

# Research Ruminator

## May calving is an option

*Producers get to choose but many factors are part of decision*

For the past four years, the Dickinson Research and Extension Center has calved on grass. Initially, the May and June-born calves at the center were weaned at the traditional early November dates.

As the Center staff pondered the consequences of May calving, the consensus was positive: labor inputs are decreased and calving is much more manageable. But there is no way around the fact that November weaning of May-born calves takes 60 days of growth off the traditional sale ticket, plus negative impacts of weaning younger calves in regard to potential health problems.

Interestingly, there is no difference in calf weight gain between

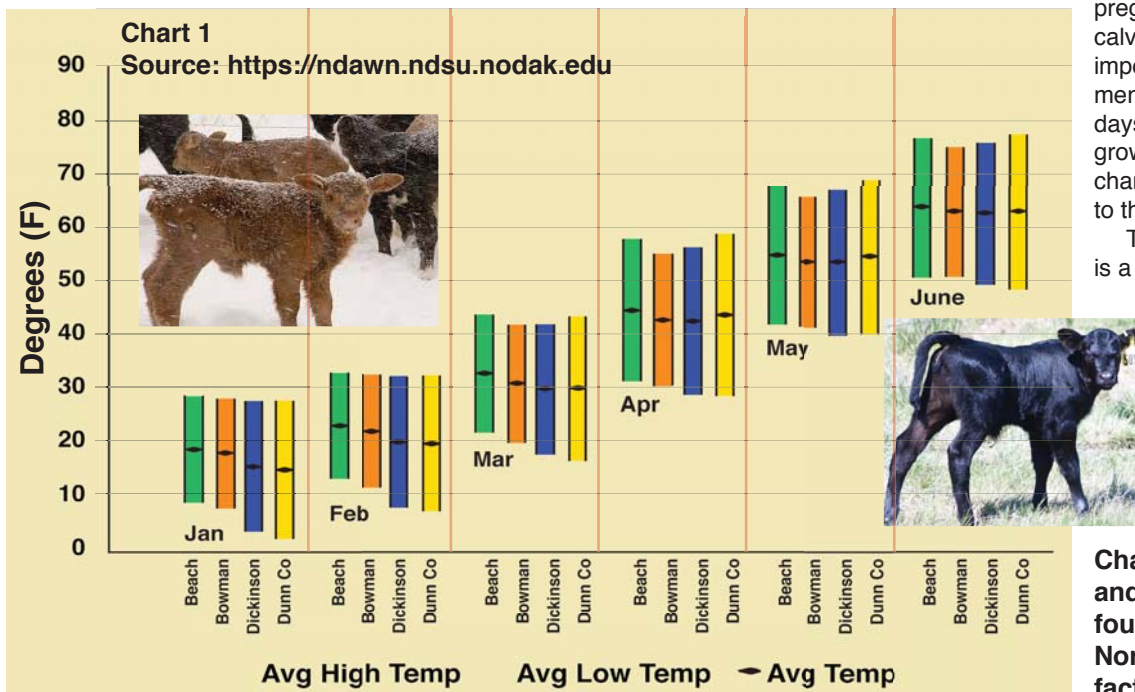
the March or May calves. If both groups of calves were weaned at 200 days of age, the March calves would be estimated to weigh 586 pounds and the May calves would be estimated to weigh 589 pounds.

If the May/June calves were sold in November, there would be 150 pounds of missed growth (60 days of growth at 2.5 pounds per day). To provide for an additional 60 days of growth, May calves are now backgrounded through the winter. The calves will be brought home; their mothers will be left in winter paddocks.

In a later calving system, bulls are turned out Aug. 1, calves are due May 12, weaning is in early to mid-December, and

cows start the last trimester of pregnancy Feb. 12. The May calving system simply shifts the important dates in the management of a cattle operation by 60 days, but it does not change the growth of calves or the need to change cow nutrition according to their stage of production.

The nutritional shift for cows is a good change, putting winter feed on the down side, with spring soon to arrive. The later management of calves is not simple, thus a change in calving date is a big change for any operation but one worth considering. **RR**



**Chart 1 shows the high, low and average temperature at four locations in southwest North Dakota. Weather is a factor in calving success.**

# The airwaves are buzzing . . .

## *Agronomy and Economy bi-weekly radio show is about education*

By LEVI HELMUTH and RYAN BUETOW

We don't have all the answers, but the goal of Agronomy & Economy is to start a conversation. Whether you are a farmer, rancher, in the agriculture industry, or a consumer, we want you to be aware of the current issues and events happening in the world of agriculture.

As we prepare for the growing season in southwest North Dakota, producers are looking to get the most out of what they put into the ground. You reap what you sow, and the preparations that are made on the farm this spring affect the yields this fall.

There are many factors that impact yield: plant population, fertility, moisture, and facing the challenges that come with weed, insect, and disease pressure. Some of these factors are within the producers control, some are not. A savvy producer will focus on what they have control over and plan accordingly.

There are many questions farmers and ranchers must ask themselves when preparing a plan for their operation. Does the cash flow account for the costs of a proper stand establishment (such as, spring soil testing, seed treatment, herbicide application, etc)? If not, the money and moisture that should be allocated to crops and forages may not be used efficiently.

You can't manage what you don't know, and you don't know what you don't see. Scouting fields prior to planting is imperative for weed control.

There are many variables that affect

stand establishment. First, a germination test should be conducted to determine viability of the seed when determining seed-



**Ryan Buetow and Levi Helmuth provide education on crop, soil and economic issues for the public.**

ing rate. It is important to know how many viable seeds are in a bushel or a bag.

A target of 1.3 million plants per acre is a good goal for wheat. It is important to make sure that the bushel or pound of seed per acre rate will achieve the target number of plants per acre. Optimal seeding rates for small grains can be found at <https://www.ag.ndsu.edu/crops/spring-wheat-articles/optimal-seedingrates>. For more information refer to NDSU Extension publications or talk to your local Extension agents.

Once the seed rate is established, planting equipment should be calibrated and set to plant at the desired depth. This will vary by soil type and residue cover. When farmers get into spring seeding, time is of the essence.

It is important to recognize the time constraints of each operation and the labor needed for efficiently planting within the time of the optimal seeding window. A diverse crop rotation can help spread labor over both the planting and harvesting seasons.

Hopefully, this information will start a conversation to help producers examine the ramifications of decisions made on the farm this spring. Remember, prior preparation prevents poor performance.

A spring wheat stand establishment survey will be conducted this spring in North Dakota, if you would like to participate contact Ryan Buetow at: 701- 456-1106 or [ryan.buetow@ndsu.edu](mailto:ryan.buetow@ndsu.edu)

Have a good one. **RR**

## ***Prairie Wild Rose is native to North Dakota***

The growth and development of Prairie Wild Rose, (*Rosa arkansana*), has been studied by the Dickinson Research and Extension Center for 67 growing seasons from 1946 to 2012. Prairie Wild Rose is the official state flower of North Dakota and is a native, perennial, deciduous shrub.

It is a stout and flexible plant 4-20 inches tall that may die back partly or completely to near the stem base from drought, freezing, or fire. Stems are densely covered with small bristly prickles.

The root system has very stout deep vertical roots that descend 10 to 12 feet below the soil surface along with wide-spreading horizontal roots near the soil surface. This root system allows Prairie Wild Rose to increase during drought



**Prairie wild rose**

years when other plants may decline. Regeneration is by both sprouting from the roots and flowering.

The fragrant showy flowers appear from May to August. Pollination is by insects. The fruit is a hip that is usually retained on the plant through winter. The seeds are distributed by birds and mammals. Seeds can survive in the seed bank several years.

Prairie Wild Rose has been found to decrease under both non-grazed

and grazed situations where nearly all of the plants were grazed. To learn more about the autecology of Prairie Wild Rose, please visit the DREC website and access the 2016 Annual Report at: <https://www.ag.ndsu.edu/dickinsonrec/annual-reports-1/2016-annual-report/2016-annual-report> **RR**

# Healthy soil buffers human inadequacies

By KRIS RINGWALL  
NDSU Extension Livestock Specialist

Production practices that reduce soil disturbance, increase plant diversity, add animal diversity and maintain living roots are positive steps to improve soil health. Perhaps a healthy soil is a good buffer to our own inadequacies. As we know, water storage and availability are necessary for soil health and forage growth.

Ten years ago, the Dickinson Research Extension Center implemented a cropping system on a quarter section of land. The system changed the rate of average water infiltration into the soil from 1.3 inches per hour to 10.2 inches per hour, an increase of 685 percent. Additionally, the projected average plant-available nitrogen increased from 100 to 175 pounds per acre, a 75 percent increase.

Soil is a biological system that depends on the recycling of nutrients to sustain microbial action beneath the soil surface and provide nutrients for above-ground production. The balance between the ground surface and below-ground interaction is essential for soil health, allowing water infiltration, nutrient cycling and erosion reduction.

Production practices initiated were to reduce soil disturbance, increase plant diversity, add animal diversity, maintain living roots to feed soil organisms, and cover soil with plants and plant residues. The drought in the 2017 growing season was a good test for the project. Noticeable field production was evident in 2017, despite precipitation totals less than one-half of normal. The diverse rotations maintained adequate production on seeded annual crops, while gain per acre on beef grazing annual crops exceeded 2 pounds per day. The improved forage production allowed the Center to maintain stocking rates despite the dryness.

Rain comes from places we do not control. But production is a process producers do control, and the incorporation of production practices that reduce soil disturbance, increase plant diversity, add animal diversity, and maintain living roots to feed soil organisms and cover soil with plants and plant residues is a positive step.

A healthy soil really is a good buffer to our own inadequacies. **RR**

## Plants are the middleman between soil and livestock

Sun, soil, air, water, plants, and animals all play a part in a livestock production enterprise. Previously, we took a look at a grazing system from a livestock's point of view. Now let's take a look at a grazing system from the plant's point of view.

Plants are the middle-man between livestock and soil. Plants must transfer energy from the sun into both the herd of livestock that walk on the soil surface and the microbial herd of livestock that live below the soil surface. Maintaining a balance between the two "herds" is the livestock producer's challenge.

Perennial plants that make up native or tame pasture plant communities need to be grazed in order for them to remain healthy and to keep the soil that supports them healthy. When livestock select a portion of a perennial plant to graze to meet their nutritional needs, that plant reacts to rebalance itself.

The plants exude sugar from their roots to feed the microbial life in the soil that will help the plant to respond from being grazed. The resulting microbial reaction in the soil provides the plant with nutrients and water to resume growth of shoots to replace leaf area that had been removed by livestock.

With new growth, the plant regains the surface area of green leaf needed to once again capture sunlight to sustain itself and the life in the soil.

Keeping the plant's perspective of the grazing system in mind, it is important to manage a grazing system so that all plants are grazed and that all of the plants are then allowed to replenish themselves before being bitten again by livestock. Understanding when plants are ready to be grazed in the spring, and when they are ready to be grazed again later in the season is key to ensuring a sustainable grazing system.

## Soil Health Vital for Long-term Sustainability

NDSU Dickinson Research Extension Center

Cropping, forage and livestock practices:

- Reduce soil disturbance
- Increase plant diversity
- Add animal diversity
- Maintain living roots to feed soil organisms
- Cover soil with plants and plant residues

Graphic by David Haasser, NDSU Agricultural Communication:  
<https://www.ag.ndsu.edu/news/columns/beefstalk/beefstalk-healthy-soil-buffers-human-inadequacies/>



**Plants transfer energy from the sun to feed soil microbes that keep soil healthy and provide livestock feed.**

Controlling where livestock are grazing and for what length of time throughout the year is critical. Strategically placed, or moveable infrastructure of fences, water, salt, or mineral are some tools that can be used to control livestock movement and access to when and what degree plants will be grazed.

Biologically effective management of grazing lands is an important facet of the research and education taking place at the Dickinson Research and Extension Center.

To learn more about this important topic please visit the Center's website at: <https://www.ag.ndsu.edu/dickinsonrec>. **RR**

# Agriculture is part of their DNA

## *Kessel cousins serve on the DREC Advisory Board*

The Kessel cousins are continuing an agricultural legacy that spans generations.

First cousins Kevin Kessel and Bill Kessel—along with their wives Kelli and Candace respectively—are members of the Dickinson Research Extension Center Advisory Board. They take their positions seriously, working with the DREC administration, faculty and staff to advance the mission of the Center.

Kevin and Bill, and the families they came from, lived four miles apart. Involvement in agriculture is in the Kessel cousins DNA. “Bill and I have worked together since we were kids,” Kevin said.

Their fathers, Tony and Bill Sr. respectively, were active members of crop improvement, soil conservation and agricultural marketing groups. Kevin and Bill fully embraced the agronomic lifestyle, the cyclical nature of the business and need to roll with the tide of Mother Nature.

Agronomic methods and concepts are the center of discussions with the younger Kessels, who do not have any livestock. Bill and Kevin’s older brother, Ron, attended North Dakota State University at the same time.

Both have degrees in crop and weed science.

Kevin’s brother Ed is on the family farm and the four Kessel boys collaborate on planning, ideas, equipment and labor. “We talk all the time,” Bill said.

Bill and Kevin understand time management and how it equates to the economics of their profession. “I farm the maximum amount of acres I can farm with the drill I have, with the equipment I have. I hire some part time help during the busy seasons: seeding, spraying and harvest.”

Kevin added, “Help is a big issue in agriculture . . . When you spend \$300,000 on a combine, (if you can) share the cost of iron with a neighbor or relative, it works a lot easier . . .”

Bill has a four-crop no-till rotation. He seeds two years of spring wheat, one year of winter wheat and one year of canola or sunflowers. “I like some broad leaves in my rotation every 4 years,” he said, noting the change in crops also means a change in herbicide usage, which provides for better weed control.

No-till is used “for water conservation. (I am) trying to utilize as much water . . . not disturbing organic matter. Weed pressure is not as great,” Bill said. Both are serious about maintaining soil structure.

Kevin is a diesel mechanic by trade, having graduated from the North Dakota State College of Science. His skills benefit both. “Everybody’s ideas are always a little different. If I need help—with ideas or work—we just call each other. Last fall I needed a

little help running a combine, he (Bill) came over. If he needs help with mechanic work, he will call me and we work it out together.”

Kevin also works in the energy field, traveling from North Dakota to New Mexico. “I get to see agriculture and different methods in different regions,” he said.

His no-till rotation includes spring wheat, corn and sunflower, which is a key component of his time management schedule.

Marketing options drive the decision-making processes for Kevin and Bill. “At the end of the day, the markets determine what you are going to grow,” Kevin said.

A key issue Kevin and Bill see for the Center is communicating to producers about the word done at the DREC. They see research centers as the place to test for crops that could be potentially profitable.

Bill noted his interest in growing grapes and hops. “We need to take some chances at the research level,” Kevin said, adding budget cuts “come into play.”

Kevin encouraged involvement with private industry to find solutions and options for producers, noting variety trials for different species are important.

Bill and Candace, a health care professional, have three children, Abby, a tenth grader, Braden, a

seventh grader, and Mason, a fifth grader.

Kevin and Kelli, an education professional, have two sons, Wyatt, a fifth grader, and Rawley, a third grader. **RR**



**Bill, Braden, Abby, Mason and Candace Kessel.**



**Kevin, Wyatt, Kelli and Rawley Kessel.**



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