

July 2008

Dear Farmers & Ranchers,

While summer is always a busy time, we hope you will be able to participate in some of the upcoming field tours. Please mark on your calendar the date of July 22nd for the Tri-County Leafy Spurge Tour, and July 28th for the Wibaux and Golden Valley County Crops Tour.

In this newsletter you will find information on The Best Time to Cut Hay, Blue-Green Algae, Cow Size and Production Potential, Eastern Ag Research Center Field Day, and more.

If we can be of help in any way, please let us know.

Sincerely,

David L. Bertelsen
County Extension Agent

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*Montana State University,
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MSU EXTENSION PUBLICATIONS

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| MT199001HR | Power of Attorney | | Free |
| MT199117HR | Estate Planning for Families with Minor and/or Special Needs Children | | Free |
| MT199202HR | Montana Rights of the Terminally Ill Act | | Free |
| MT199611HR | Your Important Papers: What to Keep and Where | Free | |
| MT199612HR | Revocable Living Trusts | | Free |
| MT199901HR | Designating Beneficiaries through Contractual Arrangements | | Free |
| MT200509HR | Using a Bypass Trust to Provide for Children from Prior Marriage | | Free |
| MT200602HR | Montana's End-of-Life Registry | Free | |
| MT200707HR | Beneficiary Deeds in Montana | Free | |
| MT199708HR | Selecting an Organizational Structure for Your Business | Free | |
| MT200802HR | Caregiving: When Our Parents Need Our Help | Free | |
| MT200701AG | Camelina Production in Montana | | Free |
| MT200705AG | Home Fertilizer Soil Testing & Fertilizer Guidelines | Free | |
| EB0101 | A Guide for Planning, Analyzing and Balancing Forage Supplies with Livestock Demand | | \$2.00 |
| EB0182 | Nutrient Management in No-Till and Minimum Till Systems | | Free |

EASTERN AG RESEARCH CENTER FIELD DAY SET JULY 16TH

The annual field day at the Eastern Agricultural Research Center in Sidney will be held **Wednesday, July 16th**.

Registration and coffee will begin at 8:30 a.m. (Mountain Time), with staff from Montana State University, North Dakota State University, and the USDA-Agricultural Research Service on hand as well as others to explain their work and answer questions.

The field tour will begin at 9:00 a.m. when researchers from the three institutions, plus Extension specialists, cooperating farmers and industry representatives will lead discussion on topics such as:

- Biofuels (ethanol and biodiesel) and biobased products
- Sugarbeet varieties and crop outlook
- Biological sugarbeet seed treatments
- Nitrogen fertilizer placement in sugarbeets
- Sugarbeet disease management
- Malt barley production and varieties
- Barley research and development
- Value-added durum research and development
- Spring wheat research and development
- Small grain seedling and foliar diseases
- Irrigated broadleaf crops
- Certified seed production

Four commercial applicator credits will be awarded to those who attend Eastern's field day. Private credits are pending. A noon lunch will be served and sponsored by local agri-businesses. The general public as well as all ag producers are invited to attend the field day activities. The Eastern Ag Research Center is located one mile north of Sidney on Highway 200.



TRI-COUNTY LEAFY SPURGE TOUR

The Fallon, Prairie and Wibaux County Extension Offices and Weed Districts are again hosting a Tri-County Weed Tour on **Tuesday, July 22nd, beginning at 2:00 p.m.**

The tour will begin at the Tri-County sign at the intersection of Cabin Creek Road and Fallon County Road #628. Tour highlights will include Noxious Weed Control Utilizing Herbicides, Quantifying Weed Impacts, Rangeland Revegetation, Fort Keogh Leafy Spurge Research Plots, and Record Keeping for Pesticide Applicators. Private and Commercial Pesticide Applicators will receive recertification credits for attending.

Noxious Weed Control Utilizing Herbicides: Chad Brusseau, Dow AgroSciences will explain how herbicides work, rates, and herbicide options for leafy spurge, Canadian thistle, knapweeds, and other noxious weeds.

Quantifying Weed Impacts: Can you quantify the impact that weeds like leafy spurge are having on your ranch? Dr. Rinella has developed a computer model to assist ranchers in answering this question. Dr. Rinella will demonstrate in the field how this tool can be used to assist ranchers.

Rangeland Revegetation: Dr. Jeff Mosley, MSU Extension Rangeland Specialist will discuss how a producer can have the most success revegetating a rangeland site with desirable plant species. He will discuss timing, seeding rates, and recommended varieties.

Fort Keogh Leafy Spurge Research: Sheep grazing can be an important tool in controlling leafy spurge. Dr. Matt Rinella of Fort Keogh Livestock & Range Research Laboratory will show and discuss his research plots that examine sheep grazing variables such as timing and weed density.

Record Keeping for Pesticide Applicators: Applying restricted use herbicides means that private pesticide applicators must keep records of their herbicide applications. Sharla Sackman, Prairie County Extension Agent will demonstrate how this task can be completed in an efficient and thorough manner.

Following the tour, supper will be served by the Cabin Creek Homemakers Club. All interested persons are encouraged to attend.

JOINT CROPS TOUR

The annual Joint Wibaux and Golden Valley Counties Crops Tour will be held on **Monday, July 28th, beginning at 3:00 p.m.** The tour will begin at the Golden Valley County SCD Quarter, 2 miles east of Beach. Transportation will be provided. For those going from Wibaux, the Bus will leave the USDA building at 2:30 p.m. The bus will also stop at the Golden Valley County Extension Office. After the tour, the bus will return to Wibaux for those wishing to ride on it. This year following the tour a supper will be served at the SCD Quarter.

Stops on the tour will include corn variety trials, a double cropping forage trial, alfalfa variety and salt tolerance trials, camelina, canola, peas, lentils, and possibly soybeans.

Supper is being sponsored by the Beach Co-Op Grain Company and the Golden Valley County Conservation District. Refreshments throughout the afternoon are being provided by the Wibaux Conservation District. Sponsors of the tour include the Wibaux and Golden Valley County Extension Offices, the Beach Co-Op Elevator, and the Wibaux and Golden Valley County Conservation Districts.

If you have questions or would like additional information, please call the Wibaux or Golden Valley County Extension Offices at 796-2486 or 872-4332. All interested persons are encouraged to attend. An approximate head count for supper would be helpful.

MAKE BETTER HAY WHILE THE SUN SETS

By: Jim Jacobs, PM Specialist

It has been known for a long time that plants accumulate sugars in leaves during the day because the rate of photosynthetic production of sugar is faster than its export to other parts of the plant and faster than its conversion to structural cellulose and lignin carbohydrates. Hay producers can use this knowledge to increase the nutritive value of hay simply by mowing hay in the afternoon hours rather than the morning hours. Recent studies show the total nonstructural carbohydrates (sugars and starch) are significantly greater in alfalfa mowed after noon than when mowed in the morning, with peak content at 4:00 p.m. In addition, the concentration of structural carbohydrates in alfalfa hay measured by neutral detergent fiber decreases over the course of the daylight hours. These carbohydrates are not easily digested by livestock and do not add to the nutritive value of hay. Feeding trials show livestock can detect these differences. Steers, sheep and goats fed alfalfa hay cut at different times during the day consumed more from the 4:00 p.m. hay than the 7:00 a.m. hay. Manure samples from these animals showed they were able to assimilate more of the hay as measured by dry matter disappearance when the hay was cut at 4:00 p.m. or later than when cut earlier in the day. This means animals can gain more weight per pound of hay consumed when the hay is cut later in the day compared to hay cut in the morning.

The results were the same regardless of whether the hay was the first, second or third cutting. Total nonstructural carbohydrate content of alfalfa hay was greater in the afternoon cutting than the morning cutting when it was harvested in July, August, and September. Likewise, structural carbohydrate content was greater in the morning hay than the afternoon hay when it was cut in July, August, and September. Identical results were found in studies with tall fescue and switchgrass hay, and most likely apply to all hay species. Similarly, sheep intake of ryegrass and white clover increased when grazed over the course of the day. Intake rates of ryegrass were 2.5 and 2.3 grams dry matter per minute (g dm/m) at 7:30 and 11:30 a.m., respectively, and 3.2 g dm/m at 3:30 and 7:30 p.m. Intake rates of clover were 3.5 and 4.2 g dm/m at 7:30 and 11:30 a.m., respectively, compared to 4.7 and 5.5 g dm/m at 3:30 and 7:30 p.m., respectively. This has implications for forage harvest management. With the cost of fuel and fertilizer increasing, producers can get more for their money by cutting hay in the afternoon. The old adage of “make hay while the sun shines” still applies. However, an appropriate corollary might be “make better hay while the sun sets.”



WATCH FOR BLUE-GREEN ALGAE

Producers should be on the lookout for green to blue-green scum or a gelatinous mass on the surface of their livestock's fresh water supplies.

"Algae blooms cause major disruptions not only because of their offensive odor and appearance; they can be potentially fatal to livestock," says Roxanne Johnson, North Dakota State University Extension Service water quality associate. "Not all algae blooms are toxic, but without laboratory analysis, it is impossible to identify poisonous species."

This scum actually is not an algae, but photosynthetic bacteria called cyanobacteria that rely on sunlight for energy. As they store energy, they create a tiny cavity of air that allows them to move up and down in the water to areas with more nutrients. As environmental conditions improve with warm weather, calm winds and abundant nutrients (particularly phosphorus and nitrogen), the bacteria numbers increase. A "bloom" of green or blue-green algae on the surface of the water may appear overnight, accompanied by an unmistakable musty, earthy or putrid odor.

"As cyanobacteria break down, they release toxins that can be an irritant to human skin and potentially lethal to animals," Johnson says.

Concentrations of algae develop as wind moves the toxin to the leeward, or downward, shore, where producers may find evidence of toxicity, such as dead mice, snakes and other animals near the water's edge. Toxicity is dependent on the species consuming the water, and the concentration and the amount of water ingested.

Blue-green algae produce two toxins, each with different symptoms. Signs of neurotoxin poisoning usually appear within 15 to 20 minutes after ingestion. In animals, symptoms include weakness, staggering, difficulty in breathing, convulsions and ultimately death. In humans, symptoms may include numbness of the lips, tingling in fingers and toes, and dizziness. Signs of liver poisoning may take hours or days to appear. Liver toxins can cause abdominal pain, diarrhea and vomiting in humans and death in animals.

Most blooms are obvious to the naked eye; however, blue-green algae can be present in water without a visible bloom, Johnson says. She advises producers to treat their water if they've previously had blooms.

Treatments include using an aeration/mixing device to create turbulence in the water or minimizing nutrient levels by establishing vegetated buffer strips around the water to intercept nutrients before they reach the water. Another long-term strategy is limiting livestock's pond or dugout access to areas that have been stabilized to prevent damage from trampling. Producers also may choose to pump water to a tank or trough after fencing the water source to keep livestock out.

Johnson advises producers to clean stock tanks on an annual basis to keep algae growth to a minimum.

Some producers are adding dyes, such as Aquashade, Blue Lagoon and Admiral, to nonflowing pond water to filter out ultraviolet rays. According to the products' labels, this treatment is most effective when used early in the season for water intended for livestock consumption. It is not recommended for human drinking water.

Algaecides, such as copper sulfate, are effective in killing algae blooms. However, these algaecides also can kill fish and damage the ecosystem of inland waters, Johnson says. Lethal levels of toxins may result as a consequence of algae cell walls rupturing when copper sulfate is used.

For procedures on treating water, check out NDSU Extension Service publication AS-954, "Livestock and Water." It's available online at <http://www.ag.ndsu.edu/pubs/ansci/livestoc/as954w.htm>.

Other treatments include suspending barley straw loosely in a mesh bag in the affected pond. A study from the Center for Aquatic Plant Management in Berkshire, England, says the most effective time to apply straw is before algae growth begins because the anti-algae agents released by the straw are more effective in preventing algae growth than in killing algae already present. The straw becomes active within a month and will continue to inhibit algae growth up to six months.

"While there are no quick fixes to control blue-green algae once they appear, reducing the amount of nutrients washed into ponds may eventually lessen the intensity of the bloom," Johnson says.

BEEFTALK: WITH COW SIZE, ONE CAN'T FORGET PRODUCTION POTENTIAL

The Dickinson Research Extension Center recently established two sets of cattle based on body weight. Since the year was dry, the cow size question came up quickly.

What size cow is right? How does one measure inputs versus production?

These two herds (groups) of cattle were weighed in the late fall or early winter. The difference in weight was 355 pounds.

The first herd of 52 cows averaged 1,216 pounds (856 to 1,395 pounds). The second herd of 50 cows averaged 1,571 pounds (1,350 to 1,935 pounds).

Earlier discussion detailed the difference in dry-matter intake for these two groups of cows. Projections were shown if the groups were placed in confinement on June 1 when the calves were approximately 3 months old and fed during the summer until the end of September.

The 1,216-pound group of cattle, with milk production estimated at 20 pounds peak, would have an average daily need of just less than 28 pounds of dry matter of a ration that was 60 percent total digestible nutrients and 9.8 percent crude protein. The 1,571-pound group of cattle, with milk production estimated at 20 pounds peak, would have an average daily need of just less than 34.5 pounds of a daily dry matter of the same ration.

By placing the two groups of cows on pasture, with normal forage production in southwestern North Dakota, the land mass required for a group of 50 cows weighing 1,216 pounds would be 529 acres. A group of 50 cows weighing 1,571 pounds would require 642 acres.

The heavier cows would require approximately 23 more tons of feed in a dry lot for 4.5 months. On pasture, the heavier cows would need approximately 113 more acres.

Does the output of the larger cows justify the extra nutrition? That is not an easy question because cow age and other factors need to be considered when calf production is estimated.

However, some idea of potential production from these two groups of cows can be estimated. For instance, since cows tend to reach peak calf production around 5 years of age, the actual previous calf production of the cows in each group could be utilized to estimate this year's production.

Performance records of body weight at weaning of cows aged 5 to 9 years and their respective calf's weaning weight were pulled and evaluated.

The older cows in the first group (current winter weight 1,216 pounds), averaged 1,272 pounds in the fall and weaned 602-pound calves, or 47 percent of their body weight. The heavier group of cows (current winter weight 1,571 pounds), averaged 1,463 pounds in the fall and weaned 603-pound calves, or 42 percent of their body weight.

This data trend was further examined by finding the percentage of cow weight weaned in all mature cows in the center's herd data system. The data evaluated actual weaning weight of calves and mature cows with calves of both genders.

All the cow records were allotted to 100-pound increments and weaning percentages were calculated. The 12-weight or lighter cows weaned 50 percent of their fall weight (1,242 pounds) with 617-pound calves.

Thirteen-weight cows weaned 45 percent of their fall weight (1,357 pounds) with 611-pound calves. Fourteen-weight cows weaned 41 percent of their fall weight (1,456 pounds) with 589-pound calves.

Fifteen-weight cows weaned 39 percent of their fall weight (1,549 pounds) with 598-pound calves. Those sixteen-weight and above cows weaned 34 percent of their fall weight (1,698 pounds) with 572-pound calves.