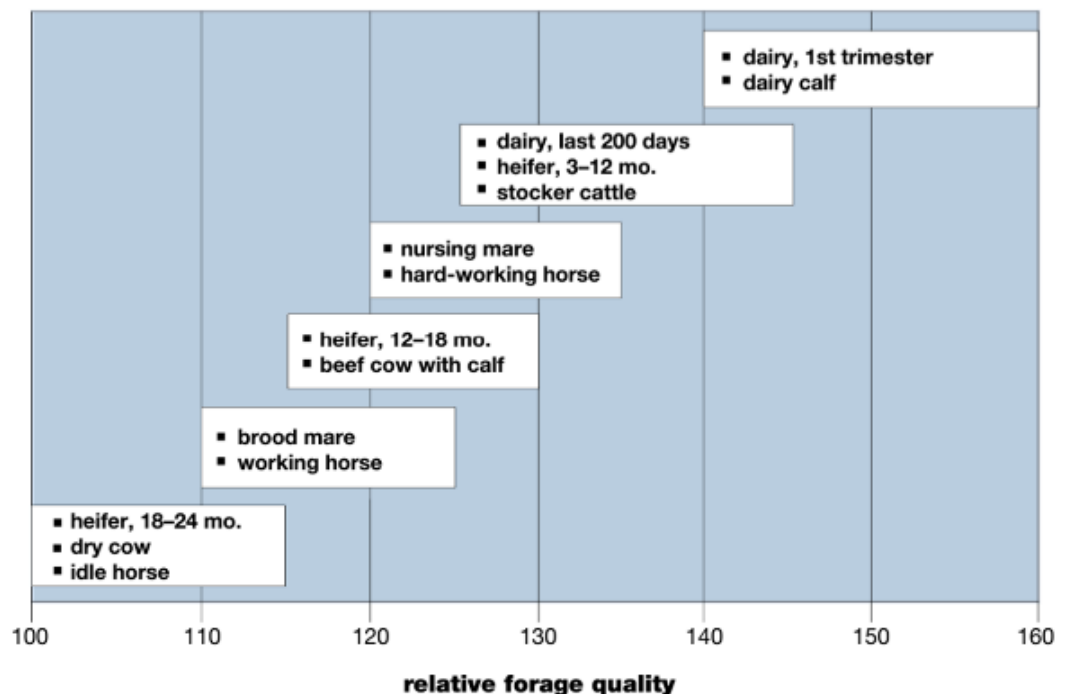
## A Warm Dry Fall

For many farmers the lack of rainfall at the end of the 2024 growing season meant you saw no fall cover crop germination for many weeks. Late planted (after corn silage) cover crops suffered the most. Those that went in after small grain harvest in September seemed to be ok. By the first good freeze, there had been enough rain in some counties to produce some cover crop growth. We are looking out to the spring sampling to see what happens with any cover crops that don't winter kill.

## Do Cover Crops Produce Quality Forage?

by Dan Marzu

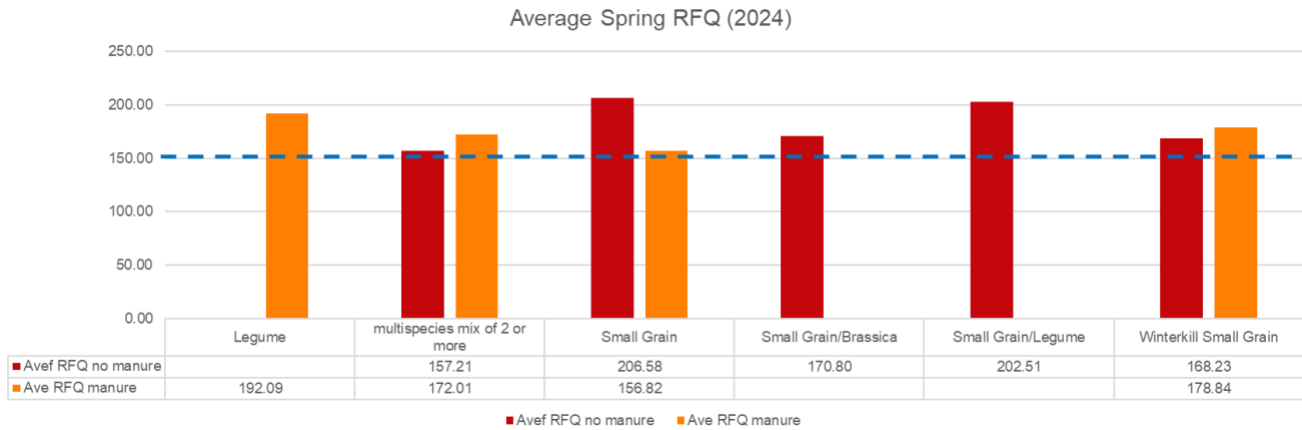
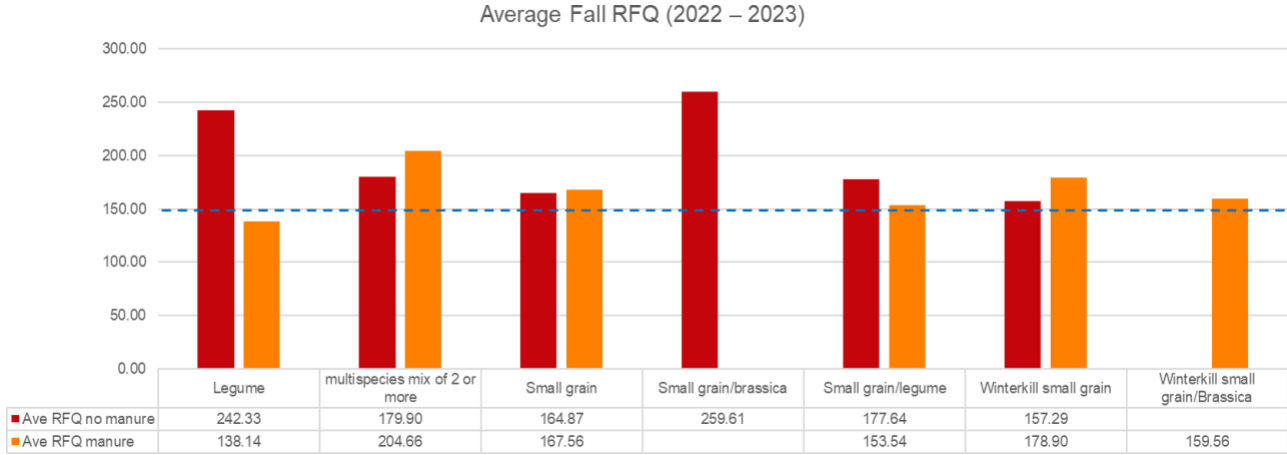
In a recent discussion I was told that the “go to” forage analysis factors for many animal nutritionists are: dry matter (DM) or the part of the forage that is not water, crude protein that measures the amount of nitrogen in the forage, neutral detergent fiber (NDF) that indicates the forage intake or the amount an animal will eat (the higher this number, the lower amount of the forage will be eaten), and for dairy milk per ton or the amount of milk produced from a ton of the forage. Another go to number is Relative Feed Quality (RFQ), which is calculated using many of the mentioned factors to provide an estimate of forage intake and digestibility.



From the [Alfalfa Management Guide](#)

For lactating dairy cows, the RFQ should be around 150 and beef cows are a little lower at 120. The question is, do cover crops produce this type of quality forage?

I took a look at the forage analyses from this project for the falls of 2022 and 2023 and the spring of 2024 and the answer for the most part is yes; you can get quality forage from cover crops. I compared average RFQs from fields spread with manure and sites without manure, by cover crop type



Looking at the desirable 150 RFQ, blue dotted line, we can see that for the most part the averages did meet or exceed the RFQ for high quality dairy forage. We have to be careful about generalizing since we are as of yet looking at a relatively small number of fields and years. Also, forage tonnage may be a factor if cover crops are mechanically harvested as forage.

Dry matter yields in the falls of 2022 and 2023 ranged from .2 tons (legumes or small grains) to roughly 1.75 tons for some mixes. In the spring of 2024, tonnages ranged between 1.5 and about 2 tons dry matter. Even with low yields in the fall, if the fields are set up to accommodate livestock there might be the possibility of using the cover crop to supply high quality feed and increase the length of the grazing season.

Please [visit the data dashboard](#) to see how we've been visualizing information you've shared as part of this project. Thanks for your participation.

Of course, whenever using cover crops as forage, always read the rotational restriction part of the herbicide label used on the previous crop. Some herbicides may not allow the cover crop to be harvested due to concerns over residues entering the food supply. This [extension publication](#) provides information on rotational restrictions for several herbicides used in Wisconsin.

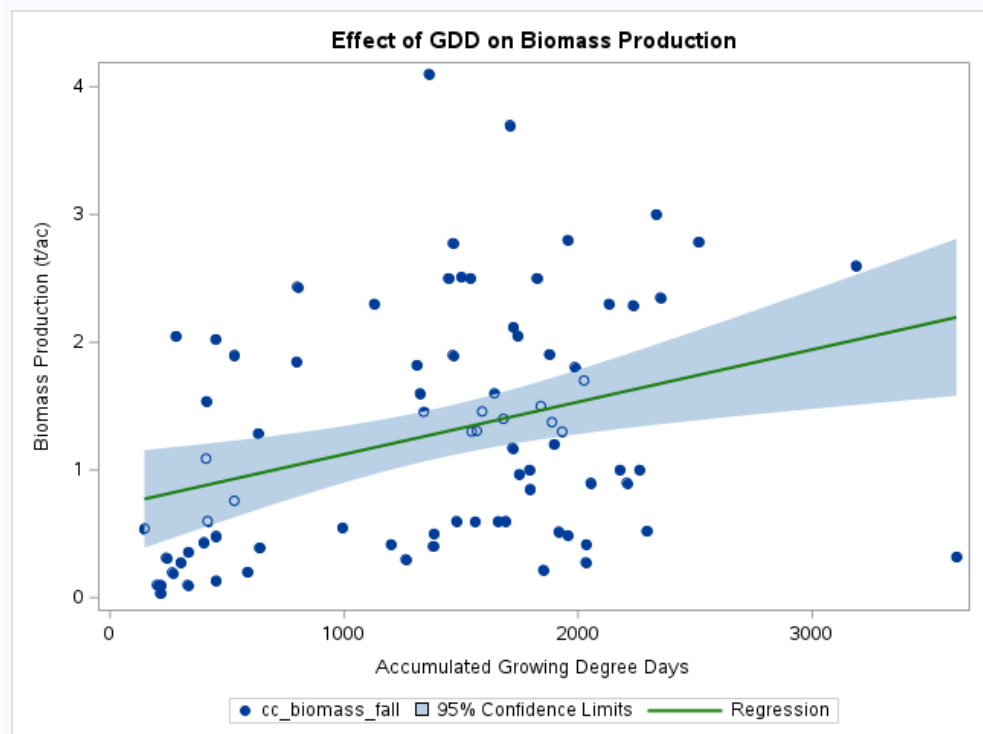
Please feel free to contact Dan Marzu, NPM outreach specialist with any questions, at [dan.marzu@wisc.edu](mailto:dan.marzu@wisc.edu) or 608-381-6702.

## Cover Crop Data Analysis Preview

by Michael Geissinger

We are working on analyzing all the data generated by this project over the past five years. By way of a quick preview, we wanted to highlight the importance of fall growing degree days for cover crop biomass. Growing degree days, or GDD, are a way of measuring how much warmth a plant receives in its lifetime. In our analysis so far, we can see that GDDs combined with soil moisture conditions have a significant (statistically proven) impact on biomass production. **For every 500 additional GDDs accumulated after planting cover crops, biomass is projected to increase about 0.492 tons/acre.** While this isn't necessarily new information, it emphasizes the importance of getting cover crops established as early as possible in field conditions with adequate soil moisture if the goal is to maximize fall biomass. We will keep sharing information as we continue our analysis.

*Effect of growing degree days (GDD) accumulation on biomass production of cover crops ( $p=0.0002$ ). While biomass is highly variable due to the influence of many factors in agriculture (i.e. soil conditions, weather, seeding, etc.), this visualization shows the positive direction of the trend line connecting GDDs and biomass produced.*



## Cover Crops for the Win

Anyone driving Highway 80 in Iowa County this past spring might be forgiven for thinking "ugly" about a certain cover cropped field. "It looked like a big mess," Tom Novak recalled. But on December 16th Tom received a call from the Wisconsin Soybean Extension Program [telling him that he'd won the "planting green" category of the 2024 Wisconsin Soybean Yield Contest](#) with his entry of 85.22 bushels per acre with LG Seeds LGS2054XF.

"It was a 6-acre field that I'd planted green with a big 2023 cover crop of oats, Sudan grass, radishes, turnips, and winter peas," Tom explained. That field had been insulated over the winter by snow such that the radishes and turnips, which had tubers underground as reserves, withstood his spring herbicide and grew tall flowers in the spring.

Tom is an active farmer participant in the [Uplands Watershed Group](#), as well as a collaborator with our [Wisconsin Cover Crop Data Network](#).



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