

Central Grasslands Forum



NDSU Central Grasslands Research Extension Center
Streeter, ND 58483 701-424-3606

NDSU NORTH DAKOTA
STATE UNIVERSITY

Summer 2016

Volume 3, Issue 3

Range Management School Set for Summer 2016



The registration fee is \$150 for the first person and \$75 for each additional person from the same operation if paid by Aug. 1. Students pay \$75. After that, the fee is \$200 for the first person and \$100 for each additional person from the same operation. The student fee is \$100. Registration is limited to 20 operations. Meals and lodging are included in the registration fee. Camper hookups are available.

Students who attend will be eligible to receive one credit from North Dakota State University or Dickinson State University. The course is listed as Advanced Range Management Principles (ANSC 496 and 695) in the Animal Science curriculum at NDSU.

For more information or to register, contact Fara Brummer at fara.brummer@ndsu.edu or 701-261-6726, or your local county Extension or NRCS office.

The North Dakota 2016 Range Management School for livestock producers is scheduled for Aug. 30-Sept. 1 at the North Dakota 4-H Camp near Washburn, N.D.

The school is hosted by the North Dakota Chapter of the, Society for Range Management, NDSU Extension Service, North Dakota Natural Resources Conservation Service (NRCS) and the North Dakota Grazing Lands Coalition. The event will focus on the principles of range

management and how to incorporate them into livestock operations.

This three-day school will include ranch tours; presentations from livestock producers; and sessions on soil and ecological sites, plant identification, stocking rate, grazing management, soil water infiltration and range improvements. Producers will complete a grazing management plan that they can incorporate into their operations.



IN THIS ISSUE

GRAZING MANAGEMENT SCHOOL	1
SUPPLEMENTING COWS ON CORN RESIDUE	2
INTEGRATED CROP LIVESTOCK PROJECT	2,3
FOUNDATIONS OF SOIL HEALTH: SOIL DISTURBANCE	3
COUNTY CORNER: FARM SUCCESSION PLANNING	4
GARDENING LIKE OUR GRANDPARENTS	4,5



Strategies for Supplementing Cows on Corn Residue

Michael Undi, Animal Scientist, CGREC, NDSU



Corn residue, which remains in the field after corn harvest, is a readily available feed resource for winter grazing cattle in North Dakota. Corn residue includes the stalk, leaf, husk, cob and grain from ear drop. The nutritional value of corn residue depends on the amount of residue components available for grazing. Components with the highest nutrient content are the leaf and ear. The husk is low in protein but has a good energy profile, while the cob and stalk are poor in protein and energy. The residue can be used to extend the grazing season for beef cows during fall and early winter.

Supplementing cows on corn residue depends on when the grazing is initiated. A recent study at the CGREC has shown that early to mid gestation cows can maintain and gain body condition while grazing corn residue in early fall, although supplementation will be required in late fall and winter. Several methods can be used to accomplish this task. Keep in mind that the method of supplementation used should not increase labor requirements for the producer.

The options are: *Supplementing with corn dry distillers grains with solubles (DDGS), which can be fed every third day. Feeding every third day reduces the frequency of pasture visits required by the producer to feed the supplement. Current DDGS pricing, even on the rise, still makes it a highly competitive supplement in North Dakota.

*Growing a cover crop in association with corn. After harvest, the corn residue/cover crop combination provides a high-quality feed to grazing cows. Corn residue and cover crops can be complementary, with the high protein content and digestibility of the cover crop making up for the low protein content and digestibility of corn residue.



*Feeding a good-quality legume hay to cows grazing corn residue. The hay can be rolled out onto the corn field, spread using a bale processor or placed as a whole bale. Ensure that hay is only a supplement and not the main feed source.

A study to evaluate supplementation strategies will start in the fall of 2016 at the Central Grasslands Research Extension Center. We will evaluate corn DDGS, alfalfa hay and a cover crop cocktail of rye, brassicas (turnips, rape, hybrids and radishes) and some clovers as supplements for cows grazing corn residue. Cow performance, as well as soil health benefits and the economics of these strategies, will be evaluated. For more information, contact Michael at michael.undi@ndsu.edu



Photos by M. Undi & F. Brummer

Grant Bridges Gap Between Livestock and Crops for Soil Health



Integrating crops and livestock can have a positive effect on soil health. This theme is the focus of a recently awarded U.S. Department of Agriculture-CAP (Coordinated Agricultural Project) grant titled "Back to the Future: Enhancing Food Security and Farm Production With Integrated Crop-Livestock Production Systems." The grant was awarded to South Dakota State University earlier this year and will focus on addressing the soils and crop performance under integrated crop-livestock systems in the northern Great Plains.

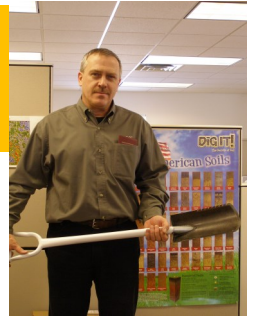
The grant involves three states and five research sites: one in Nebraska, two in South Dakota and two in North Dakota. The NDSU Dickinson Research Extension Center and the USDA's Mandan Agricultural Research Service (ARS) station are the North Dakota sites. Doug Landblom, NDSU animal scientist in Dickinson REC, and Fara Brummer, NDSU Extension area specialist in livestock systems are involved, as well as ARS scientists Mark Liebig and Dave Archer from Mandan.

Lead researcher Sandeep Kumar from South Dakota State University, wrote in his grant proposal: "Integrated crop-livestock (ICL) systems are one of several management systems that can help increase food production while benefiting the environment. These integrated systems have the potential to increase productivity and farm incomes, while improving system resilience and environmental sustainability. These systems increase landscape-scale diversification and improve soil organic carbon and environmental quality".

Continued on pg. 3

Soil Health: Minimizing Disturbance

Jay Fuhrer, Natural Resources Conservation Services, Soil Health Specialist



The Soil Health foundation consists of five principles which are: soil armor, minimizing soil disturbance, plant diversity, continual live plant/root, and livestock integration. Soil disturbance can generally occur in different forms:

In this second of five articles on soil health, Jay explains the concept of “soil disturbance” and why minimizing soil disturbance is important for building soil health

Biological disturbance, such as overgrazing, which limits the plants ability to harvest CO₂ and sunlight.

Chemical disturbance, such as over application of inputs, which may be nutrients, herbicides, or pesticides, can disrupt the soil food web functions.

Physical disturbance, such as tillage, which we will focus on in this article.

A typical soil is approximately 45% mineral (sand, silt, and clay), 5% soil organic matter, 25% water, and 25% air. The water and air portions exist in the pore spaces between the soil aggregates. Over time, tillage implements reduce and remove the pore spaces from our soils; restricting infiltration and destroying the biological glues which hold our soils together.

Ultimately tillage results in one or more of the following:

Water erosion transporting soil, nutrients, and water to offsite locations which negatively impacts water quality and quantity.

Wind erosion transporting soil, and nutrient to offsite locations, which negatively impacts air quality, human health, and animal health.

Ponding water which stays saturated on the surface for long periods of time, a result of reduced infiltration and increased runoff.

Crusting of the soil surface, which restricts plant emergence.

Soil organic matter depletion.



Can we reverse the impacts from tillage and improve soil function? Yes, we can. Minimizing soil disturbance is a good start to rebuilding soil aggregates, pore spaces, soil glue, and soil organic matter. This is an essential step for long term soil productivity.

Grant Bridges Livestock and Crops for Soil Health

Continued from page 2...



The project will use data from the field sites to develop a life cycle analysis model, which will analyze system benefits, including economics. Once these are developed, outreach to agricultural producers will share how integrating grazing cattle into annual cropped systems can be better incorporated into management plans.

The project already has started with soil data collection this year, and will continue for a total of four years. Project information will be shared through field days, which will rotate among the three states that are involved in the grant.



County Corner: Farm Succession Planning

Crystal Schaunaman, McIntosh County Extension Agent, Agriculture and Natural Resources



Do You Need a Kick in the Pants?

We recently surveyed a group of farmers and ranchers and asked if they had worked on a succession plan for their business. One of the respondents said, "I think I need a kick in the pants!" He is probably not alone.

Most farm and ranch owners know the importance of putting together a plan for the next generation. However, the vast majority of North Dakota farms and ranches do not have a succession plan in place. Why?

Some of the answers we have heard are following.

It's too complicated

We don't know where to start

We don't know who to turn to for help

We fear it will create family conflict

We're not sure what we really want for the future of our business

We don't like to face our own mortality or our parent's mortality

I've just been too busy with other things

Whatever your reason consider attending one of NDSU Extension's Design Your Succession Plan (DYSP) workshops to be held again in the fall/winter of 2016/17, to help you get started. To date 19 workshops have been held with participants from 41 North Dakota counties plus Montana, South Dakota and Minnesota.

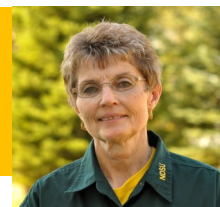
Many tools can be used to transfer business assets. Begin by knowing what you want to accomplish through the transfer. Is it to help a successor get started? Is it to generate funds for retirement? Is it to minimize taxes? Is it to provide for heirs? Most often, a combination of these tools is used in a transition plan.

Knowing where you want to go also means determining what getting there will take. Make a commitment to yourself and your family to start a succession plan for your farm or ranch this year. Having a succession plan in place can be a weight off your shoulders. For more information on NDSU's Design Your Succession Plan workshops along with other information such as a glossary of succession planning terms go to www.ag.ndsu.edu/succession.

This article was compiled from NDSU Extension "Succession Planning E-tips." Anyone can sign up for this free, weekly delivery of short, readable emails offering tips for creating a succession plan for your farm or ranch business. To subscribe

Gardening Like Our Grandparents: Memories From Bennie Dewald, My Dad

Sandi Dewald, Central Grasslands Research and Extension Center



Today's gardening is not like the gardens from 60 to 70 years ago in south-central North Dakota. Gardens back then were a vital food source for a family's winter supply, and seeds from mature plants were saved from one year to the next. Potato eyes also were saved and planted to produce enough potatoes for the next year. Gardens consisted of a variety of vegetables that were used by each family. Most gardens grew peas, carrots, beans, squash, pumpkins, cabbage, cucumbers, onions, garlic, beets and swiss chard. Dill herb, potatoes, watermelon and muskmelon were added in later years. Corn also was planted in the fields. In my Dad's family, the kids hoed the potatoes and Gramma would hoe the rest of the garden.

Continued on page 5

Gardening Like Our Grandparents

Continued from page 4...

Canning was an important way of preserving vegetables for the winter. With 11 children in a family, surviving the winter would require many jars of vegetables because refrigeration didn't exist at that time. The watermelons were pickled in crocks and placed in the cellar until they would be ready to eat. My dad and his brothers would sneak some from the crock and eat them. He recalls the melons wouldn't be ripe enough to eat in the fall, so they were pickled instead. Cucumbers also were pickled, and the cabbage was shredded and placed in a crock with salt so that it would ferment and become sauerkraut. Borscht soup, made with beef stock and a variety of fresh garden vegetables, was a staple for many families during the summer. Another popular item was dill soup. When the cucumbers would start bearing, cucumber salad was made, and often it was eaten over fresh fried potatoes that were served with fried chicken. Below are two of the recipes that are passed down through the years. The recipes have no set measurements because they were made according to the choices of each cook, as well as available products.



During my dad's childhood, pumpkins were grown to be made into plachenda or pie. Now we use them for decorations more than eating them. On the right are my grandsons with pumpkins that were scored with a sharp object when small, and as they grew they scabbed over and retained their names. The boys are fifth generation Dewalds.



Cucumber Salad

Peel and slice several medium cucumbers.
Toss with salt and let set an hour or so.
Drain off the excess juice or rinse a bit if they seem too salty.
Mix in separate container:
Half and Half, 1 to 2 cups, depending on how much juice you'd like.
Salt and pepper
About 2 tablespoons salad dressing
About 1 teaspoon vinegar, depending on your taste
Mix well and pour over cukes. Chill several hours.



Borscht Soup

Fill a large stockpot about half way with water. Add:
Beef soup bones, about 3 bay leaves, a couple stalks of celery, 1 whole onion, dill, 2 medium green heads, Salt and pepper
Simmer for several hours or until the meat is very soft on the bones. Strain through a fine strainer and return the broth to the kettle and add:
Chunks of meat from bones
3 medium potatoes, diced
2 carrots, diced
2-3 diced tomatoes, canned or fresh
1 cup, about, diced cabbage
½ cup, about, rice, uncooked
2 medium beets diced; save leaves
Simmer about an hour, then add:
Handful of corn, handful of peas, 2 handfuls of green beans,
4-5 beet leaves, deveined and chopped. Heat thoroughly and enjoy. Leftovers may be frozen.

NDSU Central Grasslands Research Extension Center*
Department 7070
P.O. Box 6050
Fargo ND 58108-6050

Non Profit Org
U.S. Postage
PAID
Permit 818
Fargo ND



*Street address:
4824 48th Ave. S.E., Streeter, ND 58483

Bryan Neville, Director
bryan.neville@ndsu.edu 701-424-3606

www.ag.ndsu.edu/CentralGrasslandsREC
Editor: Fara Brummer

Central Grasslands REC 35th Annual Field Day

Monday, July 11

Starting at 9:00 AM

Tour the center, learn about current projects,
meet with others interested in agriculture
and natural resources. (Lunch is provided.)

In this Issue:

Range Management School

Supplementing Cows on Corn Residue

The Foundations of Soil Health: Soil Disturbance

Crop-Livestock Integration Grant

Gardening Like Our Grandparents



Photos by Rick Bohn and Fara Brummer, CGREC

North Dakota State University does not discriminate on the basis of age, color, disability, gender expression/identity, genetic information, marital status, national origin, public assistance status, race, religion, sex, sexual orientation, or status as a U.S. veteran. Direct inquiries to: Vice Provost for Faculty and Equity, Old Main 201, 701-231-7708 or Title IX/ADA Coordinator, Old Main 102, 701-231-6409. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.