



Extension

Pueblo County

Southern Colorado Ag News

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October 2010

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Lots of articles, lots of programs!

This issue of Southern Colorado Ag News is packed! Be sure to check out the great classes, events, and conferences coming up! I have extended the deadline for the Building Farmers and Rancher program, so be sure to look at those details on page 7. Classes are on Mondays starting Oct. 25 and applications are due Oct. 15.

Another great program I've started is for assistance with range monitoring in Pueblo County, with funding from Grazing Lands Conservation Initiative (GLCI). Check out page 6 for more information. Also, get ready for a new look to your Southern Colorado Ag News in January 2011!

Best wishes,

Emily Lockard
Extension Agent
Range and Natural Resources

Self Medicating Livestock by Emily Lockard, CSU Extension

A recent study by Dr. Juan Villalba (Villalba et al., 2010) and his colleagues at Utah State University shows that lambs can be trained to prefer a food with plant secondary compounds (PSC) to help alleviate internal parasites.

First, a little more information about secondary compounds and how they differ from primary compounds in plants. Primary compounds are for maintenance, growth, and reproduction in plants. All plants contain PSC and for a long time scientists didn't know what the purpose of PSC were in plants. Now, it is believed they are used by plants for self defense (limit consumption by herbivores), attracting insects for reproductive purposes, stress resistance, and protection from UV radiation. Human interest in PSC now centers on their potential for positive medicinal purposes. PSC are often advertised as having antioxidant properties in foods such as blueberries (flavonoids) or coca (alkaloids).

Continued page 2

Emily Lockard is the Extension Agent for Range and Natural Resources Management in the Colorado State University Extension Pueblo County office.

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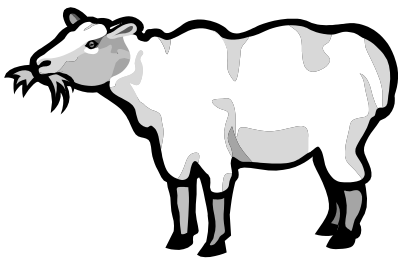
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Self Medicating Livestock (continued from page 1)

The truth is that PSC occur in all plants, but at this point we are not sure of all of their properties, nor do we know exactly how all PSC interact in a human's stomach, an herbivore's rumen, or how they interact with each other, nutrients, or other compounds in plants. As with any compound, it depends on the dose to decide if it is beneficial or toxic. Just as if you eat too many blueberries the potential antioxidant effect may be outweighed by the negative gastrointestinal feedback (aka make you feel sick or worse or be lethal in an extremely large dose). You may have already suspected an ability of livestock to select foods for medical purposes, but what the studies in Dr. Villalba's paper show that sheep with parasites can be trained to prefer a food with PSC that does not normally contain PSC.

There are many types of PSC, but here are just a few: tannins, saponins, alkaloids, and terpenes. These PSC are found in the following forages, tannins in birdsfoot trefoil (*Lotus corniculatus*), saponins in some varieties of alfalfa (*Medicago sativa*), alkaloids in entophyte-infected tall fescue (*Lolium arundinacea*), terpenes in sagebrush (*Artemisa tridentate*), and juniper (*Juniperus osteosperma*).

What Dr. Villalba and his colleagues at Utah State University did was expose lambs that had internal parasites (IP) and lambs that did not have IP to alfalfa with tannins (AT). They randomly selected 26 lambs from a group of 40 and tested all 26 lambs for parasites. Of the lambs that were positive for parasites, 20 were randomly selected for the study. Of those 20 lambs, 10 were given Ivermectin to eliminate their parasite loads. The other 10 lambs were not given medication to reduce their parasite loads. All 20 lambs were fed plain alfalfa (negligible amount of tannins) for 10 days from 8 a.m. to 11 a.m. To calculate how much the lambs ate the lambs were fed a specific amount and their refusals were weighed, making it easy to calculate what they had consumed. Then lambs were given a preference test between alfalfa and AT for days 11-13. At this point, all lambs preferred alfalfa. On days 14-15 all lambs were only offered AT and refusals were weighed. During days 16-21 all lambs were offered both alfalfa and AT, testing their preference. This is when things got exciting. Lambs with parasites preferred the AT over alfalfa, while lambs without parasite loads preferred alfalfa. This pattern of conditioning lambs to AT continued on days 22 and 23 and preference tests were given on days 24 and 25. Then lambs were offered alfalfa on days 26 and 27, and tested for their preference of alfalfa versus AT on days 28 and 29. On day 29 lambs that had not been treated with Ivermectin were given a dose of Ivermectin on day 29 and day 34. Between day 29 and 34 lambs were only offered alfalfa. On days 35 to 39 lambs' preference between alfalfa and AT was tested for the last time. Fecal tests were performed on days 1, 10, 17, 24, and 37 to test for internal parasites.



During the first and last two days of testing, the lambs initially not treated with Ivermectin did not differ in their consumption of AT, but on the rest of the testing days the lambs with parasites consumed more AT than the lambs without parasites. It was found that preference for AT had a direct relationship with the lambs' parasite load. While the lambs had to learn the effect of alfalfa with tannins, they soon were able to benefit from the anthelmintic properties, thus reaffirming their preference for AT compared to the food offered that did not contain anthelmintic properties (alfalfa). These benefits and preferences have been shown before in other studies with lambs (Lisonbee et al., 2009). In Lisonbee's study, lambs with parasites consumed more of a tannin containing supplement than lambs without internal parasites.

Selecting Replacement Heifers by Marvin Reynolds, CSU Extension/Pueblo County

Selecting replacement heifers is the backbone of a productive cow-calf operation. The replacement heifers selected will affect the future development of the entire cow herd. Producers may keep 30 percent or more of their heifers each year to select replacements from if they want to maintain their cow herd size.

Historically, replacement heifers have been selected in the fall at weaning on the basis of age, weight, conformation, frame score, sire, the dam production records and other traits. The traits selected are the ones most important to the producer.

Age at puberty is an important production trait. Often, the oldest heifers will be the largest and heaviest. They may also reach puberty sooner. The breed of cattle can also have an impact on the age at puberty. Age at puberty can be decreased by the selection processes of: select a breed with a younger age at puberty, select within a breed for younger age at puberty or crossbreed with another breed that has a similar or younger age at puberty to your herd.

Selecting heifers that are the largest in the herd have three significant factors. One, this selection process can increase the cow size over time, birth weights of calves will likely increase, and steers from the larger cows will also finish out at heavier weights.

If the heifers selected are large and fleshy, they may have excess fat in their udders. If this is the case, they will have filled their udder space with fat and not milk. Milking ability is important in heifer selection but has a low heritability estimate. That means, it will take time to increase milk production when selecting for this trait within the herd.



Because age at puberty in beef heifers is hard to measure, a reproductive tract scoring system (RTS) has been developed. This five-point system helps estimate how close to puberty a heifer may be by palpation. Scores are subjective estimates of maturity. They should be done by someone experienced, often a veterinarian.

Conformation is one selection criteria that shouldn't be overlooked. Heifers should be evaluated for the conformation of their feet, legs, and udder. As heifers grow into mature cows, their feet and legs are important to be able to carry them for their full lifetime. The udder and teat shape will help determine the females ability to produce and deliver an adequate amount of milk for her calves.

Don't overlook the disposition of the heifers. If they have a calm disposition while being worked relative to others in the herd, they will likely have a calm disposition later in life. This can reduce wear and tear on your equipment and your own nerves. Watch the dam as well. Disposition is both a heritable and a learned trait.

When selecting replacement heifers, keep in mind the production goals of the operation. If the cow herd size is where you want it, select for moderate frame sized heifers. Keeping production records of females can help provide objective information to help in the selection process.

For more information on selecting replacement heifers contact the Colorado State University Extension Office in your County.

Needle Knowledge for Cattle Producers by Michael Fisher, CSU Extension Agent

How much thought do you give to the needle that you use when giving shots to your cattle? It may not seem like that much of a concern but needle management can be a very serious health issue for both the livestock and the end product consumer. When you select/purchase needles, you should invest in quality. I realize that livestock producers are continually looking for ways to cut costs but saving a dime or even a quarter on inferior needles can cost you in the long run in lost vaccine or a condemned carcass.

Choosing a needle size seems like a simple task but some people struggle with this. There are typically three things that need to be considered when selecting your needle size: injection type, medication viscosity, and animal size. Usually, the injection types that we might use on the ranch/farm without a veterinarian present are the subcutaneous injection (**sub Q**) and the intramuscular injection (**IM**). The sub Q injection is one that is administered underneath the skin in the area between the hide and the muscle tissue. Typically, a needle that is $\frac{1}{2}$ to $\frac{3}{4}$ of an inch long will be used for this type of injection and a "tenting" technique is utilized in the administration. On older, fatter, or thicker hided cattle, some producers may use a one inch long needle to give the sub Q shot. The IM injection is as its name implies an injection into the muscle. The IM injection usually utilizes a needle that is one inch to 1 $\frac{1}{2}$ inch long.

Medication viscosity is how thick the medicine is. A thin or watery vaccine or antibiotic can be administered through a smaller diameter needle than a thicker medication can. The needle's diameter is known as gauge. The larger the gauge number of the needle, the smaller its diameter is. (i.e. a 20 gauge needle has a smaller bore diameter than a 16 gauge needle.) Matching viscosity with the proper needle gauge is important for a couple of reasons. First, a medication with a thin viscosity that is applied through a large bore needle may leak back out of the animal after the needle is removed. This is a waste of money and does the animal no good. Secondly, a medication with a thick viscosity that is applied through a small bore needle may be difficult to administer because there is not enough space in the needle chamber for the medication to travel through it readily. Not only can this make application slower but some of the thicker medications can give a burning sensation to the animal. This can contribute to animal movement and greater potential of a broken needle. So you want to make these administrations as quickly and as safely as you can. Along with viscosity, the size of the animal has a role in deciding diameter of the needle. Often times, veterinarians will split the animal size into three categories when determining the proper needle size. These are less than 300 pounds, 300 to 700 pounds, and greater than 700 pounds.

In general needle gauge recommendations for sub Q injections are:

- Less than 300 pounds – thin viscosity – 18 gauge
- Less than 300 pounds – thick viscosity – 18 to 16 gauge
- 300 to 700 pounds – 18 to 16 gauge
- Over 700 pounds – 16 gauge

When administering an IM injection the general needle gauge recommendations are:

- Less than 300 pounds – thin viscosity – 20 to 18 gauge
- Less than 300 pounds – thick viscosity – 18 gauge
- Over 300 pounds with a thin viscosity – 18 to 16 gauge
- Over 300 pounds with a thick viscosity – 16 gauge



www.1st-product.com

Continued page 5

Needle Knowledge for Cattle Producers (continued from page 4)

Another needle question that I get from time to time is how many times you can use one needle before replacing it. Myself, I like to replace a needle every time I change animals. When you inject multiple animals with the same needle, you run the chance of transferring a blood borne disease between animals. That being said, I fully understand that most people feel that this takes too much time and costs them too much in needle expense. Some of the BQA programs are recommending that needles be used for a maximum of ten to fifteen injections, which is roughly when the needle begins to become dull. The needle should be changed immediately if any of the following situations are encountered:

The needle becomes bent.

The needle becomes contaminated with dirt, fecal material, or irritating chemicals.

The point of the needle is damaged or develops a burr.

You inject an animal known or believed to be sick or carrying a disease.

Your veterinarian recommends a different strategy.

If you do decide to use a needle on multiple cattle, there are a couple of biosafety issues you should consider. If you are using a killed vaccine, you might want to keep a sponge present that has a disinfectant or alcohol on it. Wipe the needle with the sponge between animals. This will help prevent the spread of diseases and help to prevent infections that might result from transference of dirt or fecal material. However, this practice is unwise when administering a modified live vaccine. The alcohol or disinfectant can destroy the active elements of a modified live vaccine, making it worthless.

In the case of a needle breaking off in an animal, you need to take action immediately. The needle needs to be removed. In many cases the needle remnants can be retrieved at the ranch. However, if you are unable to get the piece(s) out, mark the location where the injection was given and have your veterinarian surgically remove the broken needle. In the case that the veterinarian is unable to retrieve the broken needle the animal should be permanently identified and not allowed to enter the food chain. Cattle that are harvested and found to have needles in them at the packing plant will be condemned.

NOXIOUS WEED CONTROL PLAN

- 50% **Cost Share** is available to property owners who apply and are afflicted with a species of weed listed on the Colorado Noxious Weed A or B List.
- Turkey Creek Conservation District highlights their role in Pueblo County's **Noxious Weed Control Program**.
- User friendly method of making this cost share an easy reality for landowners.
- Contact Turkey Creek Conservation District at 719-543-8386 ext. 116 or email: info@puebloweeds.com

website: www.puebloweeds.com

Range Monitoring Program in Pueblo County

Do you currently have a range monitoring program? Would you like to expand it?

Have you been thinking about monitoring, but don't know where to start?

This is a great opportunity to create a permanent transect for range monitoring. Now is the time to start!

You will be assisted in setting up one permanent monitoring site using the new Colorado Rangeland Monitoring Guide. This guide is endorsed by Colorado Association of Conservation Districts, Colorado Cattlemen's Association, U.S. Forest Service, CSU Extension, Colorado Grazing Lands Conservation Initiative, Colorado Public Lands Council, Bureau of Land Management, Colorado State Board of Land Commissioners, and USDA-NRCS. To be a part of this program your property must be in Pueblo County, be grazed by livestock, and this will be an "active" learning experience so your presence is required! Currently, there is funding for 10 sites.



What will we do? We will do an intake of the general information about the site such as soil type and past grazing use.

Then we will use short-term monitoring indicators such as creating a permanent photo point, measuring stubble height and performing the grazing response index.

We will also do long-term monitoring. These are indicators that only need to be performed every five years such as line-point intercept, cover and frequency, and plant density.

Why go through all of this work? If you lease land or want to insure that future generations will be able to ranch on your property, the information you gather through monitoring can help you to make more educated decisions. Writing information down and taking pictures also helps you to "see" the impact you have, good or bad.

Give me a call if you want more information, or to sign up. Your time is your investment and you will receive your own copy of the Colorado Rangeland Monitoring Guide.

Call Emily Lockard, CSU Extension- Pueblo County (719)583-6566
to sign up or for more information.

Self Medicating Livestock (continued from page 2)

Other studies show that it takes 50g of quebracho tannin (a type of tannin isolated from plants) to reduce parasitic loads in sheep. (Butter et al., 2000.) So, what plants do tannins occur in naturally? Birdsfoot trefoil is one plant species that has been found to reduce parasitic loads as well as have other health benefits for cattle and sheep (MacAdam et al., 2006) (www.plantmanagementnetwork.org). Keep in mind, birdsfoot trefoil requires 18" of precipitation so using birdsfoot trefoil may only work well on an irrigated pasture in parts of Colorado. Also, keep in mind that PSC levels vary in different plant varieties and they may also differ as a result of soil type and water availability.

If you would like to know more about studies done at USU on livestock foraging behavior, check out the BEHAVE website at www.BEHAVE.net or contact me at (719) 583-6566 or Emily.Lockard@colostate.edu.

Villalba, J.J, Provenza, F.D., Hall, J.O. and Lisonbee, L.D. 2010. Selection of tannins by sheep in response to gastrointestinal nematode infection. *J. Anim. Sci.* 88:2189-2198.

Know a Native– Galleta

Galleta, *Hilaria Jamesii*

- Native
- Perennial– lives more than two years
- Rhizomatous– has rhizomes, which are an underground stem with nodes, scale like leaves, and internodes. Plants that are rhizomatous are able to fix atmospheric nitrogen with the help of rhizobacteria.
- Warm season– grows mainly in summer with adequate rain.
- Reproduction– through rhizomes and seeds. Occurs in mixed stands and monocultures.
- Can withstand heavy grazing.

Nutrients and energy values

Fresh, stem cured **Dry matter** 100%, **Total digestible nutrients** 60%, **Digestible energy** 2.28 Mcal/kg, **Protein** 4.3%, **Crude Fiber** 28.4%.

While green it is rated as good for cattle, horses, and wildlife, but fair for sheep. Galleta becomes worthless to fair for all classes of livestock during the dormant periods and is rarely grazed in the fall or winter unless other forage is not available.

Jurgens, Marshall H. *Animal Feeding and Nutrition*. Dubuque, Iowa: Kendall/Hunt Publishing Company, 2002.

Stubbendieck, James, Stephan L. Hatch, and L.M. Landholt. *North American Wildland Plants*. Lincoln and London: University of Nebraska Press, 2003.



GROUP OF GALLETA, TWO VIEWS (A), X 5; FERTILE SPIKELET (B), STAMINATE SPIKELET (C), AND FERTILE FLOWERS (D), X 20. (ILLUSTRATION 1449, U.S.A.)

Earn Your Certificate as a Colorado Master Gardener

Take Your Gardening Skills to the Next Level
Earn Your Certificate as a Colorado Master Gardener

With a combination of classes (taught by Colorado State University professors and other horticulture experts) and fun, "hands-on" activities, you'll learn how to:

- Build a sustainable landscape
- Diagnose plant health challenges
- Evaluate soils
- Develop water wise techniques for lawns, vegetables, rock gardens... all your plants!
- Manage landscape weeds
- Extend the vegetable growing season
- Many more advanced gardening skills too numerous to list
-



For more information visit the Colorado Master Gardener website at www.cmg.colostate.edu

New classes begin each January.
To receive more information, please contact the
CSU Extension office in Pueblo (719) 583-6566

Events and Announcements

Managing Tough Times: How Can Your Family Be More Resilient?

**Otero County Extension Office
411 North 10th Street Rocky Ford
October 21, 2010
5-8 p.m.**

Managing Tough Times is a workshop where agricultural producers can learn about practices their family can use to reduce financial, production, and human risks and of tools they can use and actions they and their families can take in tough economic times to decrease their financial, human, and production risks.

Managing Tough Times provides information on topics important to farmers and ranchers.

- Business and strategic planning
- Manage cash flow, debt, and assets
- Use feasibility analysis
- Explore alternative crops and farming options
- Manage debt better
- Use debt restructuring
- Identify resources to use in tough times



Register by contacting Bruce Fickenscher, 719-438-5321 or Marvin Reynolds, 719-583-6566 no later than October 14th. Dinner will be provided.



South Pueblo County Conservation District



Annual Meeting– Please make reservations by October 19, 2010– 543-8386 Ext. 3

Date: October 21, 2010

Time: 6:00 p.m. cash bar

Place: La Renaissance, Pueblo, CO

Dinner: \$10 @ 6:30 p.m.

A brief business meeting followed by:

Entertainment: Unexpected Pleasure Barbershop Quartet



South Pueblo County Conservation District Highlights– 2010

- Sponsored “Adopt a Classroom” for two schools
- Sponsored an “Ag in the Classroom” teacher
- Sponsored a student for Camp Rocky
- Sponsored an EQUIP Invasives project and received a grant for the spraying and control of tamarisk on several hundred acres; worked with a number of partners
- Continued with a soil testing program, Pueblo County FFAers took soil samples for producers

Board Members

200 S. Santa Fe Ave., 4th Floor
Pueblo, CO 81003
(719) 543-8386
Fax: (719) 545-4835

Ed Angelovich	President
Ryan Froman	Vice President
Doug Thacker	Secretary– Treasurer
Devin Cossel	Member
Vacant	Member

2010 Pueblo County Building Farmers and Ranchers Program



Building Capacity
Building Community

Farmers and Ranchers
Teaching Farmers and Ranchers

Applications
Due October 15!

Classes Start
October 25!

Program Lineup

Dinner 5:30 – 6:30 p.m.

Presentations 6:30 – 8:30 p.m.

Mon, Oct 25–Jeff Tranel, CSU Extension- "Business Planning and Farmers'/ Ranchers' Perspectives"

Mon, Nov 1–Emily Lockard, CSU Extension and Rich Rhoades, NRCS-
"Intro to Local Resources" and TBA- "Activation Energy"

Mon, Nov 8–Dan Hobbs, Hobbs Family Farm- "Wholesale and Institutional Marketing:
Farm to School, Restaurants, and Stores"

Mon, Nov 15–Ryan Morris, Country Roots Farm- "Direct Marketing:
Roadside Stands, CSA, Farmers Markets"

Mon, Nov 22 – Doug Wiley, Larga Vista Ranch-"Alternative Livestock Business" and
Jeff Tranel, CSU Extension- "Budgeting and Planning Software Applications"

Mon, Nov 29 – Reeves and Betsy Brown, 3R Ranch- "Succeeding as a Livestock Producer"

Mon, Dec 6 and Dec 13 – Presentation of Class Participant Business Plans*

*Certificates of completion are awarded after presentation of business plan.

Those with certificates of completion may apply in December to the 2011 mentorship program.

Farmers and Ranchers of all levels of experience are encouraged to participate!

Application and Registration

Application and registration forms are available online at:

<http://pueblo.colostate.edu>
or request at (719) 583-6566

Deadline for Applications: Friday, October 15 Applicants will receive notice of receipt.

All classes held at

Pueblo County CSU Extension Office
701 Court St. Suite C (Second floor)

Cost

A minimum of 10 paid registrants required for program to be held.

New and Int. Farmers and Ranchers - \$160 for all 8 sessions (\$240 for 2 with one set of handouts)
Experienced Farmers and Ranchers - \$80 for all 8 sessions or \$25 á la carte

Questions: Emily Lockard, Extension Agent
(719) 583-6566



This material is based upon work supported by USDA/CSREES under Award Number 2007-49200-03892.

CSU Extension programs are available to all without discrimination



October**October 14, 2010**

Sangre de Cristo Resource Conservation and Development Council 2010 Annual Meeting
Fremont Administration Building, 615 Macon Ave., Room 207, Canon City, CO
Refreshment provided.

Contact: (719) 543-8386 ext. 4

October 21, 2010 Managing Tough Times: How Can Your Family Be More Resilient?

Location: Otero County Extension Office, 411 North 10th Street, Rocky Ford, 5-8 p.m.

Register by contacting Bruce Fickenscher, 719-438-5321 or Marvin Reynolds, 719-583-6566 no later than October 14th. Dinner will be provided.

Building Farmer and Rancher program applications due October 15!**Classes Start Monday, October 25, 2010 at 5:30 p.m.**

Building Farmer and Rancher Program

Location: Pueblo County Extension Office, 701 Court St., Suite C, Pueblo, CO

Contact: Emily Lockard (719) 583-6566

**October 21-** South Pueblo Conservation District Annual Meeting

Please make reservations by October 19, 2010, 543-8386 Ext. 3

Time: 6:00 p.m. cash bar **Place:** La Renaissance, Pueblo, CO **Dinner:** \$10 @ 6:30 p.m.

A brief business meeting followed by: **Entertainment:** Unexpected Pleasure Barbershop Quartet

November**November 15-19** Colorado Association of Conservation Districts Annual Meeting

Colorado Springs Crown Plaza **Website:** www.cacd.us

November 17-19 Colorado Cattlemen's Association Midwinter Meeting, Colorado Springs

Registration: \$100 for members **Website:** www.coloradocattle.org

November 30- December 2 Colorado Section, Society of Range Management and Colorado

Division of Wildlife, Habitat Partnership Program

Doubletree Hotel, Grand Junction, CO

Registration: Before Nov. 1 \$100/ after Nov. 1 \$115

January 2011

Colorado Master Gardener Classes begin

For more information please contact the CSU Extension office in Pueblo at (719) 583-6566

February 2011

February 3 Arkansas Valley Farm/Ranch/Water Symposium in Rocky Ford, CO \$20/person, \$30/couple, \$5/student, and \$5 late registration \$200/booth, \$100/financial sponsor.

www.farmranchwater.org/

February 6-10

Society for Range Management Annual Meeting, Billings, MT

Before Dec. 3 Members \$260/ non-members \$350/ after Dec. 3 Members \$335/ non-members \$420

Monthly meetings:

Pueblo County Stockmen's Association

Meets the first Thursday of each month at Mesa Vet Clinic at 7:30 p.m.

Turkey Creek Conservation District meets the 2nd Tuesday of every month, Time: 2:30 p.m.

Location: 200 S. Santa Fe Ave., 4th floor, Call: (719) 543-8386 Ext. 116 for details

South Pueblo Conservation District meets the 3rd Thursday of every month, Time: 7:30 p.m.

Location: 200 S. Santa Fe Ave., 4th floor, Call: (719) 543-8386 Ext. 3 for details