



NEWSLETTER

Driftless Ag Update

Ag news for La Crosse, Vernon, and Crawford Counties from UW-Madison Extension



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Here's your December Driftless Ag Update!

Hello and congratulations on receiving our December Driftless Ag Update! This newsletter is co-written by your local UW-Madison Extension Ag Educators, Beth McIlquham (livestock) and Sam Bibby (crops).

Please contact your local extension office for the print version of any article included in this newsletter.

Notes from your Regional Crops Educator- Sam Bibby

- In September a group of my colleagues and I set out to create a statewide event focused exclusively on weed control. We invited several excellent speakers, demoed equipment, and covered topics from spray nozzle style to complex herbicide interactions. By all accounts it was a huge success.
- Winter diesel tips: Summer blend diesel will typically gel around 15°F. Fueling issues above 20°F are likely water/icing in lines/filters. Anti-gel and water removal products work quite well. If you blend #1 fuel with #2 remember you can overdo it. #1 fuel does not lubricate the engine as well. If you must run a high ratio of #1 fuel, consider a lubricating additive.
- For those of you interested in our camelina cover crop project check out the pictures below taken on November 14th. We are very happy with the drone seeding in 3 of 4 trial locations. Stay tuned as we will have our year one results out this winter.



Notes from your Regional Livestock Educator- Beth McIlquham

- Beef Quality Assurance (BQA): Certification expires every three years. If you were certified in 2021 or 2022, it may be time to think about getting re-certified. Online and in-person trainings are provided. Note that in-person trainings require registration. More information can be found at <https://go.wisc.edu/jmh50>. If you are unsure of your certification status, please visit www.bqa.org/contact-us or call (303) 850-3473.
- Assessing Winter Feed Needs: After a challenging growing season, it may be a good idea to get your winter feeds tested to ensure that your animal's are getting the nutrients they need. If you have cow's, keep in mind that 75% of fetal growth happens in the third trimester. Providing adequate nutrition during that time is key.
- Disease Digest: Vaccination can be one of the most useful tools to provide protection against diseases in your herd. Along with sound management practices, herd health can soar.

Tackling Weeds with Purpose: Highlights from the 2024 Wisconsin Extension Weed Management Workshop

On September 12, 2024 the Wisconsin Extension Weed Management Team held a workshop at the University of Wisconsin-Madison Arlington Agricultural Research Station. This was a full-day workshop featuring multiple speakers, hands-on demonstrations, a weed knowledge contest, and sponsor exhibits. The event was well-attended by about 90 participants from across Southern Wisconsin and Northern Illinois.

The keynote speaker was Dr. Tommy Butts, Clinical Assistant Professor, Extension Weed Scientist at Purdue University. Other speakers included Dr. Rodrigo Werle and the WiscWeeds Team and Dr. Mark Renz from the Plant and Agroecosystem Sciences Department at UW-Madison, and Dan Smith from UW-Madison Division of Extension Nutrient and Pest Management Program.



Navigating New Technologies for Drift and Weed Control

Our first presenter, Dr. Tommy Butts, covered application technology related to drift and weed control. Butts dug into the effects of spray volume, spray pressure, droplet size, and nozzle selection on herbicide effectiveness. Participants found nozzle size and consequently droplet size to be the most valuable and applicable information. While surfactants help with droplet size and coverage, we learned that nozzle type makes a much larger difference. Changing from an XR 110025 @ 60psi to a TT11005 @ 30psi, for instance, reduced the percentage of drift-prone fines from 25.8% to 2.8% according to data presented by Butts.

Droplet size should be tailored for the specific application need; for example, larger droplets are better for canopy penetration and for pushing fungicide to the ear leaf while small droplets will keep the product near the top of the canopy. Butts has also conducted recent research comparing coverage from a drone application versus a ground rig. The results of this research showed similar spray coverage and weed control efficacy when spraying Gramoxone with either a 5 gal/acre drone application or a 10 gal/acre ground rig application; however, droplet distribution was not even across the spray swath of the drone with any combination of nozzle or carrier volume resulting in a non-uniform pattern.

Herbicide & Weed Management in Alfalfa

Dr. Mark Renz joined us to help weigh decisions related to herbicide programs and application timing in alfalfa. We learned that weed control prior to the first cut in the seeding year can increase quality but may decrease total yield due to reduced weed biomass. Predominant weed species may influence this decision based on their feed value and palatability. The most common grass herbicides are Poast and Select. When thinking about broadleaf control, farmers need to consider herbicide-resistant weeds present in their fields. Roundup-Ready alfalfa, while convenient for some weeds, is of little use against resistant waterhemp, growers should instead consider a residual herbicide, such as Warrant in combination with Roundup in a post application just after alfalfa emergence.



Dr. Mark Renz presents on alfalfa weed management strategies in Arlington on Sept. 12, 2024

Raptor is another POST-emergence option to control certain broadleaf and grass weeds; however, it must be applied after alfalfa reaches the 2nd trifoliolate stage and before weeds exceed three inches, which makes timing critical and sometimes impossible. Renz discussed that herbicide applications after the first cut in the seeding year are usually not needed if farmers have more than 4-5 plants or more than 55 stems per square foot. If the alfalfa density is lower than this, weed management is not guaranteed to increase alfalfa yield; however it may increase quality depending on weed species and pressure.

WiscWeeds Presentation

Dr. Rodrigo Werle and the WiscWeeds Team (Zaim Ugljic, Daniel Zhu, and Dr. Ahmad Mobli) highlighted a handful of current research projects and recent recommendations. They started by highlighting the importance of even spray coverage when using novel targeted herbicide application technologies such as See & Spray with the results from an experiment showing multiple nozzle activation upon weed detection translating to significantly better spray coverage and weed control when compared to single nozzle activation.

Next, they discussed research comparing Enlist One and Liberty alone with a tank mix of both. Tank mixing with both products provided better and more consistent waterhemp control. They also covered another herbicide synergistic effect, the popular atrazine + mesotrione combo for POST-emergence weed control in corn. However, with increasing restrictions on atrazine and the relatively short window for application (up to 12" tall corn) other photo-system II inhibitor herbicides may be a better option, but do they provide the same synergism with mesotrione as atrazine? Yes, results from this year's plots showed bromoxynil combined with mesotrione provided better waterhemp and giant ragweed control than either product alone. Dr. Werle highlighted some results from the continued effort to suppress weeds with a cereal rye cover crop in soybeans. He reminded growers that around 4,500 pounds of rye biomass or a thick stand of around 30-inch-tall plants is needed to adequately suppress most waterhemp and giant ragweed plants. Results from their systems trial established 6 years ago showed high cereal rye cover crop biomass not only provides weed suppression but also higher soil aggregate stability and percent total carbon.

Dan Smith finished up the WiscWeeds presentations with a timely bit on combine cleaning. We learned that for several weed species, especially some of the worst ones such as waterhemp or Palmer amaranth, a great majority of weed seeds stay on the mother plant until harvest. This is why combines are such great distributors of weed seeds. The top three locations for weed seeds to hide in combines are the rock trap, header, and feeder house. Smith mentioned he has done 19 combine cleaning clinics and 17 of those combines had weed seeds on them. The other two machines were brand new!



Dr. Rodrigo Werle answers an audience question in Arlington on Sept. 12, 2024



Dan H. Smith stresses the importance of thorough combine cleaning in Arlington on Sept. 12, 2024

Understanding The Chemistry Behind Herbicide Applications

After lunch, Dr. Tommy Butts graced us with a second presentation on the chemistry of herbicide applications. Spray water quality was a popular topic with a handful of good questions; the decision to add AMS to the tank when mixing for water conditioning was a common take-home point for participants. Butts also explained that water hardness and pH are not inherently linked like many folks assume, and it's important to get your water tested so you can correct either condition accurately. When conditioning spray tank water, it is essential to add the water conditioning agent first before any other products.

Compatibility jar tests are also a necessary step in an effective tank mix. Butts talked about the potential for herbicides to separate or precipitate but also explained how some products, especially micronutrients, may increase the fines and subsequently the drift potential of the mix. Butts had a handful of herbicide tips for us at the end of his presentation. Consider the way you load the sprayer, flush the induction tank after every product, and never add more than one concentrated product to the induction tank at once. He also noted herbicide antagonism can cause poor grass control when tank mixing grass herbicides like clethodim with auxin herbicides like 2,4-D or dicamba; consider spraying these modes of action separately.

Outdoor Demonstrations

The day concluded with demonstrations from sponsors and other partners. First, our TeeJet colleagues Dr. Debora Latorre and Kevin Humke explained their different nozzle types and showed the spray patterns using laser interception. Then the group headed outside to hear Dr. Erin Silva, Dr. Brian Luck, and Ben Brockmueller of UW-Madison discuss organic weed management and look at some of the equipment used such as roller crimpers, tine harrows, and an inter-row mower. Next was a demonstration of the new precision application technology from One Smart Spray by Aaron Hunsinger, which uses artificial intelligence-powered cameras on the spray bar to directly target the weeds. This demonstration received a lot of interest as the technology was able to identify and spray a distinct area around an identified target; check out the video [here](#). Finally, Jeremy Williams with American Drone discussed the advances being made in drone application technology and discussed the pros and cons of various drone equipment options.

Participant Response

Overall, participants were pleased with the event, as 100% of survey respondents indicated that they plan to use the information in their weed management decisions next growing season and beyond. Attendees noted that the importance of scouting fields to support weed management decisions, a perennial topic, was an important takeaway, and that the blend of industry and academic topics was valuable.

Winter Cow Protein Needs

Introduction

Every spring and summer bring new challenges to growing crops in Wisconsin. This year is no different. To optimize cow productivity, evaluating nutrient levels in winter feed for cows is necessary. All nutrients are vital in raising healthy cattle, but protein is commonly overlooked during winter. Since the growing season was challenging, supplementing protein could help maintain the performance of your herd through the cooler months. Protein supplementation can be a costly part of a nutrition plan, however, keeping feed quality high for your cows can pay off in the future.



Why supplement protein to cows?

Inadequate protein levels deprive rumen microbes of the nitrogen needed to digest forage efficiently. Feeding the microbes in the rumen is important for overall cow health. When nutrient needs are met, cows can gain and maintain body condition more easily. Correctly fed cows can produce offspring that have increased value at weaning and beyond. Steer offspring have been shown to fetch a higher value at slaughter because they earn a higher quality grade without affecting yield grade. This can be especially valuable if feeding out your own cattle but can also help increase the reputation of your cattle if they are sold to be finished elsewhere. Heifer offspring tend to have a higher pregnancy rate and tend to hit puberty earlier. To reap benefits of high-performing calves, adequate nutrition must be provided to the cow during gestation. Since 75% of fetal growth happens in the last third of pregnancy, inadequate nutrient levels during the third trimester could damage the future performance of calves.

When should protein be supplemented?

Before buying costly protein supplements, you need to know how much protein you are already feeding. Get your winter feed tested to ensure you provide adequate protein to their diets. If you identify a deficiency, it is time to investigate some options.

For the rumen microbes to do their job well, adequate protein must be fed. Actual protein needs vary based on animal size, gestation period, and lactation stage. For example, a 1,200 lb. dry cow in the last third of her pregnancy will consume 22.3 lbs. of feed on a DM (Dry Matter) basis per day, assuming a common beef cow type hay is used at 53% TDN (Total Digestible Nutrients). In this example, she will need 1.7 lbs. of protein a day. Knowing the pounds of protein needed and the pounds provided by the hay will allow you to determine how much may need to be supplemented.

What is the best protein supplement?

That depends! Protein comes in many forms such as blocks, liquids, high-quality forages, and commodity co-products. Supplementing a nonprotein nitrogen, such as urea, could be an option but be sure to avoid ammonia toxicity. Urea should never exceed $\frac{1}{3}$ of the animal's total protein requirements. Other protein options include soybean meal, alfalfa, distillers grains, corn gluten meal, and many more. Be sure to shop around to see what best fits your needs.

Is there more to know before buying?

Before buying, analyze the cost per pound of utilizable protein, not just the cost per ton of the supplement. Remember, you are buying the nutrient, so a cost evaluation should be done on the nutrient itself. Utilize this free feed cost tool provided by UW-Madison Division of Extension for guidance.

Conclusion

Supplementing protein may be necessary for this winter. Evaluate what your cows are eating for protein and other nutrients as well. A proper diet can help rumen microbes function properly, allowing cows to produce high-performing calves.

Hay sampling and forage testing for the beef cow herd

Introduction

Getting hay harvested in a timely manner has been troublesome this year, resulting in an abundance of poor-quality forage. How well will this hay meet the beef cow's nutritional needs over the winter? The old saying "You can't manage what you don't measure" fits well here. Having forage analyzed will help to determine where and when to feed different lots of hay as well as determine supplementation needs. Taking a representative sample of your various lots of hay is an important part of this process.

Ideally, as hay was harvested it was stored in a manner identified by cutting and field, or similar fields. Each of these unique lots should be sampled separately. Sampling procedure can impact how well forage analysis results match the actual quality of the hay. Doing this job right does not add much time to the process and helps ensure a good value from money spent on forage analysis and supplemental feed. There are different types of probes available, and they have been improved over the years. Built in sample collection canisters, tips that can easily be sharpened and other improvements have made them more user friendly. Cordless drills have also made this task easier than the hand crank probes many of are familiar with.

Recommendations to collect a representative sample from baled forages

- Use a hay probe! Avoid collecting samples by grabbing handfuls of forage. This often results in poor representation due to material loss (especially leaves) in the grab process.
- Check with your feed dealer to see if they loan hay probes. Some dealers may even come pull the samples.
- Use a probe designed for baled forages. Ideally the probe should reach 15 to 18 inches into the bale and have a large enough (1/2" to 3/4") opening to collect a representative sample. The tip should be sharp with no broken teeth. Too small of an opening and a dull tip contribute to poor sample collection.
- Cores should be taken perpendicular to direction that stems run. Square bales should have the core taken on the butt end and round bales core into the curved side. This ensures sampling across the forage collected in making the bale rather than an individual sheath.
- How many cores is enough? Research has shown that 20 cores per lot, each from a separate bale, provides good accuracy for forage analysis. It is important to collect samples as well distributed across the lot as possible. For example, if a lot has 80 bales, one core from every fourth bale would be a good method to collect a representative sample.
- Send all 20 cores together in the bag to the lab. Don't take a subsample of the cores, as this can introduce error and adds time.
- When sampling hay stored outside, consider how it will be fed. Spoiled feed on the outside of bales will generally be refused by cows when fed freely, so remove this spoiled layer when sampling unless you plan to use a TMR or bale processor to mix all this feed together in smaller pieces which are more difficult for the cow to sort.
- When sampling wrapped hay or baleage, tape over holes created in the plastic after taking cores to prevent spoilage.
- Timing of sampling to best represent what the livestock will be fed is as followings:
 - Baleage: Sample after fermentation is complete, typically 4 weeks after harvest.
 - Dry hay, stored inside: Sample three to four weeks after harvest.
 - Dry hay, stored outside: Sample three to four weeks prior to feeding.

What forage analysis should I get for my beef cows?

This is a common question. In most cases a basic Near Infrared Reflectance Spectroscopy (NIR) test will be sufficient for analyzing forages for beef cows. NIR tests are usually lower cost than wet chemistry tests. Visit with your nutritionist or lab you will be sending your samples to determine the name of the analysis you want done. Different labs have different names and test packages. Be sure to let the lab know if the hay is a pure legume, pure grass or a mix, as this will affect their calibration needs.

The most significant results for the beef cow herd

- Dry matter/moisture content: This is important to help determine how much of the feed to deliver, especially for ensiled feeds, and ration formulation is initially done on dry matter basis.
- Crude protein: For beef cows this test is usually adequate for formulating rations. With all the excess rain, there may be some heat damaged protein this year. Forage tests will usually report this as protein available for the cow.
- Energy: Net energy of maintenance (NEm) and total digestible nutrients (TDN) provide indicators of the energy/calories in the hay. TDN may overestimate the energy available for cows, making NEm the better metric to use.
- Neutral detergent fiber (NDF) is the best predictor of how much of the forage the cattle will be able to eat. Higher fiber content will result in lower daily intake, and vice versa.
- These results help match our hay and forage inventory to herd needs during their production cycles at the time the stored forage is fed.
- For example, lower quality forages can be used when cows are in the middle trimester of pregnancy and their needs are lowest, with better-quality forages fed during the third trimester and after calving if the cows calve before pastures are ready. Don't forget that younger animals' growth requirements or bull(s) when allocating feeds to best match their needs. Forage test results provide the information needed to determine energy and protein supplementation needs, minimizing under and over feeding and improving operational efficiency.
- While some mineral content is reported on the forage test, in most cases the best plan for addressing mineral needs is using a reputable mineral and monitor intake, making sure that cattle are consuming the recommended quantity. If fed free choice, this is as simple as recording the number of days it takes for a known number of cattle to consume a 50 pound bag. From this, you can calculate daily intake and make any adjustments from there.

Conclusion

In summary, accurately sampling forages is an important part of forage testing to meet livestock needs, and test results are only as good as the sample. Forage test results provide valuable information when allocating feed resources to feed the herd efficiently and cost effectively, all while maintaining good herd health and performance.



Beef Quality Assurance (BQA): Date and Locations Announced

Register for in-person beef quality assurance trainings. Re-certification is required every 3 years. The Equity Coop Monroe, N1365 State Road 69, will be hosting on December 10th, 2024 at 1PM.

To Register, please call: 1-800-728-2333 **OR** the Monroe County Extension Office: 608-269-8722



LISTEN: Points to consider before transitioning your dairy business to a beef operation

Creating beef-on-dairy calves can add additional revenue to your dairy operation, but if considering transitioning from a dairy operation to beef enterprise, there are several points to consider. This includes nutrition management, evaluating handling facilities, stockmanship and more.

<https://soundcloud.com/uwmadisonextensionag>



December 17-18th Wisconsin Water and Soil Health Conference

Join us at the 2024 WWASH Conference, where on-farm research meets the implementation of soil health practices. Experience engaging keynotes, interactive breakout sessions, and insightful round tables designed to deepen your understanding of agronomy, water quality, and soil health. Gain valuable insights and practical knowledge to apply on your farm or the farms you work with.

More information and registration:
cropsandsoils.extension.wisc.edu/wwash



Noontime Beef Roundup Webinar Series

The noontime beef roundup is a monthly series of timely topics for beef producers, running January through March of 2025.

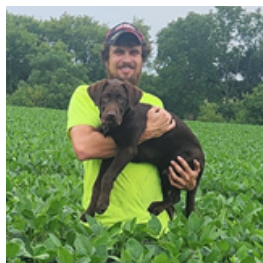
The Noontime Beef Roundup Webinar Series for 2025 will provide insights for beef producers and industry professionals. This free series will cover a range of topics critical to the success of the beef industry, featuring expert speakers and interactive sessions.

This monthly series will take place the second Thursday of each month, on Zoom, from 12:00 PM – 1:00 PM CST from January to March 2025 and is free to attend.

For more information, assistance with registering, or to request an interpreter, please contact Adam Hartfiel at adam.hartfiel@wisc.edu or call 920-647-6560 by December 20, 2024.

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