JUNE

NEWSLETTER

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

Here's your June Driftless Ag Update!

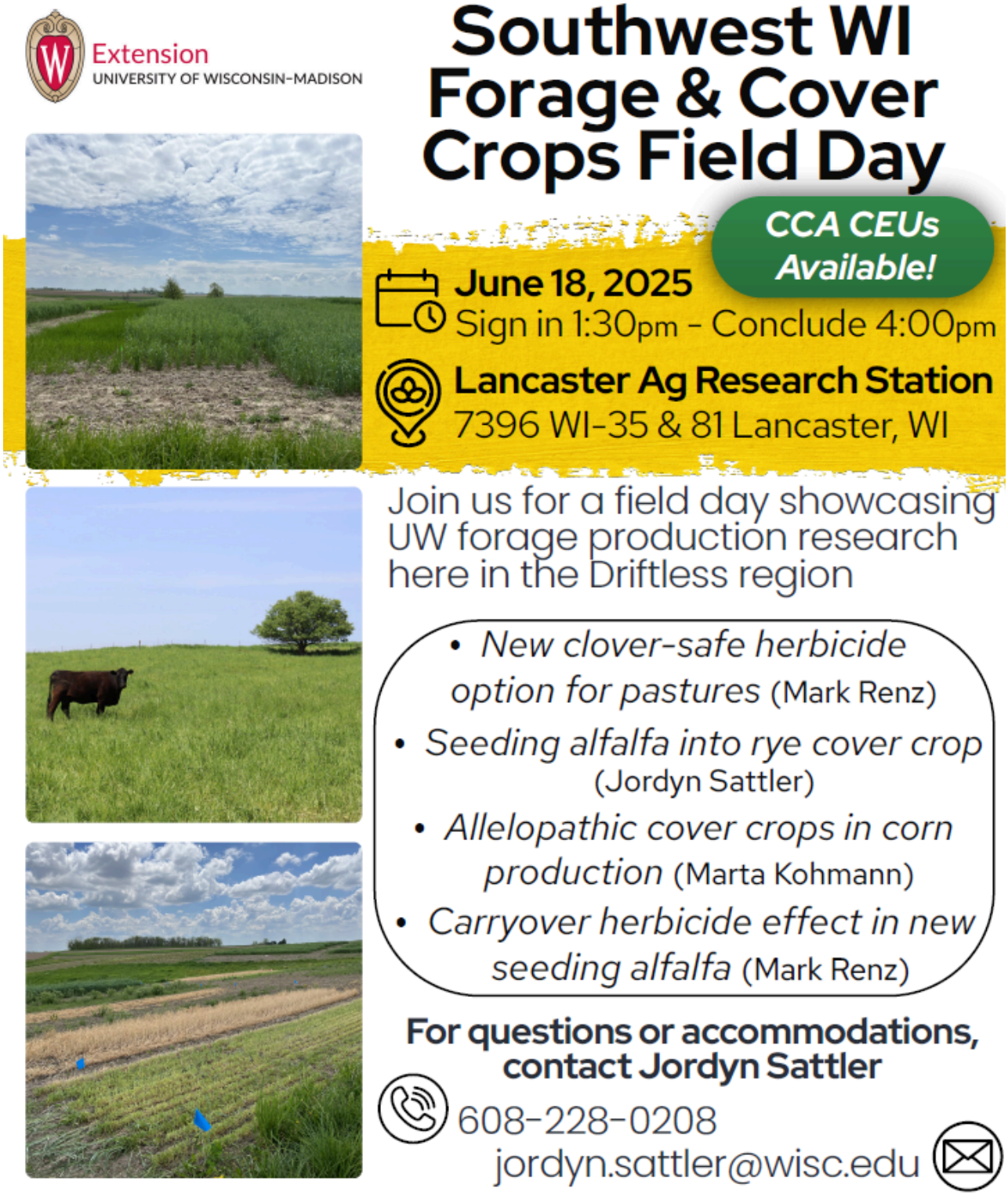
Hello and congratulations on receiving our June Driftless Ag Update! This newsletter is co-written by your local UW-Madison Extension Ag Educators, Beth McIlquham (livestock) and Sam Bibby (crops).

Notes from your Regional Crops Educator- Sam Bibby

-Winter Wheat fungicide applications should be going on soon. You should have the fungicide of your choice on the shelf ready to apply as soon as we hit the Feeks 10.5.1 growth stage. Read the article linked below for more information.
- We wrapped up year-one of our SARE funded camelina research project until harvest. Our location in Mauston showed great results, especially the drone seeded camelina which outperformed rye for NDVI values at termination. On my home farm we continue to pursue experimental seed production with camelina. We have 3 acres with a good stand and many pods. We no-tilled beans into part of the field in April with hopes of a successful relay crop. We are working on combine adjustments now and hope to harvest around the end of June. Stay tuned for a possible pop-up field day. (See photos below)
-Interested in a camelina cover crop? Reach out we are actively trying to expand our research projects related to camelina.

Notes from your Regional Livestock Educator- Beth McIlquham

-**SAVE THE DATE:** In partnership with Crawford Stewardship Project and Vernon County Land & Water, UW-Madison Extension will be putting together a workshop on Grazing Cover Crops. Join us at the Leum Farm in Vernon County on July 16. A special thank you to our partners and Ron Leum for the organizing of this event! More information to come.
-Crossbreeding Can Benefit Cow-Calf Producers: Crossbreeding is overlooked as a tool that has many benefits for beef producers to improve herd productivity. A well-planned crossbreeding program leads to improvements in both the calf crop and the lifetime of momma cows compared to straight bred cows.
-Disease Digest: The UW-Madison Extension Livestock team has created a webpage that houses resources and information on Highly Pathogenic Avian Influenza. To see where HPAI is affecting livestock in the U.S., use this interactive map. For a tighter focus on how it is affecting Wisconsin's poultry, check out this *map*. If you suspect avian flu, contact your veterinarian immediately. There have been no cases of New World Srewworm in the U.S. For animal owners of all kinds, please evalutate your biosecurity protocols.



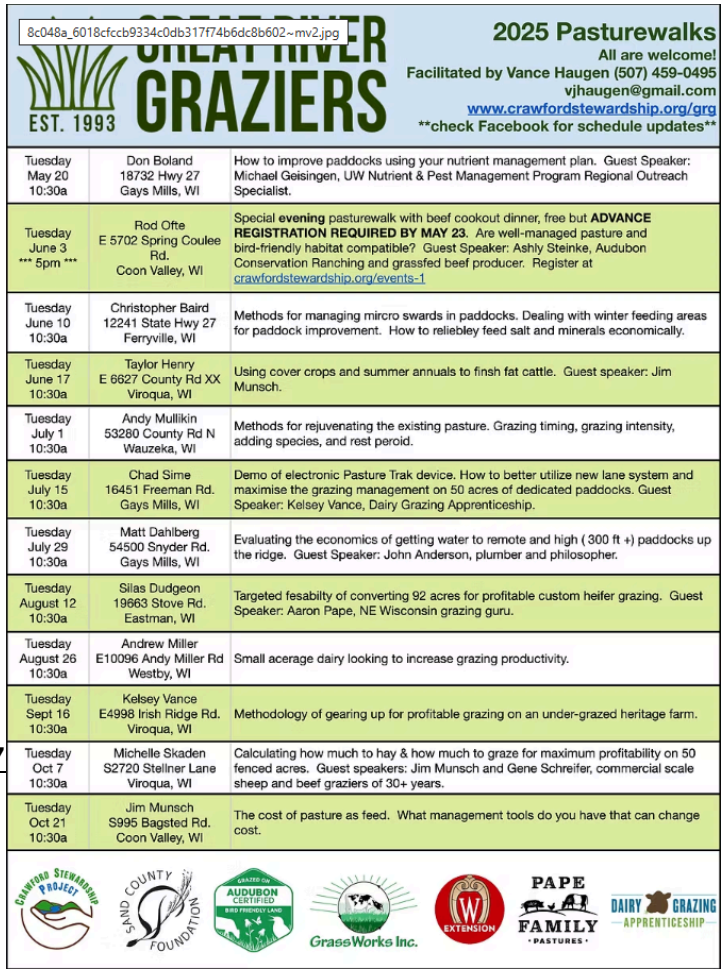
June 18: UW Forage and Cover Crops Field Day- Lancaster ARS

The University of Wisconsin–Madison will host its first annual Forage and Cover Crops Field Day on July 15, 2025, from 9 a.m. to 3 p.m. at the Arlington Agricultural Research Station. This event will bring together farmers, crop consultants, students, and ag professionals to explore the latest in forage and cover crop management.

Swine Disease Event Series

This series will focus on impactful diseases in the pork industry and are aimed at providing producers and industry personnel with information they need to deal with and/or prevent them on their farm.

https://livestock.extension.wisc.edu/2025/05/27/new-swine-health-series-helps-farmers-prevent-on-farm-diseases/



Badger Crop Connect

Badger Crop Connect 2025

Badger Crop Connect is back for 2025. Every 2nd and 4th Thursday from 12:30 to 1:30 via Zoom UW faculty and other topic experts will provide timely recommendations, share research findings and provide program updates.

https://cropsandsoils.extension.wisc.edu/programs/badger-crop-connect/?utm_source=newsletter&utm_medium=email&utm_campaign=wcm_march_ii

Spring 2025 Cattle Feeder Enterprise Projections

With cattle prices at all-time highs, forward-thinking cattle feeders and backgrounders will be doing some calculations to determine what they can pay for feeder calves, and/or what they should forward contract them for.

https://livestock.extension.wisc.edu/articles/spring-2025-cattle-feeder-enterprise-projections/

Fungicide Use on Small Grains in Wisconsin

Introduction

Small grains offer many opportunities and agroecosystem benefits within Wisconsin crop rotations. All small grains close the gap in fallow periods and provide opportunities for managing troublesome weed species, other pests, and manure. Winter annuals provide essential winter cover and reduce nutrient runoff.

Like any crop, small grains are susceptible to an array of diseases with fungal diseases being the most prominent. These diseases put grain yield and quality and straw feedability at risk. Fungal diseases thrive in moist, moderate temperature environments, thus making Wisconsin's humid springs and summers the ideal environment. Mild winters are occurring at a greater frequency creating more favorable conditions for overwintering of fungal pathogens.

Integrated with cultural control practices such as variety selection for disease resistance and crop rotation, fungicides can be an important tool of integrated disease management. Fungicides work best when applied before disease develops or very early in development. Higher fungal disease risk and the reality of narrow optimum fungicide application windows mean that scouting and monitoring during favorable disease conditions is critically important.

Grain and Straw Quality Testing

Fungal diseases can impact grain quality, with some posing serious risks to livestock feed. One such disease, ergot, affects small grains and grassy weed species, producing toxic fungal structures in place of seeds[2]. Because perennial grass species are a host, it is important to control weeds and mow field edges.

Fusarium head blight (FHB), commonly known as head scab, is another major concern for small grain producers, predominantly winter wheat growers. Not only can FHB cause significant yield decline but it can often produce a mycotoxin called deoxynivalenol (DON), known as vomitoxin. While FHB often leads to high levels of DON in the grain, DON can also be problematic in straw harvested from small grain crops, due to its high water solubility. DON can be leached from the head to the straw during rain events close to harvest.

DON Concentration for Feed and Food-Grade Grains

Testing of both the grain and straw should be done to monitor DON concentrations in these plant parts[3]. The maximum DON level in animal feed is ≤ 10 ppm for beef cattle and poultry and ≤ 5 ppm for swine and other animals[4]. Dairies require DON levels to be at less than 1 ppm for finished rations. Grain testing as low as 2 ppm can lead to dockage at the elevator or even rejection.

Food-grade small grains must meet strict quality standards. For safety, food-grade small grains are tested for DON and ergot, in addition to often being tested for genetically modified organisms and allergens. Grains meant for human consumption are limited to a threshold of 1 ppm DON in finished grain products as set and measured by the Food and Drug Administration (FDA)[5]. This low threshold means that control of the fungal diseases which produce mycotoxins is critical.

Fungicide Application and Timing for Small Grains

Proper fungicide use and timing are key to reducing fungal disease pressure. The first disease management step in small grains is using a seed treatment at planting to protect against decay, damping-off, and seedling blights caused by soil and seed-borne pathogens. Publication A3646 details available seed treatments[6]. Always refer to the product label being used in addition to this guide.

Selecting Effective Fungicides

Available fungicides belong to three mode of action groups, signified by Fungicide Resistance Action Committee (FRAC) codes. Mutations within fungal populations lead to lower product efficacy. Repeated use of the same fungicide mode of action can cause resistance. Thus, it is important to alternate modes of action or use mixed-mode-of-action products to slow fungicide resistance development.

Generally, fungicides will provide broad-spectrum control against various fungal pathogens affecting small grains. It is not recommended (and strobilurin fungicides are not labeled for use after heading) to use strobilurin fungicides on FHB because of the lack of control, and they may worsen DON levels.

Timing Fungicide Applications

Small grains' flag leaf is the most important leaf for grain yield, thus the timing of fungicide application for most foliar fungal diseases is between flag leaf emergence and flowering. However, in Wisconsin, fungal foliar disease may not be active at this time. Thus, scouting and paying attention to the weather can help make the decision to apply a fungicide or hold off for a later fungicide application.

FHB is a disease of the flower and seed. To have a positive impact on grain quality and reduce FHB infection, it is imperative to apply fungicide from the start of anthesis (50% of heads at Feekes 10.5.1 in Figure 1) to 7 days after the start of anthesis. This is the most important fungicide application to be made to small grains in Wisconsin and will be required in most years to maximize DON reduction in small grains.

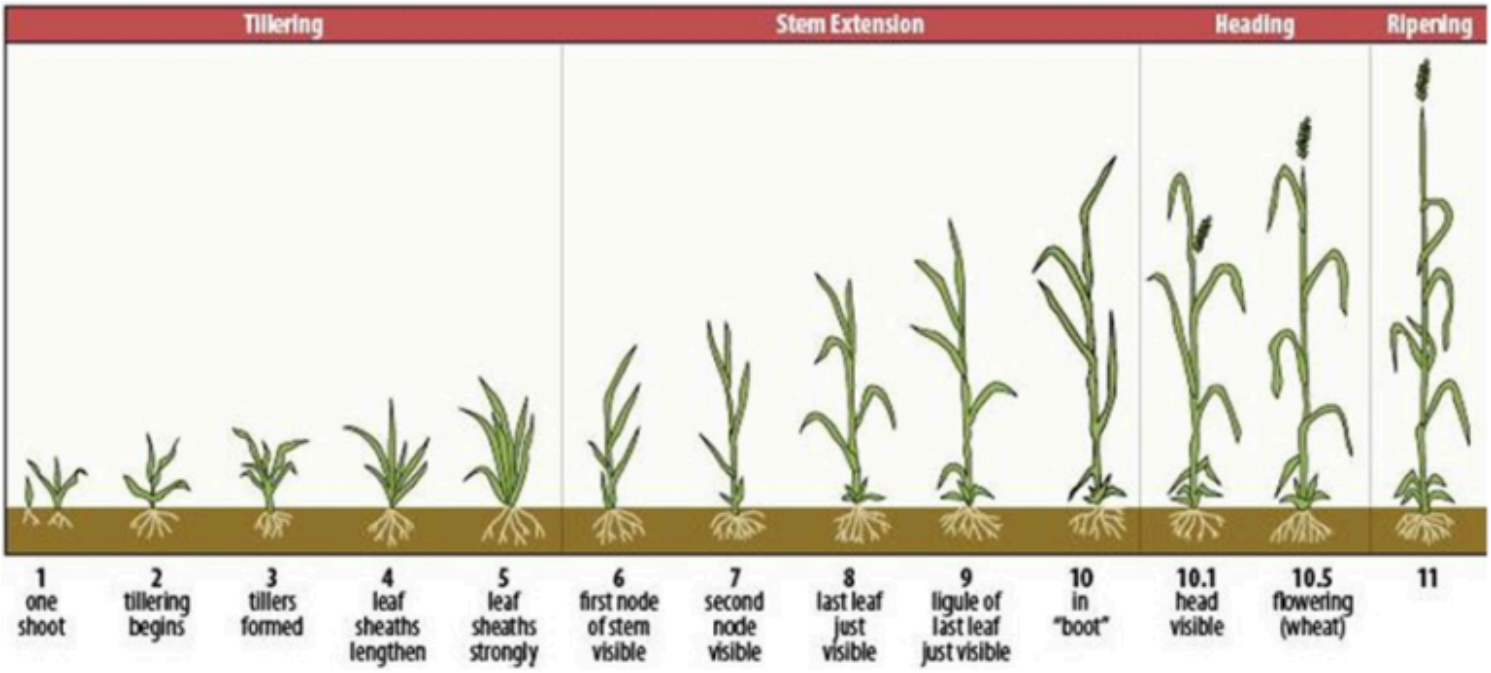


Figure 1. The Feekes Scale is often used to define plant growth stages. Knowing the growth stages is essential for proper fungicide application timing. Illustration credit: University of Kentucky.

For a more in-depth look at the different small grains growth stages, please visit the Winter Wheat Development and Growth Staging Guide.

Research in Wisconsin has demonstrated that the optimal timing of fungicide application to maximize FHB control and reduce DON in the finished grain is 5 days after the start of anthesis. Spraying earlier or later than the window described above, or after Feekes 10.5.4 (Figure 1), will reduce efficacy and may be off label[7].

Note that fungicides can greatly suppress FHB when used properly, but full control is not possible. For information on the best fungicides for FHB management or other small grains disease management in general, check out the Fungicide Efficacy For Control of Wheat Diseases efficacy table or interactive Fungicide Efficacy Tool which contains university fungicide efficacy data from across the U.S. including Wisconsin.

The minimum volume for ground spray applications is 10 gallons per acre[7]. Using higher water volumes can increase coverage within small grain heads. Using coarse sprays, lowered boom heights, slower travel speeds, and dual-angled spray nozzles will help you properly apply fungicides and achieve maximum control.
It is important to remember the following guidelines for fungicide use:

- Scout your fields! Scouting every 2-3 days will help optimize fungicide application timing. Do not apply fungicide if there is no sign of disease or conditions are not favorable for disease development. Begin scouting at Feekes 5 or 6 (Figure 1) and continue regularly.
  - Consider the risk factors for disease: temperature, humidity, field history, crop rotation, and variety selection.
  - No-till fields are at a greater risk for fungal disease because fungal bodies are not buried by tillage.
  - Small grains crops that follow corn crops are often at higher risk of fungal diseases, especially FHB

- Need help making the decision to apply a fungicide for FHB management? There is a fusarium prediction tool from Penn State University which uses weather information to help make that decision.

- Rotate fungicide mode of action or use mixed-mode-of-action products. Repeated use of the same fungicide can cause resistance, similar to herbicide and insecticide resistance.

- Follow the label. Application timing, amount, preharvest interval, and grazing and feeding restrictions are all important factors that will be listed on the label.

- If your crop plans change, make sure to follow pre-harvest intervals and any forage harvest restrictions.

Summer Annual Forages: Diversify your feed

Maximizing your forage supply is key to having a well-fed, productive herd. One way to accomplish this is by identifying and incorporating summer annual and brassica forages in your crop rotation.

When managed and harvested correctly, these options can meet forage yield goals and the nutritional needs for a variety of livestock species and categories. Depending on the forage species that you choose, there is significant flexibility in how they can be harvested, stored, and fed – including green chop, silage, dry hay, grazing, stockpiling, and windrow chopping.

Summer annuals can provide quick, substantial growth that is beneficial when forage inventory is short, while brassicas can be utilized to bridge forage needs by extending the grazing season into the fall.

What annual forage species should you select?

Selecting a forage species that meets your forage goals and growing environment is a critical step to success. Crop management recommendations, attributes, and average nutritional values are detailed below and can help you identify which forage best fits your needs.

Summer Annual Grasses

Summer annuals have significant growth during the 'summer slump' our perennial pastures go through. In addition, in the instance of wheat or alfalfa winterkill or problems with corn silage production such as drought, summer annuals can be planted to maintain forage supply. Summer annual grasses tend to grow very quickly and thrive in hot, dry weather, making them relatively drought resistant. Warm season annual pasture was found to yield more than cool season perennial pasture while having comparable nutritive value (Ritz et al., 2020). When weather conditions allow, they can boost forage inventories significantly during the summer months.

Forage Sorghum

Planting recommendations for forage sorghum

Seed after soil temperature has reached 60-65°F; plant ¾ to 1 ¼ inches deep and 2 inches in sand; seed at 12-15 lbs./acre.

Biomass accumulation of forage sorghum

7-10 tons/acre depending on temperature, rainfall, and nutrient availability during the growing season; can reach heights of 12 ft.

Uses for forage sorghum

Primarily used as silage.

Nutritive value of forage sorghum

Dry Matter	Crude Protein	ADF	NDF
35–48%	8–12%	34–40%	60–75%

Undersander et al., 1990

Sudangrass

Planting recommendations for sudangrass

Seed after soil temperature has reached 60-65°F; plant ¾ to 1 ¼ inches deep and 2 inches in sand; seed at 12-15 lbs./acre.

Biomass accumulation of sudangrass

3-4 tons/acre dry matter or 10-12 tons/acre green feed or silage.

Uses of sudangrass

Primarily grazed or used as green chop or silage.

Nutritive value of sudangrass

Dry Matter	Crude Protein	ADF	NDF
21%	11%	36%	66%

Heuzé & Tran, 2015

Sorghum-sudangrass

Planting recommendations for sorghum-sudangrass

Seed after soil temperature has reached 60-65°F; plant ¾ to 1 ¼ inches deep and 2 inches in sand; seed at 12-15 lbs./acre.

Biomass accumulation of sorghum-sudangrass

Biomass Accumulation:
4-6 tons/acre dry matter.

Uses and varieties of sorghum-sudangrass

Primarily grazed or used as green chop or hay.

BMR varieties are available. These varieties have low lignin and are highly digestible.

Nutritive value of sorghum-sudangrass

Dry Matter	Crude Protein	ADF	NDF
17%	13%	37%	58%

Heins, 2023

Pearl Millet

Planting recommendations for pearl millet

Seed after soil temperature has reached 70°F; plant ½ to 1 inch deep; seed at 15-20 lbs./acre for solid seeding and 7-10 lbs./acre if on 30-inch rows.

Biomass accumulation of pearl millet

3.5-4.5 tons/acre.

Uses of pearl millet

Primarily used for hay but can also be grazed.

Nutritive value of pearl millet

Dry Matter	Crude Protein	ADF	NDF
38%	15%	41%	69%

Jaster et al., 1985

Teff

Planting recommendations for teff

Very small seed; seed when soil temperatures are above 55-65°F; plant no more than 1/8" deep; seed at 8 lbs./acre.

Biomass accumulation of teff

1.3 to 5.3 tons/acre (SDSU).

Uses of teff

Primarily used for hay but can be grazed.

Nutritive value of teff

Dry Matter	Crude Protein	ADF	NDF
29%	14%	40%	62%

Heins, 2023

Foxtail Millet

Planting recommendations for foxtail millet

Seed in June or July to ensure soil temperatures have warmed; plant ¼-½" deep; seed at 20-30 lbs./acre by broadcasting.

Biomass accumulation of foxtail millet

1-3.5 tons/acre (Sheahan, 2014).

Uses of foxtail millet

Primarily used for hay; best when mixed with other species due to less nutritive value.

Nutritive value of foxtail millet

Dry Matter	Crude Protein	ADF	NDF
40%	8%	33–44%	48–72%

Heuzé et al., 2020

Beware of Nitrates and Prussic Acid

During periods of drought or plant stress, warm season grasses can accumulate nitrates. Avoid heavy nitrogen applications to reduce excess nitrates in the soil. Nitrates can poison livestock when consumed at high levels. It is important to note that forages will not decrease nitrate levels when preserved as hay. When silage is fermented completely, nitrate levels may drop by 50% but will not be fully reduced.

Another risk that is possible with sorghum species and hybrids is prussic acid poisoning. Sorghum plants that are less than 24" tall or have new tillers have a concentration of prussic acid that can result in cyanide poisoning. When growth is stunted by drought or plant tissue freezes, dhurrin in plant tissue is converted to cyanide. Prussic acid dissipates through hay curing and silage fermentation after one to two weeks. When grazing, animals must be removed when stands are smaller than 8", to avoid grazing of young, basal tillers, or after a frost for at least a few days.

If you have any concerns regarding the accumulation of nitrates or prussic acid in your harvested forage, either test the forage to identify issues or avoid feeding potentially contaminated feed until the chance of poisoning has subsided.

Brassicas

Most commonly used for grazing, brassica species provide very high-quality forage, especially at the end of summer and into fall. One common place in crop rotation for brassica establishment is after winter wheat harvest as brassicas grow in cooler temperatures. Brassicas can be drilled into wheat stubble and allow for grazing into November. Grazing can begin when the plants reach 12 inches tall, which can start occurring 60 to 70 days after planting.

Nutritive value of brassica above-ground biomass

Total Digestible Nutrients	Crude Protein	ADF	NDF
65–80%	20–25%	12–18%	18%

Undersander, 1996; Dillard et al., 2019

Turnips

Planting recommendations for turnips

Seed at 1.5 to 2 lbs./acre

Biomass accumulation of turnips

3.5 tons/acre dry matter.

Kale

Planting recommendations for canola

Seed at 3.5 to 4 lbs./acre

Biomass accumulation of canola

6 tons/acre dry matter.

Canola

Planting recommendations for canola

Seed at 3.5 to 4 lbs./acre

Biomass accumulation of canola

4 tons/acre dry matter.

Notes about feeding brassicas

Brassicas are very high in protein but lack fiber. For this reason, an animal's diet should not consist of more than two-thirds brassicas, and supplemental roughage is recommended. Nitrate poisoning can also be a concern with brassicas. Several other conditions such as polioencephalomalcia (PEM), hemolytic anemia, and pulmonary emphysema can occur if livestock consume too many brassicas in their diet (Arnold & Lehmkuhler, 2014). Turn animals onto brassica pasture slowly and monitor them for any signs of distress.

Summer annuals and brassicas are great options to both diversify your forage feeding system and incorporate different species into your crop rotations. It is always recommended to have these forages tested for nutrient content after harvest to ensure the nutrients provided are appropriate for the species of livestock that will be consuming the forage. Working with a nutritionist is a good step to matching these forages to the appropriate animal species and category.

Managing Internal Parasites in Cattle

Introduction

Gastrointestinal parasites, also known as helminths, nematodes or stongyles, deprive cattle of nutrients and can reduce milk production and daily weight gain. Effective parasite management includes pasture management and strategically deworming cattle at specific times of the year to minimize parasite populations in both cattle and on the pasture. Deworming is beneficial for beef and dairy operations, provided it is done correctly with effective products. However, due to anthelmintic resistance, relying solely on dewormers is insufficient.

Which cattle should be dewormed?

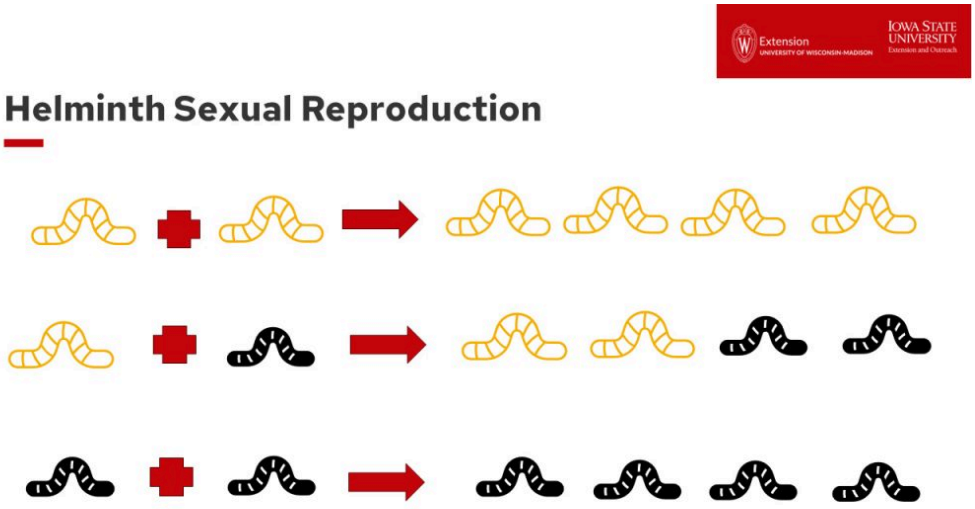
Infective helminth larvae infest growing forages, exposing cattle during grazing. Young and high-producing cattle grazing pasture benefit the most from controlling their parasitism. Cattle develop resistance to gastrointestinal parasites as they age, and with good nutrition, it is possible to overcome parasite levels. Most third lactation and older cattle do not need deworming, while first and second lactation animals may benefit from pre-calving or post-calving deworming. Monitor their body condition, health, and production, and use fecal egg counts (FEC) to determine when deworming is warranted.

Cattle housed in dry lots typically remain parasite-free. Test purchased cattle or those with unknown histories using FEC to measure parasite levels. If needed, deworm them before placing them in a dry lot and use FEC-reduction tests (FECR) to monitor anthelmintic effectiveness and determine if further deworming is required based on body condition scores (BCS) and production measures.

Which cattle Should NOT be dewormed?

To maintain a population of parasites that are susceptible to anthelmintics, ensure that some animals in your operation remain untreated. Untreated animals, known as refugia, host the production of anthelmintic-susceptible eggs on pasture. These eggs eventually develop into anthelmintic-susceptible adult parasites. Mating with other susceptible parasites within the animals results in offspring that can be effectively controlled by anthelmintics.

Parasites not killed by anthelmintics likely have resistant genetics to the product used, which they pass to their offspring. Mating anthelmintic-resistant with susceptible parasites provided by refugia produces a mixed population of offspring. This mixture helps maintain some efficacy of the deworming agent and slows the progression of complete resistance to the product in use.



(Figure 1) Each parent contributes their genetics to their offspring. For example, 'golden' helminths that are each susceptible to a dewormer, left untreated and allowed to mate (top row), will produce offspring that are susceptible. Worms that survive treatment have a mutation that provides genetic resistance to the dewormer. Mating susceptible 'golden' helminths with a resistant 'black' helminth (middle row) result in a mixed population of offspring. Eventually, with repeated use of the same deworming product or not using other intervention strategies, resistant breeding with resistance occurs, and that class of dewormer will no longer work (bottom row).
From Parastie Patrol: Mastering Fecal egg Counts for Healthier Herds and Flocks, UW-Madison Division of Extension and Iowa State University Extension

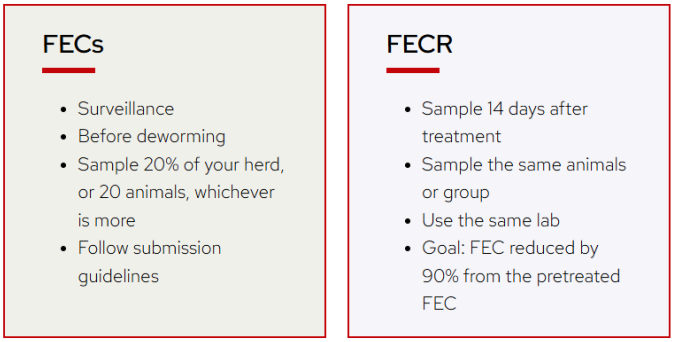
Maintain refugia in third lactation and older beef and dairy animals who are most able to handle a parasite population. Use FEC to measure parasitism and determine the need for deworming as dairy calves leave the hutch or during their first co-mingling event. For those raised on dry lots, follow the earlier-stated deworming recommendations.

Do not deworm pastured, suckling beef calves that weigh less than 200 lbs. since they receive most nutrients from their mothers, not the pasture. Wait to deworm heavier beef calves before weaning to reduce their parasite burden during the stress of weaning. Depending on how much nutrition they received from sucking, calves at weaning may have low helminth populations. However, the more weaned calves graze, the more exposure to parasites they will have. Wean them on dry lots or pasture that has not recently been grazed or has regrown following hay making. Base your deworming decision on FEC, the calves' BCS, and rate of gain.

As FEC results warrant, reduce internal parasite levels from the previous grazing season by strategically deworming in the fall and before spring pasture turnout. Ensure that the next grazing animals following recently dewormed animals are older, more resistant animals.

Pastured stockers/backgrounders or post-weaned youngstock raised to pre-finish or breeding weight have the highest risk of disease and production losses due to parasite burdens. Right before grazing begins, measure their FECs to determine parasite burdens and use FECR to know what survives following treatment. Deworm calves before their first grazing event, then four weeks after, and again four weeks after that. Known as the "0-4-8" thumb rule, this strategic deworming will reduce pasture contamination throughout the grazing season. Alternatively, with managed grazing, use BCS and FECs to guide deworming decisions; it is less labor intense and economical to pick up feces and test, then to work cattle for blanket treatment that may not be needed.

Testing Cattle



Stuttgen, Mills-Lloyd. Deworming: Relationships, Resistance, Refugia. 2015

Use influences efficacy

Read the anthelmintic label for proper storage, dosing and withdrawal time. Understand the label's effectiveness for the life cycle stage you are treating. Weigh animals and correctly administer the correct dose. Both overdosing and underdosing lead to the development of anthelmintic-resistant parasites. Injectable and orally drenched products that are correctly administered are more likely to provide an effective dose compared to feed through or pour-on products. If you use a pour-on, then administer it correctly to all cattle in that group. Cattle will groom their neighbor and lick off the product; therefore, untreated cattle cannot remain with the treated ones; the whole group becomes underdosed. If you choose to use a feed-through product, make sure there is adequate bunk space, so all cattle get their dose. Use FECR to determine the product's and/or your administration's effectiveness.

Summary

Effective integrated parasite management in cattle involves using lab tests like FECs to assess parasite levels while considering seasonal variations and the parasite life cycle. Strategic deworming using properly administered anthelmintics, and pasture management are crucial. These steps help maintain cattle health, improve feed efficiency, reduce future pasture contamination and help preserve anthelmintic efficacy.

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