



MAY, JUNE, JULY, AUGUST

Educators Edge on Agriculture

South Dakota Cooperative Extension Service

WEST 1 AND 2 FIELD EDUCATION UNITS

Submitted by: Robin Salverson
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GRASS TETANY SEASON

With green grass trying to grow the concern of grass tetany is always there.

Magnesium Requirements in the diet: The old rule of thumb is that a “high-mag” mineral should be provided for approximately 30 days prior to the grazing season and continued into the first 30-45 days of the grazing season with some magnesium being offered throughout the year. The recommendation for early lactation of cows of average milking ability be provided with 10 to 15 grams supplemented magnesium per day during the grass tetany season. Heavier milking cows should have 15-20 g supplemented. During the “non-grass tetany season” at least 5 g of magnesium should be supplemented. Most “high mag” products are supplemented to meet the requirements of early lactation and early grazing. However, it is important to check the label to ensure the cow’s requirements are being met.

Signs of grass tetany: Cattle are often found dead with evidence that they struggled. If found alive they could have convulsions, weakness, disorientation, and/or become mean and try to eat your for lunch.

Prevention: Provide “high mag” mineral, tubs, blocks etc. to your cattle approximately 30 days prior to grazing and continued into the first 30-45 days of the grazing season. Magnesium should be provided year around at a lower level (5 g) which is commonly found in minerals.

Treatment: Intravenous solution of magnesium and calcium (ex. CMPK). Providing alfalfa hay can help prevent but can also be fed after intravenous treatment. Relapses can occur and recovery is does not always definite.

Agricultural

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CONSIDER COVER CROPS

Submitted by: Bob Drown
Agronomy Educator

If you are looking for more forage or nitrogen, you need to consider growing cover crops this summer. Reports from research projects in central South Dakota are showing that cover crops are an excellent tool for storing nitrogen in the soil for next year’s crop. The use of cover crops has benefits for both the soil and the next year’s crop. A number of cover crop species will utilize nutrients, especially nitrogen, which would otherwise be lost to leaching or denitrification before the next crop could capture them.

Producers with fields in a winter wheat rotation may see big benefits by planting a cover crop after harvesting wheat. Brassica cover crops such as radishes, turnips, canola, and rape, help increase microbial activity in the soil which will help cycle small grain residue. **(article continued on page 2)**

Consider Cover Crops cont..... Submitted by: Bob Drown, Agronomy Educator

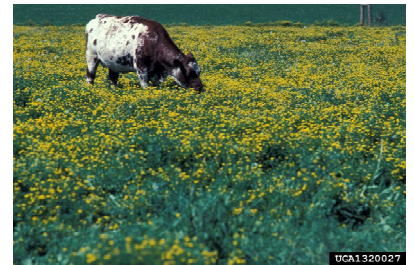
There are positives and negatives to an increased decomposition process in regard to moisture conservation. The residue cycling will result in warmer and drier seedbeds for planting the following spring; and it also helps fix nitrogen for the following year's crop.

The U.S. Department of Agriculture Agricultural Research Service, South Dakota State University Plant Science Department, and the Dakota Lakes Research Farm are conducting research on South Dakota sites. The information being gathered from the research sites is showing a significant amount of nitrogen was available last year after harvest. A cover crop of radishes, lentil, and chickling vetch yielded 2.4 tons per acre and added 134 pounds per acre of nitrogen to the soil.

However, one needs to keep in mind that not all of the nitrogen added to the soil will be available for the next year's crop. Actual availability could range anywhere from 25- to 75 percent of the total nitrogen added to the soil.

In addition to using cover crops for improving the soil quality, producers who have cattle with their farming operation may be interested in using cover crops as an additional source of forage. Most, if not all, cover crop species can be utilized for live-stock grazing.

Picture: Birdsfoot Trefoil

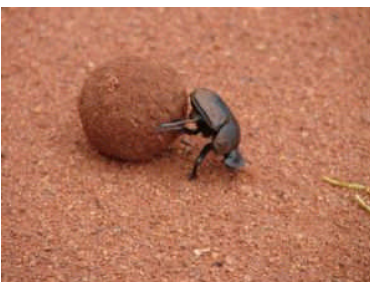


DUNG BEETLES

Submitted by: Dusty Jager, Range Management Educator

No, I am not going to talk to you about the British Invasion from Liverpool. But just as exciting, I am going to discuss the importance of the dung beetles in breaking down livestock manure on the range. Around the world the dung beetles which belong to the families Scarabaeidae and Geotrupidae are an important group of insects responsible for the breakdown and decomposition of animal manure. The beetles consume large amounts of dung as both adults and larvae. The beetles have been noted to increase nutrient breakdown in pastures, improve aeration, and compete for nesting habitat and food resources with flies (most significantly the horn fly and face fly). Without the dung beetle manure can be slow to breakdown leaving a great host for flies.

There are three basic classes that dung beetles are classified under. They may be categorized as tunnelers, dwellers, or rollers. Tunnelers feed on the dung pat and then burrow into the ground underneath the pat. The tunneling activity by the beetles aerates the soil allowing for better water infiltration and nutrients from the dung are carried further into the soil profile. Manure dwelling beetles live in the manure pat laying eggs either in the pat or near the surface of the soil beneath the pat. These beetles and their larvae feed on the pat causing break down. Dung rolling beetles break down the manure by rolling the manure into balls and burring the balls in the soil. The various beetle types improve the soil by introducing organic matter into the soil, increase water flow in the soil horizon, and introduce organic material into the soil. Dung buried beneath the dung pat limits resources for flies reducing fly population.



Size of dung beetles varies. Some beetles may be no more than 1/8th of an inch in length to as long as 1 1/4 inches in length. Most of the beetles are black or brown to black in color. It is possible to have a bright metallic green beetle by the name of *Phanaeus vindex*. Some of the male dung beetles have diverse horns. Horn size is usually an indicator of larval nutrition. Though winter weather may be cold dung beetles may still be active in many states year round. In Texas 80% of all the cattle manure is removed by the dung beetles. Australia introduced dung beetles from South Africa to cope with growing manure problems caused by cattle. In India dung beetles are critical in recycling human and animal waste. **(article continued on page 3)**

Dung Beetles cont....

The management of pasture flies while still accommodating the dung beetle may be quite a challenge. Pesticide treated ear tags have the least effect on the dung beetles. Pour-on insecticides have the greatest effect on the dung beetles if the insecticide is excreted into the manure. Parasiticides in the macrocyclic lactone class (abamectin, ivermectin, eprinomectin, doramectin) kill flies and dung beetles that may try to live in the manure. Pour-on's that contain pyrethroids are also toxic to dung beetles especially up to one week after application. However, the use of moxidectin is less toxic to the dung beetles. Treatment of face flies and horn flies may be necessary and the impact on the dung beetles unavoidable.

The beetles are important to our ecosystem. We have always had the beetles, but as we control parasites more we do affect the beetle population, thus slowing manure decomposition and nutrient impacts on the soil from the manure.

MANAGEMENT OF NEWLY PURCHASED BULLS Submitted by: Penny Nester, Livestock Educator

Many of us spend a lot of time looking through EPDs and pedigrees, deciding what characteristics are needed to best improve the herd, but remember that planning does not stop after that new bull is purchased and delivered. Bull management has just begun. Here are several questions and things to consider when managing bulls to get them ready for the breeding season.

What is the best nutritional management for the prebreeding season period for purchased bulls?

The length of prebreeding period may vary as is dependent on when the bulls are purchased or delivered. When bulls are purchased or delivered, first assess their condition and make nutritional decisions based on the desired condition wanted at breeding time. Ideally, bulls should be in a condition score of 6 out of a nine point system since bulls normally lose about 100 to 200 pounds during the breeding season. This weight loss should come from energy stored as fat or condition, rather than muscle tissue. This is especially important in young bulls since they are still growing. Because young (yearling) bulls are still growing, turning the bulls out to "rough it" may not be in your best interest, and could potentially lead to reproductive issues in the future. Feeding an extremely low energy diet can delay puberty and potentially impair sperm production. Also, young bulls that are undernourished may never develop to their full potential compared to bulls that are properly fed. A diet with adequate energy and protein content needs to be developed in order to continue the bulls' growth and development. Diets can vary from forage-based with low levels of grain to energy-dense diets. A good mineral program is also critical for optimum reproductive performance. High levels of energy in the diet can increase bull weight, height, and scrotal circumference without effecting age at puberty or first mating, showing nutritional effects on bull development without affecting sexual development. However, highly fitted or excessive conditioned bulls may fatigue rapidly, thus potentially servicing fewer cows.

When are bulls considered reproductively mature? The age and weight at which puberty occurs varies greatly among breeds and the level of nutrition during development. Research with various breeds suggests that a practical indication of eminent puberty is when scrotal circumference is between 27 and 29 cm. Simply because a bull has reached puberty and can produce semen does not necessarily mean he is highly fertile. The most commonly used definition of puberty in bulls is when an ejaculate collected via electroejaculation contains a minimum of 50×10^6 total sperm with at least 10% progressive motility. Sperm quality and quantity continues to increase for several months after the initiation of semen production. Only about 35, 60, and 95% of 12-, 14-, and 16-month old bulls, respectively, are reproductively mature and produce good quality semen.

Is a single breeding soundness evaluation (BSE) valid for the life of the bull? The short answer to this question is no. Sperm production is a continuous process compared to a BSE, which is done at a specific point in time and measures sperm production at that specific time. That means the results of a BSE may change over time. Mature sperm is produced over a 60 day period before ejaculation, therefore bull injury, disease, fever, and extreme environmental conditions can change the formation and motility of sperm before and after a BSE. This does not mean that a BSE is not beneficial to do. Testing a bull annually, 60 days to one month prior to breeding, is one of the most economical ways to identify a fertility problem in herd bulls before turnout so that a problem is not discovered too late when pregnancy checking open cows in the fall.

South Dakota State University, South Dakota Counties, and USDA cooperating. South Dakota State University adheres to AA/EEO guidelines in offering educational programs and services.

EDUCATORS EDGE ON AGRICULTURE



WHAT'S YOUR ROLE?

Submitted by: Stacy Hadrick
Farm Business Management Educator

Family business is a challenge and passing it to the next generation is one of the hardest things you will do. As you start to think through the process of transition here are a few key things to think about to help you be successful.

1. **Write Down Goals.** What are your business and personal goals and have you not only written them down but shared them with family and friends? This is a key first step that can help start the conversation about transitioning the business. This tool helps gets things out in the open and all of the family members working towards the same goals.
2. **Matching family members with the right roles.** Another critical thing to consider when transition starts to occur is that everyone is doing the job in the business that fits their personality and skills. A perfect example is that the wife is doing the ranch accounting, and she hates that job. Maybe your youngest son loves to work with numbers and he would be the perfect fit for that job. The only way to get everyone doing what they love is to sit down and talk about the jobs that need to be done on the ranch and see who fits best.
3. **Set a Transition Plan.** Planning for when you want to slow down is important. A transition plan needs to consist of both management and assets. Many time mistakes are made because a plan is not set into place before the child starts working at home. This should be done within the first five years of the child returning, if not sooner.

These 3 steps are not done overnight or very easily. The Extension Service has resources for you to use to get these conversations started. Please contact Stacy Hadrick, Meade County Extension Educator for more tools to get you started on your successful business transition.
