

# NPFA UPDATE

SUMMER '23

A QUARTERLY NEWSLETTER FROM THE  
NORTHERN PLAINS FORAGE ASSOCIATION

## WHO ARE WE?

NPFA is a grassroots association open to forage growers, buyers, industry partners, and anyone with an interest in forages. We are creating a networking and education group focused on annual forages/cover crops, alfalfa, silage, grazing systems, and more!

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## WHERE TO FIND US



@npforage

Email: [npforage@gmail.com](mailto:npforage@gmail.com)

Membership Sign-Up:

<https://sdstate.questionpro.com/NPFA>



## COVERING THE PILE

By Dr. Warren Rusche, Sara Bauder, and Kiernan Brandt; SDSU Extension

### Key Points

- Covering silage piles to exclude oxygen is critically important to control nutrient loss in silage.
- In research silos, covering with white-and-black plastic with or without oxygen barrier film was effective in minimizing storage losses.
- Condensed distillers solubles (abbreviated as CDS syrup), a by-product of ethanol production, was no better than using no cover at all in preventing organic matter losses.
- Silage inoculants improved fermentation when used in covered silos but were ineffective in uncovered silos or when syrup was used.

Silage plays a key role in supporting beef production in South Dakota. Whether the crop is corn, sorghum, or small grain, ensiling provides a method to preserve the crop in a palatable form that provides a great deal of flexibility to livestock producers.

However, to optimize nutrient capture, the entire harvest and storage process must be well-managed. Everything, including hitting harvest moisture targets, managing cut length, and achieving the correct bunker or pile density, is important in achieving a rapid pH drop and preserving crop nut

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## NPFA ANNUAL MEETING DEC. 1

Join us for the 2023 NPFA Annual meeting in the Sioux Falls area! We are excited to bring you a great forage speaker line-up, networking opportunities, and a brief business meeting. Please consider coming and inviting your friends and family- the meeting is open to everyone! \*We are currently working on planning and logistics- please check our Facebook page for updates!



## “COVERING THE PILE” CONT'D



Unfortunately, covering a silage pile takes labor, one thing that is nearly always in short supply. First, the tarp needs to be put in place, followed by tires or some other method to secure the tarp in place. So, it is not surprising that farmers have sought out methods that reduce the amount of labor required or decide that the losses are acceptable and do not cover the pile at all.

### Investigating Covering Strategies

SDSU Extension Specialists (led by [Sara Bauder](#) and [Kiernan Brandt](#), along with [Warren Rusche](#)) set out in 2022 to test how much loss could be occurring following these strategies. They conducted a silage storage experiment using laboratory silos (3-foot long PVC pipe), using four different covering strategies: 1) no cover, 2) covered with CDS syrup, 3) covered with white-black plastic, and 4) covered with white-black plastic plus an oxygen barrier film. Each of these treatments were tested using corn silage with or without an inoculant applied.

Corn silage harvest occurred in August 2022. The corn was chopped to a one-half inch length of cut with a 66% harvest moisture content. The silage was packed into 3-foot by 8-inch PVC tubes to a packing density of 15 pounds of dry matter (abbreviated as DM) per cubic foot. The silage was allowed to ensile for 104 days before being opened, sampled, and analyzed.

### Results

Inoculation did improve fermentation in the silos that were covered with one of the two forms of plastic. However, inoculated silage stored in uncovered silos, or when covered with CDS syrup, was no better than uninoculated.

The combination of white-black plastic plus an oxygen barrier did result in greater lactic acid content, indicating improved fermentation compared to white-black plastic alone. However, organic matter recovery was similar between the two forms of plastic covering.

Organic matter losses were considerably greater, however, for uncovered silos and those covered with CDS syrup. In fact, using syrup was numerically worse than doing nothing at all. Organic matter losses relative to the plastic covered silos are shown in Figure 1.

In this chart, ash content is shown as a constant amount. In the uncovered and syrup, ash content as a percentage increased, indicating that there was a loss in organic matter.

### Bottom Line

Farmers spend too much time, money, and resources to produce feed for their livestock only to lose it to spoilage. To best preserve nutrient value, there are no shortcuts. Every step needs to be taken to the best of our ability, and that includes using research-proven silage harvest management, like using effective covering methods.

## CURRENT NPFA BOARD MEMBERS

- President: David Elliot, Drumgoon Dairy, Estelline, SD
- Vice President: Jeff Jackson, Croplan Alfalfa and Forage Specialist/ forage producer
- Secretary: Open Position
- Treasurer: Mark Rogen, Boadwine Farms, Baltic, SD
- Mike Bettel, Dellait Forage Consultant & Dairy Nutritionist
- Justin Fruechte, Millborn Seeds Ag Product Expert/ forage producer
- Dan Funke, forage producer, Larchwood, IA
- Paul Hahn, CHS Agronomy Sales Representative
- Dallas Henry, forage producer, Highmore, SD
- Al Lenhart, KWS Cereals Regional Sales Rep/forage producer
- Brent Van Middendorp, Animal health & Management LLC Nutrition Consultant/ forage producer



## FIVE “RANCHER RULES” (FIVE RANGE MANAGEMENT PRINCIPLES)

Excerpts of an article by Dr. Krista Ehlert, SDSU Extension Range Specialist

### Adaptive Management

The first principle is adaptive management. Producers should always be ready to implement adaptive management to adjust to environmental and industry changes. As the industry changes and continues to evolve, it is important to have an open mind about new ideas, especially with technological advancements. However, be sure to weigh out what will work for your operation before adding it. Adaptive management also involves monitoring rangelands throughout the year and adjusting management based on what the land is telling you from the collected data. An example of applying adaptive management in your operation is adjusting your stocking rate mid-grazing-season due to low forage production caused by drought (See Figure 2, R2 Loop).

### Grazing Plan

The second principle is to create a rotational grazing plan, with plan being the keyword. A grazing plan or system is a guide to follow throughout the grazing season to ensure your rangeland is being properly grazed (at the right time, for the correct duration, with the proper number of animals) and receiving an adequate recovery period to promote the native plant community. With any grazing plan, producers must be ready to implement adaptive management and make changes if necessary. Stocking rates should be adjusted from year to year to match fluctuations in forage production and carrying capacity. A grazing plan should be changed from year to year to ensure different plants are being grazed at different times throughout the season. In essence, “don’t do the same thing at the same time in the same place two years in a row.” Your grazing plan not only needs to fit the type of land you are grazing, but also your management style (See Figure 2, B1 Loop).

### Ecosystem Biodiversity

The third principle is to promote ecosystem biodiversity. Ecosystem biodiversity is the basis of all holistic management. It helps keep all parts of the system (soil, plants, animals, humans) intact and functioning. Having a diverse rangeland will lead to a diverse animal community, both above and below ground. Insects and microorganisms feed on different types of plant roots and root exudates; wildlife and pollinators utilize various plants; even particular livestock species graze different plant species. Ecosystem biodiversity is key to an operation’s success during challenging years. For example, in a drought, some plants may never come out of the dormant state, while others handle it quite well. Having a diverse plants species will increase the availability of palatable forage, that more adequately meets livestock nutrient requirements (protein and energy), for grazing throughout the season (See Figure 2, R5 Loop).

### Residual Forage

The fourth principle is to leave enough residual forage on top of the soil to keep the system functioning properly. Residual forage or residue (commonly referred to as litter) is a critical part of the ecosystem, because it protects the soil from water and wind erosion. Residue also promotes water infiltration, reduces water loss from evaporation, maintains soil temperature, increases soil nutrients and helps sequester carbon dioxide in the soil. Leaving adequate live plant residue (green leaf) after grazing is also crucial to help plants regrow between grazing periods (See Figure 2, R4 Loop).

### Climate Ready

The fifth principle is to make your operation climate ready. To be climate ready, your operation should have a plan in place for the “what if” scenarios, such as drought, flood, fire, or other natural disasters. All of these should be part of a larger whole-ranch plan that includes management decisions to be made in good and bad years. Ideally, it is a plan that allows for adjustments from year to year based on careful monitoring (see Figure 2, R3 Loop).

## FROM THE BOARD...



As we enter September, we are reminded of what is to come with (some) cooler mornings and shorter nights. For many, the summer is a blur of mowing, baling, chopping or whatever medium of forage-based torture you prefer. For most dairy farmers, the summer was just a method of mental desensitization to the main event, corn silage season.

Covering the corn silage pile, to me, is my Superbowl each year; 10-14 days where I need heightened attention to detail and the ability to manage the odd hours and odder issues a silage crew can get itself into. The result (most years) is a stable source of high-quality forage that many years can price security to the ration. Failure to plan or unexpected weather events can result in painful purchases of alternative feed sources, and most times, at a higher price. When the pile is covered and the last tire is thrown, it is a feeling of annual peace knowing you have done all you can to ensure your operation runs smoothly for the coming 12 months. It is a point of reflection as to the process in procuring your forage. What methods worked and what situations did not.

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## GENETIC ADVANCEMENTS OF ALFALFA

By Jeff Jackson, NPFA Board Member- Croplan Alfalfa and Forage Specialist/Producer

As cattle producers we are innovators and forward thinkers when it comes to genetic improvements. Technologies such as embryo transfer, artificial insemination, and genomic testing have been adapted to progress selected genetics in our herds. We are also quick to buy herd sires that are out of the hottest bull in the semen catalog and study EPD profiles when making purchases. When it comes to livestock we believe that forward progress happens through genetic selection, but do we believe that when it comes to Alfalfa?

In 1953 Vernal alfalfa was released by the University of Wisconsin. It is a winter hardy variety with below average yield and below average quality when compared to many new varieties; yet, Vernal is still extremely popular and requests for Vernal rival the amount of our improved varieties. To put this in perspective, in 1953 the champion Angus Bull was sired by O Bardoliermere at the Chicago Livestock Exposition. I'm certain O Bardoliermere was a heck of a bull for his time, but cattle breeders aren't searching his for semen to use today.

So why would you invest in a newer alfalfa variety when the one your Grandpa used did just fine? First off, Vernal along with other older yet popular varieties such as Wrangler and Ladak all have a Fall Dormancy of 2.0. Fall Dormancy is a measurement of how much growth the plant exhibits late in the year. Ratings range from 1 to 11, with 1 being the most dormant or showing the least amount of growth and the end of the growing season. In the Midwest we've improved winter hardiness of varieties so that we can now grow alfalfas with Fall Dormancy scores of 4 to 5 rather than 2. This advancement proves to push yield on those fields. If you were selecting a bull to increase your weaning weights you wouldn't find one with a below average WW EPD, so don't select an alfalfa variety with a low FD score if you want to increase yield.

I think that the biggest challenge for believing in genetic improvement of any type of forage is that we rarely measure it. We always sell calves by the pound or corn by the bushel, but when we keep and feed our hay our measurements are very general. A common term for measurement on farms is "about that many bales on those acres." That's a large weight range and rarely has an impact on how confident you were on the variety's performance. I looked back on UNL and U of Wisconsin alfalfa trials and on average top varieties outperformed others by 2 ½ tons/acre. In the life of that field that'll give you 12.5 tons/acre more! At \$200/ton hay, that gross value gives you \$2500/acre more!

Since it is field planning time, plan on investing in improved genetics for your new alfalfa field. The breeding advancements for yield, quality, and disease resistance will all boost the value of your field.

## FROM THE BOARD CONT'D

Our organization has grown very much like a corn silage crop, slowly then quickly with great memories along the way. In July, we co-hosted an outstanding Forage Field at SDSU Southeast Research Farm in Beresford discussing sorghum/sudan grass varieties and approaches to harvesting and grazing. Board members Jeff Jackson and Dan Funke did a great job going over each variety and the pros and cons to each. We hosted over 80 attendees with the help of I-29 Moo U, SDSU Extension, and UNL Extension. In August, NPFA ran a booth at Dakotafest in Mitchell showcasing various silage samples from my farm, Drumgoon Dairy. For three days we met with various farmers and industry folk educating on the potential uses of each silage along with what NPFA is.

To all, I wish for you a safe and prosperous harvest season. Acknowledgement of your coming sacrifice of many late nights, time away from family and social events. Whether you are in a piece of equipment all day or running for parts or supplies in a pickup, or most importantly the person that makes sure everyone gets fed. You have made it to your own personal Superbowl with the collective efforts of yourself and the team you have in place.

David Elliott, NPFA Board President



## MEET OUR ASSOCIATE MEMBERS

Being a new, grassroots organization, we have relied heavily on sponsorships, goodwill, volunteers, and associate members. We would like to specifically recognize our associate members who have gone above and beyond to support the Northern Plains Forage Association in its infancy! If you would like to see your business or operation listed here- contact us!



A big thank you to our associate members, members and supporters as we reflect on our first summer programming season. The Forage Field Day was held in partnership with SDSU Extension, UNL Extension, and I-29 Moo University on August 7 near Beresford, SD. We hosted over 80 attendees that networked and learned about sorghum production practices and forage equipment. The day was a huge success and we look forward to plans for next year! In addition, board members made connections with growers across the state at Dakotafest, where an NPFA booth could be found in the SDSU Extension tent. We are currently working on our annual meeting and events for next year. If you would like to see NPFA represented at a meeting in your area, please let us know!

## UPCOMING REGIONAL FORAGE-RELATED EVENTS

- UMN Soil Solutions Field Day- Sept. 7, Morris, MN
- SD Grasslands Coalition Grazing School- Sept. 12-14, Oacoma, SD
- U of WI Manure Composting Field Day- Sept. 12, Stoughton, WI
- Southeast SD Research Farm Fall Field Day- Sept. 14, Beresford, SD
- NDSU Cover Crops, Forages, and Intercropping Field Day- Sept. 19, Fargo area
- Biologically Effective Management of Grasslands Workshop- Nov. 7-9, Murdo, SD

\*This is the best list available at time of publication- if you would like a forage-related event listed here, please contact Sara Bauder at [sara.bauder@sdstate.edu](mailto:sara.bauder@sdstate.edu).