



The Grazer's Gazette

A Newsletter about Livestock, Pastures and Rangeland
Edited by John M. Harper, Livestock & Natural Resources Advisor, Mendocino & Lake Counties

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John Harper's Livestock & Natural Resources Blog Updates March 19, 2010—April 22, 2010

*From time to time **The Grazer's Gazette** will reprint articles from John Harper's on-line blogs and postings to Facebook and Twitter. If you are not already on John's email distribution list and would like to get this information when it is posted, please contact the UC Cooperative Extension at 707-463-4495 or email cemendocino@ucdavis.edu with your current email address. Also, be sure to notify us of email or address changes so that you continue to receive timely information.*

Targeted Grazing by Cattle March 19, 2010

Targeted grazing by sheep to control weeds, like our Vines and Ovines project is becoming more popular, but did you know that cattle are also useful in targeted grazing? Researchers at Oregon State University have discovered that cattle, through targeted grazing, benefit forest seedlings. Their work done on conifer plantations of Douglas fir and ponderosa pine used cattle to graze the competing understory. On those plantations the understory of predominately grasses compete with the seedling trees, retarding their growth.



In their study the researchers wanted to find out if by grazing cattle to reduce the common grass orchardgrass, that more soil moisture would be available to the trees. They found that seedling water stress levels during spring and summer were similar in a cattle-grazed vs. ungrazed area, but in summer, water stress was reduced significantly in the grazed area. Soil water content was higher in the grazed area, especially at the 10-20 cm soil depth. End of

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season (July) orchardgrass root growth was reduced 18% and 15% with grazing. They concluded that repeated cattle grazing of orchardgrass reduced transpirational surface area and root growth sufficiently to increase soil water availability to seedlings. Thus, prescribed cattle grazing on conifer plantations can enhance seedling physiological status by acting as a regulator of above- and belowground competition.

Additional Reading

Karl, Michael G. and Paul S. Doescher. 1993. *Regulating Competition on Conifer Plantations with Prescribed Cattle Grazing*. *Forestry Sci.* 39(3):405-418.

Hops—It's Not Just for Beer Anymore

April 28, 2010

Given Mendocino County's past history of hop production and that hops are closely related to that other plant that both Lake and Mendocino Counties are known for, I thought you would find the following that came via the American Sheep Industry's news service of interest.

An Agricultural Research Service (ARS) scientist may have found a way to cut the amount of ammonia produced by cattle. To do it, he's using a key ingredient of the brewer's art: hops.

Cattle, deer, sheep, goats and other ruminant animals depend on a slew of naturally occurring bacteria to aid digestion of grass and other fibrous plants in the first of their four stomach chambers, known as the rumen.

The problem, according to ARS microbiologist Michael Flythe, comes from one group of bacteria, known as hyper-ammonia-producing bacteria (HAB). While other bacteria are helping their bovine hosts convert plant fibers to cud, HABs are breaking down amino acids, a chemical process that produces ammonia and robs the animals of the amino acids they need to build muscle tissue, according to Flythe, who works at the ARS Forage Animal Production

Research Unit (FAPRU) in Lexington, Ky.

To make up for lost amino acids, cattle growers have to add expensive and inefficient high-protein supplements to their animals' feed.



According to Flythe, hops can reduce HAB populations. Hops, a natural preservative, were originally added to beer to limit bacterial growth.

Flythe put either dried hops flowers or hops extracts in either cultures of pure HAB or a bacterial mix collected from a live cow's rumen. Both the hops flowers and the extracts inhibited HAB growth and ammonia production.

Flythe also collaborated with FAPRU animal scientist Glen Aiken on a study in which hops had a positive effect on the rumen's volatile fatty acid ratios, which are important to ruminant nutrition.

Goats as Targeted Grazers for Blackberry Control

March 29, 2010

Goats are historically used for brush control, but a recent Oregon State University study by Ph.D. candidate Claudia Ingham looked specifically at the effectiveness of high intensity-short duration goat browsing for the control of Himalayan blackberry and English ivy.

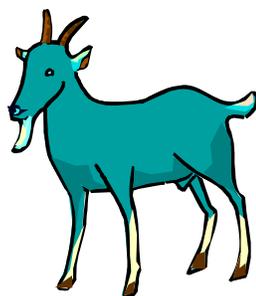
Blackberry control is a common issue for many ranches in both Mendocino and Lake Counties, and so I thought it would be interesting to hear about Claudia's research and results. She compared the effects of goat browsing on blackberry vigor by quantifying the densities of different age class stems, comparing it to mowing alone, and goat browsing followed by mowing over a three-year period.

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Her results showed that total stem density declined, but the primocane density actually increased after all three treatments, which means that the blackberry population was still vigorous. All three treatments, however, resulted in a decline in blackberry cover and a favorable increase in both perennial grass and forb cover.

She could not detect any significant differences between the three treatments, which mean that goat grazing alone controlled the blackberries as well as mowing or grazing plus mowing. Given the fossil fuel costs of mowing, goats as targeted grazers are a better option.



2010 Recommended Animal Handling Guidelines & Audit Guide April 5, 2010

The American Meat Institute (AMI) Foundation has just recently released their 2010 Recommended Animal Handling Guidelines & Audit Guide. The guide, written by Temple Grandin, while focused on humane animal handling at the processing level, still has valuable information for all those involved in the livestock industry. The sections on animal transport, temperature, and handling facilities are especially useful at the ranch level. You may download it from AMI's web site, animalhandling.org, under their guidelines and auditing section. I'd suggest checking out the other information and links on their web site too.

Download file:

<http://www.animalhandling.org/ht/d/sp/i/26752/pid/26752>

Nutrition: Grass-fed vs. Grain-fed Beef April 5, 2010

In the March issue of the Nutrition Journal, researchers from both CSU-Chico and UCCE, have published their findings on the nutritional qualities of grass-fed beef vs. grain-fed beef. To read the entire article go to: <http://www.nutritionj.com/content/9/1/10>. For those that want a quick overview I've provided a copy of their abstract below.

Abstract:

Growing consumer interest in grass-fed beef products has raised a number of questions with regard to the perceived differences in nutritional quality between grass-fed and grain-fed cattle. Research spanning three decades suggests that grass-based diets can significantly improve the fatty acid (FA) composition and antioxidant content of beef, albeit with variable impacts on overall palatability. Grass-based diets have been shown to enhance total conjugated linoleic acid (CLA) (C18:2) isomers, *trans* vaccenic acid (TVA) (C18:1 t11), a precursor to CLA, and omega-3 (n-3) FAs on a g/g fat basis.

While the overall concentration of total SFAs is not different between feeding regimens, grass-finished beef tends toward a higher proportion of cholesterol neutral stearic FA (C18:0), and less cholesterol-elevating SFAs such as myristic (C14:0) and palmitic (C16:0) FAs. Several studies suggest that grass-based diets elevate precursors for Vitamin A and E, as well as cancer fighting antioxidants such as glutathione (GT) and superoxide dismutase (SOD) activity as compared to grain-fed contemporaries. Fat conscious consumers will also prefer the overall lower fat content of a grass-fed beef product. However, consumers should be aware that the differences in FA content will also give grass-fed beef a distinct grass flavor and unique cooking qualities that should be considered when making the transition from grain-fed beef. In addition, the fat from grass-finished beef may have a yellowish appearance from the elevated carotenoid content (precursor to Vitamin A). It is also noted that grain-fed beef consumers may achieve similar intakes of both n-3 and CLA through the consumption of higher fat grain-fed portions.



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UN Admits Flaw in Report On Meat and Climate Change

April 6, 2010

This is an update to my earlier post on "Don't Blame Cows for Climate Change." From that post you'll remember that UCCE Air Quality Specialist, Frank Mitloehner's research into the United Nations' report had shown a discrepancy in their analysis. It's nice to know that when UCCE researchers speak others listen. Read on to see what's happening.

The United Nations (UN) has admitted a report linking livestock to global warming exaggerated the impact of eating meat on climate change. A 2006 study, *Livestock's Long Shadow*, claimed meat production was responsible for 18 percent of greenhouse gas emissions - more than the transport sector.

In *Clearing the Air: Livestock's Contribution to Climate Change*, principle investigator Frank Mitloehner, Ph.D., associate professor and cooperative extension specialist in air quality from the University of California at Davis, said meat and milk production generates less greenhouse gas than most environmentalists claim and that the emissions figures were calculated differently for the meat sector than they were for the transport figures, resulting in an "apples-and-oranges analogy that truly confused the issue."

The meat figure had been reached by adding all greenhouse gas emissions associated with meat production, including fertilizer production, land clearance, methane emissions and vehicle use on farms, whereas the transport figure had only included the burning of fossil fuels.

Attempts to apply these global numbers to the United States are misleading because the vast majority of global greenhouse gas emissions attributed to



livestock production result from deforestation and converting rain forests and other lands to grow crops or pasture. Such changes do not occur in the United States, which has seen an increase in the total acreage of forested land over the last several decades even while total agricultural production has increased.

In 2007, only 2.8 percent of U.S. greenhouse emissions came from animal agriculture, according to the Environmental Protection Agency. This number has remained nearly constant since 1990, which is impressive considering the U.S. increases in meat production of almost 50 percent over the same time period.

"The fact that greenhouse emissions have remained nearly constant while industry production has increased shows that U.S. livestock and meat producers have taken responsible steps to protect the environment, such as improving feed efficiency, implementing better manure management strategies and using cropland more effectively," said J. Patrick Boyle, American Meat Institute president and chief executive officer. "We've accomplished this feat all the while providing the most abundant, safe, diverse and affordable meat supply in the world."

Reprinted in part from meatandpoultry.com

Controlling Medusahead and Barbed Goatgrass by Timing Mowing is Effective

April 13, 2010

Medusahead (*Taeniatherum caput-medusae*) and barbed goatgrass (*Aegilops triuncialis*) are noxious annual weeds that rapidly invade grassland, savannah and woodland ecosystems of the western US. Both are found extensively in Mendocino and Lake Counties with Medusahead being the most prevalent. While livestock will eat the early vegetative stages of both these grasses they are not as palatable as other grasses. Once awns are formed very little consumption takes place and these awns help spread the seed through attachment to the grazing livestock

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and wildlife. Herbicidal control is difficult as most herbicides that attack these pests will also kill the desirable species and is probably not economical. Both of these weeds tend to spread and block out more desirable forages and actually devalue the carrying capacity of the range.

Researchers Jimin Zhang, Tag Demment, Craig Schriefer, Corey Cherr and Emilio Laca at UC Davis sought to develop effective and economical strategies for controlling Medusahead and barbed goatgrass that would not damage more desirable species. In their work they applied precision mechanical defoliation at three intensities (3, 6, and 9 cm stubble height), and nine times (April 15, 19, 25, 28, and May 1, 4, 8, 12, 16, 2007) before Medusahead and barbed goatgrass seeds had reached maturity.

As a result of these mowing treatments, plants did exhibit some regrowth, but Medusahead seed production was practically eliminated by mechanical defoliation to 3 and 6 cm height during the R4 and R5 growth stages. These growth stages are when the awns and anthers, respectively, become visible. Mechanical defoliation at the same ranges of height and growth stage also reduced barbed goatgrass seed production by 95 % or more. Where geography permits, the use of temporally precise mowing is an effective tool to control these rangeland weeds.

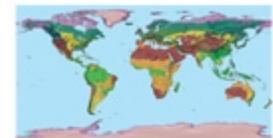


Research on the Role of Grazing Lands in Greenhouse Emissions and Carbon Sequestration

April 13, 2010

The journal *Rangeland Ecology and Management* has published a special issue entitled *Global Grazing Lands and Greenhouse Gas Fluxes*. This issue includes contributions from an international group of rangeland ecologists, economists and social scientists, providing a scientific basis for a quantitative understanding of the role of grazing lands in greenhouse gas fluxes. Several papers synthesize the existing literature and present new information to advance the knowledge on the role of grazing lands in carbon-credit markets, as well as promoting guidelines to use these credits for rangeland conservation and poverty alleviation projects. ([To access abstracts or purchase publication click here](#) or go to <http://www.srmjournals.org/toc/rama/63/1>)

Rangeland Ecology & Management



ASI Releases Initial Results from Producer Survey

April 15, 2010

The American Sheep Industry Association (ASI) has begun releasing some of the results from their producer survey. I'm posting some of the information below from their news service. I've included the general national information and only District VIII (includes CA, OR and WA) info from their web site. To read more about other districts go to: http://sheepindustrynews.org/?page=site/text&nav_id=b006223d553381cdcd63f1384c722dff&archive_id=

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ASI Survey Results

Series 1: Profile of the Average Sheep Producer in each ASI Region

By **AMY TRINIDAD**

Sheep Industry News Editor

(April 1, 2010) In an effort to get a better understanding of today's sheep producers, the American Sheep Industry Association (ASI) administered a survey this past winter...and the results are in. One of the key reasons for the survey was to assist the Re-build the Sheep Inventory Committee in its ongoing national effort to strengthen U.S. sheep production. The information will be published in a series of articles in the Sheep Industry News, the first profiling the average sheep producer in each of the eight different ASI regions.

Following are some summary data:

1. The structure of the sheep industry at the producer level has changed. The portion of producers with one to 100 head of sheep has increased from 20 years ago. According to a survey conducted by ASI in 1989, this sector comprised 59 percent of the industry, today, it is 64 percent of the industry. And the next largest sector, at 24 percent, is the 101 to 500 head.
2. Nearly 60 percent of the survey respondents are 51 years and older, similar to 20 years ago.
3. Sixty-four percent of the producers reported being commercial producers, 22 percent are seedstock, 10 percent are club lamb producers, 4 percent are lamb feeders and 0.4 percent are dairies.
4. Fifty-three percent of producers' total agriculture operation revenue is from sheep.
5. A majority – 75 percent – of the sheep operations have family members working as part of the operation; however, 65 percent of the producers surveyed reported family member do not plan to take over the sheep operation when the older generation retires.
6. Regarding lambing, the typical percent of lambs

born per ewe exposed averages 159 percent, the typical percentage of lambs weaned per ewe exposed is 146 percent and the average weight per lamb weaned is 69 pounds.

7. Of those producers who sell slaughter lambs, 54 percent report they sell them at livestock auctions, 43 percent sell lambs live to consumers and 29 percent sell meat to consumers.

8. As for wool sales, 35 percent sell their wool direct to a buyer, 29 percent sell to a woolpool and 25 percent sell through a warehouse. Among the other responses for how producers sell their wool, 28 percent reported they do not have wool to sell.

9. The average annual ewe replacement rate is 18 percent nationally.

10. More producers are utilizing the services of a veterinarian for the sheep operation. In 1989, that portion of the industry was 30 percent, today, it is 72 percent.

11. More than 70 breeds and crosses were identified in the survey. Meat breeds are the most popular but hair sheep ranked number nine and 10 in the top 10 breeds. The top 10 breeds are Suffolk, Rambouillet, Dorset, Targhee, Polypay, Suffolk crosses, Hampshire, Columbia, Katahdin and Dorper.

Region VIII – Calif., Ore. and Wash.

Of all of the respondents of the survey, 13 percent are from this region with 65 percent of the producers raising a flock of sheep less than 100 head, 23 percent with a flock between 100 and 500 and 8 percent raising a flock between 1,000 and 5,000 head. Sixty percent the sheep producers are between the ages of 51 and 70 and another 17 percent between the ages of 41 and 50. In this region, 74 percent of the producers have family members as part of the sheep operation; however, only 32 percent say family members plan to take over the sheep operation when they retire. Sixty-six percent of the producers in this region consider themselves to be commercial sheep producers, another 18 percent are seedstock

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ASI



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producers and 12 percent are club lamb producers. Producers in this region say they get 52 percent of their total agriculture operation revenue from sheep.

Regarding lambing, producers in this region average 154 percent of lambs born per ewe exposed and wean 146 percent of their lambs per ewe exposed. The average weaning weight is 82 pounds. Half of the producers say they place their own lambs on feed before slaughter. Of those who sell slaughter lambs, 24 percent sell them live to a consumer, 21 percent sell meat to a consumer and 18 percent sell lambs at a livestock auction. Of those who sell wool, 37 percent of these producers sell it directly to a buyer and another 34 percent sell it through a wool pool. Their average annual ewe replacement rate is 14 percent, the lowest percentage rate of all the regions, and 68 percent use a veterinarian for their sheep operation.

Which Meat is Consumed By 63% of the World's Population? April 22, 2010

I'll bet a lot of you guessed chicken or pork. Some of you probably thought beef. Surprise! While in the United States, we tend to consume chicken as our white meat choice and beef as our red meat choice 63% of the world's population consumes goat meat. Interestingly, more and more goat meat is being consumed in the United States and not just as an ethnic dish due to the growing ethnic population. The health conscious consumer is also looking at the benefits of incorporating either Cabrito (a delicacy meat from goats that are harvested between 1 to 3 months of age and weigh less than 50 pounds) or Chevon (goats that are harvested between 6 to 9 months of age and weigh between 50 and 75 pounds). Older goat meat is also consumed but usually as sausage or in chili.

Mendocino and Lake Livestock producers, especially those who want to sell local, might want to consider adding goats to their mix of cattle and/or sheep. I know some of you are already ahead of the curve (see our goat producer directory on our web site, http://ucanr.org/livestock_producer_directories).

Multi-species grazing on our rangelands not only provides economic diversity for the ranch but utilizes our rangeland forages better than single-species grazing. But let's get back to that health-conscious consumer and why demand for goat meat is growing.

The table below shows the nutrient comparison of goat meat to that of traditionally raised chicken, beef, pork, and lamb. I suspect that these values are based on grain finishing as we already know that grass finishing will result in slightly different values. They may also be affected by the potential younger age of Chevon.

Nutrient	Goat	Chicken	Beef	Pork	Lamb
Calories	122	162	179	180	175
Fat (g)	2.6	6.3	7.9	8.2	8.1
Saturated Fat (g)	0.79	1.7	3.0	2.9	2.9
Protein (g)	23	25	25	25	24
Cholesterol (mg)	63.8	76.0	73.1	73.1	78.2

¹ Per 3 oz. Of cooked meat

² USDA Nutrient Database for Standard Reference, Release 14 (2001)

You can see from the above that goat meat is lower in calories, total fat, saturated fat, and cholesterol than traditional meats. Less saturated fat and less cholesterol mean healthier red meat for the health-conscious consumer. Additionally, goat meat has higher levels of iron (3.2mg) when compared to a similar serving size of beef (2.9 mg), pork (2.7 mg), lamb (1.4 mg), and chicken (1.5 mg). Comparatively, goat meat also contains higher potassium content with lower sodium levels. Regarding essential amino acid composition, goat meat closely resembles that of beef and lamb.

With these benefits it's clear why the consumer is looking at different meats like goat. Ideally as grass-farmers, it makes sense to diversify for the health of our rangeland and for the economic well-being of the ranch. Consider adding goats to your operation.



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website: <http://cemendocino.ucdavis.edu>

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