Boulder County Small Acreage Management Newsletter

Fall 2012

http://www.extension.colostate.edu/boulder/acreage.shtml

In this Issue:

From the SAM Coordinator

Since this will be the last newsletter for 2012, I would like to wish you all an early Happy Holidays and safe travels wherever you may go.

This time of year is great for planning activities for next year whether it is for weed control or grazing management. If you are considering reseeding now is the time of year to be doing it or be planning to seed at this time next year.

Take time to walk your pasture looking for problem areas, those with thinning grass, weedy areas or areas not being grazed evenly. Try to determine what is causing the problems and then what you can do to correct the problem.

Again I would like to encourage you to send me any article ideas you have or questions you would like answered. If you have a question or a topic that either we have not covered or you are wondering about; please send your idea into me. We'd be happy to consider it.

Thank you,
Sharon Bokan
Small Acreage Coordinator
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SAM Newsletters Online

View previous newsletters via the SAM link above.

SAM Email Listserv

If you are receiving this newsletter for the first time and are not subscribed to the boco_small_acreage@colostate.edu listserv, you may request subscription on the SAM website (linked in header above). This quarterly e-newsletter and other timely info will be distributed via this email listserv.
Subscribers may use the listserv also as a SAM info gathering mechanism. For example, you may inquire about who is available in the area supply hay, to perform swathing/baling, etc. The listserv is not a marketplace, however. Because it is hosted on the CSU server, NO COMMERCIAL EMAILS ARE ALLOWED. DO NOT ATTEMPT TO SELL ANYTHING VIA THE LISTSERV – THANKS. Use the newsletter ad section for these purposes.

Currently, there are 212 subscribers to the listserv

Weather Outlook

The NOAA forecasts for the next 30 and 90 days are showing that the state will most likely be warmer than usual and have equal chances of having either more or less than normal precipitation. Snow surveys won't start for a while yet so we'll have to wait till then to see how the snowpack is doing.
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Coming events and workshops

http://www.extension.colostate.edu/boulder/acreage.shtml

Upcoming events that may be of interest are the National Western Stock Show, Colorado Farm Show, Boulder Valley and Longmont Conservation Districts Seedling tree sale and the Colorado Agriculture Big and Small Conference. The National Western Stock Show (January 12 – 27, 2013, Denver) is a great way to connect with organizations and others who are raising all kinds of livestock. If you are considering getting some livestock this is an opportunity to talk to those who are involved with that species. It is also a great educational opportunity for your children or grandchildren. You can find more information at their website at
http://www.nationalwestern.com/

The Colorado Farm Show comes the following week January 29 – 31, 2013, at Island Grove Park in Greeley. The show features vendors from all aspects of the farming industry as well as speakers on a number of related topics. Again this is a great opportunity to connect with vendors and is a great educational event for children and grandchildren. More information on the Farm Show can be found at
http://www.coloradofarmshow.com

The Colorado Agriculture Big and Small Conference will be held February 13 and 14, 2013 at the Adams County Fairgrounds in Brighton. The conference will have sessions for commercial producers, livestock producers and even urban farmers. Additional information and registration can be found at
http://www.coloradoagriculturebigandsmall.com/

The Boulder Valley and Longmont Conservation Districts will be selling seedling trees from the Colorado State Forest Service. Information will be available beginning in November on their website at
http://www.longmontcd.org/Seedling-Tree-Program

I hope that you will take advantage of these great events.

2013 Small Acreage Management Volunteer Program

We will be taking applications for the 2013 Small Acreage Management (SAM) Volunteer program starting later this year. Volunteers receive 24 hours of training in plant identification, weed and grazing management, pasture establishment and general program information. Training cost is $95 which includes lunches and a copy of "Weeds of the West" book (price is $60 if you already have a copy of the book). In return, first year volunteers are required to provide 24 hours of volunteer time. This time can be by answering small acreage questions, identifying "weeds" that are brought into the office and providing control measures, writing articles for the quarterly newsletter, helping with the crop show at the county fair and other activities. Application deadline is February 8, 2013 with training to be held March 4, 11, 18, 25, 2013 from 8:30 am to 3:30 pm. More information can be found at
http://www.extension.colostate.edu/boulder/acreage.shtml
Please feel free to call me with questions.

2013 Wildlife Master Volunteer Program

What is a Wildlife Master? They are volunteers that are trained to help the public with human/wildlife conflicts. They provide current

information from Colorado State University, other land grant universities and state and federal wildlife agencies.

So if you have a skunk living under a deck, raccoon eating your corn, mice in the house or flickers pecking holes in your house, we can provide you with some solutions. To leave a message in the Wildlife Master voice mailbox, please call our main office number 303-678-6238.

Volunteers receive training from Wildlife Managers with Colorado Parks and Wildlife, Boulder County Parks and Open Space Wildlife Specialists, local rehabilitators and experienced Wildlife Master. If you are interested in becoming a Wildlife Master, please contact me. Applications for the program will be available on the website in early 2013 with training in March and April.

Fall Grazing Management Considerations

Adrian Card

The vigor of your pasture for next season is being created now. Before pasture grasses become dormant they are moving carbs produced by photosynthesis in the leaves (grass blades) into the crown and roots of the plant. Without sufficient leaf surface area (if grazed below 4"), grasses go dormant without enough fuel (carbs) to initiate strong growth in the spring, reducing forage biomass production.

Some of the late summer/early fall energy is put into bud formation. Similar to woody perennial species (trees, grapes, etc.), grasses establish all of the potential for next season's vegetative growth before they go dormant. If grasses are stressed from drought, trampling, overgrazing, etc. during bud formation, fewer buds will be formed, also reducing forage biomass production for the next grazing season.

Critical periods for carbohydrate storage and bud formation include the months of September and October. Prevent access to pasture until grasses are observed to completely brown-out, usually after several hard freezes. Dormant grazing has little impact on grass health, unless trampling becomes severe. Trampling will damage/kill grass crowns and buds.

Conversely, plan to remove animals from pasture when cool season grasses initiate growth in late winter/early spring. Grasses will use root and crown reserves (not new photosynthetic carbs.) until they have 4-5 leaves (about 6-8" tall). Grazing during this regrowth period reduces overall forage production. When grasses send out new growth in March/April, prevent access to pasture until grasses have reached at minimum average height of 6-8" tall.

Winter Weed Control

Sharon Bokan

While this may not seem to be the time of year for weed control, it is a good time to at least start planning your attack on your weeds for next year.

Biennials and winter annual weeds are already growing so you can be working on them right now. Depending on how many you have and how much snow is on the ground, you can be out when the weather is good and the soil is not frozen undercutting the rosettes or young seedlings. The biennial thistles, knapweeds and other biennials are easily controlled by removing the rosette before it has a chance to flower and produce seed next year. Prickly and blue lettuce, cheatgrass along with the mustards and other winter annual weeds can easily (of course when the soil is not frozen) be hoed or pulled. Even if you don't do any mechanical control, you can at least be noting what weeds you have, where these weeds are, how many

there are and what methods you have to control them (mechanical, biological or chemical).

For perennial weeds, there is limited work that you can do on them in the late fall and winter. About all you can do is plan your strategy and perhaps line up a contractor for help. They are not actively growing at this point so there's not much you can do outside. Inside you can identify what you have and what methods you have for control at appropriate times in 2013.

If you need help with identifying what weeds you have or what control methods are available, please contact the Extension Office.

While dead plant identification is tough, it can be done on some weeds/plants. The more you know now the better management you can do on your property.

How to Assess Hay for Quality

by Meg Sitarik, SAM volunteer

In today's uncertain economic state it is tempting to cut costs on the care and feeding of our animals. In the long run this is not a wise business decision. Feeding poor quality hay means you will have to compensate for the lack of nutrients in the poor hay by supplementing with additional feeds. This can be more expensive than paying the higher price for good hay. The most accurate way to evaluate hay is by having samples analyzed. This process involves taking core samples of multiple bales and sending them to a lab for testing. For a variety of reasons most folks are not going to do this. Therefore we need to rely on our five senses (sight, taste, touch, smell and hearing) to assess the quality of the hay we purchase. These are the six characteristics to evaluate.

- **Color**
- **Maturity**
- **Number of leaves versus stems**
- **Presence of weeds or foreign material**
- **Moisture content**
- **Palatability**

Sight Look for a natural green color that is associated with higher vitamins, minerals and proteins. More mature hay and/or hay that's been rained on, after cutting, will be a yellow to brown color indicating sun-bleaching and leaching of nutrients.

To evaluate **maturity,** look at the number of leaves versus stems, there should be more leaves than stems. The leaf contains most of the protein and the highly digestible fiber that is easily converted to energy. The younger plants have a higher percentage of leaves to stem. Lignin, a component of plant fiber, is not digestible, as the plant matures the amount of lignin increases causing the digestibility of the plant to decrease. Another clue to hay maturity is the presence of long leaves and the presence of seed heads. Seed heads indicate very mature hay with lower energy and protein values.

Weeds and **Foreign Material** are easy to spot. Expect to see a few weeds; however, an abundance of weeds is unacceptable. Weeds are low in nutritional value and some are toxic to animals. For more information: http://www.vth.colostate.edu/poisonousplants

Foreign material is a huge clue that the hay has not been managed well. The occasional twig or other natural item is fine. Baling twine, fast food wrappers, wire, nails etc. are major problems and this hay should not be purchased. Insects also affect the quality of hay. Blister beetles contain a toxin that is severely irritating to the gastrointestinal and urinary tracts of animals.

For more information on blister beetles go to: http://www.ext.colostate.edu/pubs/insect/05524.html or http://insects.tamu.edu/fieldguide/bimg167.html

Moisture Content can be assessed by sight. If the hay is baled while it is too wet there is a risk of mold growing within the bale. Dark wet places are ripe for mold growth. Mold will lower the protein and energy, may release toxins that can cause abortion, colic and other nasty problems. Moldy hay also generates heat and can become combustible. The only way to find out if a bale is moldy is to break it open since the mold may not be visible from the outside.

Touch

Another problem can be hay that has been dried too much. In this case the leaves will be so brittle that by the time you walk from the hay stack to the feed bunker most of the leaves will have crumbled. I once opened a bale of alfalfa and when I removed each flake it crumbled so badly that I was left standing in the hay room with an armful of stems.

Taste, the animals not yours!

Palatability is the animals desire to eat the hay. This is easy to assess, all you have to do is look to see if your animals are eating the hay. Younger plants which are higher in protein and energy are much more palatable then older plants.

Smell

This is my favorite of the senses. Hay should smell clean and fresh, like a beautiful spring day, is the only way I know how to express this. If it you smell mold, dust or a burnt smell it is not good quality hay.

Hearing

Pay attention to what the vendor is saying. Are they happy to answer your questions? Or are they being vague and making excuses for the product? Someone who produces good quality hay is proud of the hay product and willingly answers your questions. Find a good reliable source of hay and treasure that resource. Establish a friendly working relationship. Repeat customers are an asset to the vendor as well. I have found that in times of shortages repeat customers will usually be taken care of before a person who constantly shops around.

In summary poor quality hay is not a sound financial decision. Yes it saves you some cash in the short run but in the long run it will cost you more money and jeopardize the health of your animals. Chemical analysis is the most accurate assessment tool but it is not always practical. At https://utextension.tennessee.edu/publications/documents/sp437-a.pdf you will find a user friendly worksheet called the Score Card for Visual Hay Quality Evaluation. Another source for more in-depth information is from Washington State University Extension Agency, www.smallfarms.wsu.edu/animals/BuyingHay

Drought nitrates and forage

With the dry conditions this year, there is concern that forages will contain higher levels of nitrates. High levels of nitrates can cause poisoning in mostly ruminants. Horses can also be affected but on a much less frequent basis.

Under normal growth conditions, the nitrates are taken up by the roots and then converted and utilized in the plant as proteins. In drought conditions, the plant is unable to convert the nitrates into proteins. The nitrates then accumulate in the plant to potentially toxic levels. Certain plants are known to be nitrate accumulators such as corn, sorghum, sudangrass, and weeds such as bindweed, kochia, Russian thistle. Small grains such as wheat, oats and annual ryegrass can also accumulate nitrates.

In ruminants, the nitrate is converted to nitrite which then converts to ammonia and proteins. When nitrate levels in forage are high, the nitrate conversion to nitrite is quick but ammonia conversion is slower. The nitrites build up in rumen and then pass into the bloodstream. The nitrites react with the blood's hemoglobin and prevent oxygen from attaching to blood cells. This causes the animals to suffocate since the oxygen is not transferred throughout the body.

The only way to tell if your hay has high levels is to have it tested. If you do have hay with high levels, you may still be able to feed the hay. Prior to using the high nitrate hay, consider the following.

Condition of your animals – poor health, lactating animals, you may not want to feed high nitrate forage to them.

Keep hungry animals out of high nitrate areas – for obvious reasons they will consume more.

Dilute the high nitrate forage with low nitrate forage.

Feeding an energy supplement

References:

Nitrate poisoning
http://www.ext.colostate.edu/pubs/livestk/01610.html

Beware of nitrates
http://www.ext.colostate.edu/drought/bewareofnitrates.html

Colorado farms and ranches risk nitrate poisoning in drought stressed forages
http://www.ext.colostate.edu/drought/tips_nitrate.html

Nitrates and purchased hay
http://www.ext.colostate.edu/drought/tips-nitrate-hay.html

Colorado Water

Miners panning for gold and early farmers knew that they must develop a method for sharing Colorado's limited water supply. There simply wasn't enough for everyone and for all purposes. In a state that only receives an annual average of 15" precipitation per year, water and the right to use it played and still plays a major role in Colorado's settlement and development. Nineteen other western and Midwestern states and Mexico rely on Colorado's rivers for some portion of their water supply.

Development of Colorado Water Law began in the 1870's. During this time there was significant irrigation ditch development along with mining activities leading to many disputes. By 1876, the Prior Appropriation Doctrine had been primarily adopted as the system that Colorado would use. A Colorado Supreme Court case in 1882 decided that the Prior Appropriation Doctrine was the only method Colorado would use. Eight other western states use Prior Appropriation while all other states use the Riparian system or a mix of the two systems. Prior to Prior Appropriation, the Riparian system existed. If you lived along a water way or a body of water you had the right to use the water contained in that water way or water body. In an area with sufficient precipitation, the Riparian system can provide adequate water to all users. However, in an area such as Colorado with limited precipitation and droughts, such a system doesn't work. The Prior Appropriation Doctrine states that the first person to divert water and put it to a beneficial use has the first right to use the water. The date that a person makes their diversion is recorded and that becomes their priority date. Someone with a water right dated 8/1/1860 has very senior rights and would be guaranteed getting water even in the dry years. Another person with a right dated 8/1/1898 has junior rights to the previous person and may not be guaranteed water in a dry year. See the example at the end of the article for how this works.

A water right is a usufructory right, you have a right to use the water but you don't actually own the individual water molecules. The Colorado Constitution states "*The water of every natural stream not heretofore appropriated within the state of Colorado is hereby declared to be the*

property of the public and the same is dedicated to the use of the people of the state subject to appropriation as hereinafter provided

Colorado has four major rivers/drainage basins and is divided into seven water divisions. The basins are the Arkansas River, Colorado River, Missouri/Platte River, and the Rio Grande. Water rights are divided into 3 categories Tributary, Non-Tributary or Not Non Tributary and Designated Ground water. Tributary is the largest category of water rights and includes all waters that are hydrologically connected to a surface stream, lake/pond/reservoir and alluvial aquifers. Non-Tributary and Not-Non Tributary waters are water separated from surface streams and alluvial aquifers such as the Denver Basin aquifers. Designated ground waters are alluvial aquifers that lack connection with streams and larger identified aquifers.

Water rights unlike mineral rights, which are commonly sold with an acreage, are often sold separately. Any change in a water right such as ownership change, the amount used, the diversion point or change in use must be recorded with the Colorado Water Court or other agency depending on the change. When dealing with Colorado water rights, it is best to consult with an attorney or the State Engineers office that familiar with the system to ensure that your rights are accurately and properly recorded. Augmentation plans are needed when a use will change the quantity in a water source harming other more senior water rights holders. The plan defines how you will ensure that your change will not alter the flow by providing water from another source. These plans must be approved through the State Engineers Office. Wells are required to have a permit in Colorado and may require an augmentation plan if the water being pumped comes from subsurface water connected to a river.

Ditch companies were formed in the late 1800's to help with construction of larger ditch systems. The ditch company system was patterned off the acequias used by the Spaniards in New Mexico. Financing for some of the early ditch systems in the state came from English investors. The ditch companies hold the water rights for all shareholders in the ditch. Shares in a ditch company vary in how much water they provide depending on the size of the water right (acre feet) and the number of shares. When purchasing a property with ditch shares or the ditch shares themselves, it is best to find out exactly how much water each share provides. One share may only supply you with 1 day of irrigation per year while one share on another ditch may provide you with five days of irrigation per year. Shareholders are usually expected to help maintain the ditch and may even be the ditch rider. It is always a good idea to attend ditch company meetings and get to know the officers so that you know who to contact with issues and problems.

An Example:

If there is 5 acre feet of water available and farmer A with a water right dated 8/1/1879 requests his 3 acre feet and starts irrigating and then farmer B with a right dated 4/1/1878 calls requesting his 4 acre feet later that same day, the water commissioner must notify and then shut off 2 acre feet of farmer A's water since his rights are junior. Farmer A will still have access to 1 acre feet of his 3 acre feet.

References:

Colorado Water Law for Non-Lawyers, P. Andrew Jones and Thomas Cech, University Press of Colorado 2009

Principles of Water Resources, Thomas Cech, John Wiley & Sons, Inc., 2005 2nd edition

Irrigation Ditches and their operation, CSU Fact Sheet 6.701, Colorado State University, R. Waskom, E. Marx, D. Wolfe and G. Wallace

Place your SAM related classified ad or print advertisement here!

Classified Advertising Rates are as follows:
SAM Volunteer: 20 cents/word
4-H Member/Leader: 20 cents/word
General Public, Individual: 25 cents/word
General Public, Business/Show: 30 cents/ word

Print Ad Rates are as follows:
Quarter Page Ad: $50.00
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Full Page Ad: $100.00

Email Sharon Bokan for more details
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