A GUIDE FOR SHEEP AND FARM LIFE

THE SHEPHERD

October, 2012

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Cover Photo:

A Targhee/ Finn cross range ewe belonging to the Sims Sheep Company LLC of southwest Wyoming. Photo courtesy Lacee Sims, Leather-N-Lace Photography of Evanston, Wyoming. www.Leather-N-LacePhotography.com.

PRICE POINTS AND PERSISTENCE

How do you convert $4 diesel (*) and $8 corn into lamb on a plate 1) at a price which consumers will actually pay (maybe even more than once) and 2) at a price which will allow producers to keep on keeping on, showing up for work, let alone enJOYing it, (maybe even incentivizing future generations to show up for such work)? "Very carefully," yes, but it's not a joke, is it?

Two real world, specific, proven genetic solutions to this conundrum are currently available, and there's still time for many producers to employ them this year.

Siremax composite terminal sires are the result of 20 years of intentional, persistent, unwavering design for lean gain. Siremax sires produce lambs which are leaner (translate: gain cheaper) and better muscled (translate: higher yielding). Their superiority in feed conversion efficiency and lean gain (closely trimmed, boneless retail product per day of age) has been independently verified by multiple central ram tests. In addition to producing less demand-killing plate waste, as a bonus, these composite rams live longer and sire lambs which are more vigorous from birth to pay day.

Converter maternal composites are the result of 40 years of intentional, persistent, unwavering design for fitness, fertility and longevity. Converter rams produce replacement females which are longer-lived, require less maintenance energy and less labor: it's about time, which is worth way more than $8 corn.

Less fat (waste of resources) and less time required: design determines destiny. Are your ram selection decisions geared toward increasing producer persistence and industry sustainability?

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* Do you know why diesel is more expensive than (more refined) gas in this country, anyway? Seems that, in addition to investors speculating on ever increasing domestic demand for heating oil, U.S. refiners export U.S. diesel fuel to India and China, increasing demand and, therefore, price to diesel-consumers in this country.

The View From Here

It's time for fall work, so many producers across the nation are busy sorting their herds and shipping to market, as well as making sure that there is adequate stored feed for the herds that will be retained through the winter.

We'll leave you this month with a few images from recent days here in western Wyoming. The sight of a sheep herd on the move is always picturesque, but the background of these images is muted by smoke from the wildfires still burning in our neighboring mountain ranges.

May your fall work be productive!

The Shepherd photo.

The Shepherd photo.

Coming Soon

October

6 70TH Annual Craig Ram Sale. Craig, CO. Contact Nick Maneotis (970) 629-2719.

7-11 National Goat Expo. Des Moines, IA.

10 Utah Ram Sale, Spanish Fork, UT.

11-14 Trailing of the Sheep Festival. Ketchum & Hailey, ID. Contact: (208) 720-0585; info@trailingofthesheep.org.

19-20 New York Sheep & Wool Festival. Rhinebeck, NY.

20 Meat Sheep Alliance of Florida Fall Conference. Ocala, FL. Contact: http://msasheep.blogspot.com.

27 Maine Sheep Breeders Association Annual Meeting. Fairfield, ME. Contact: Richard Brzozowski (207) 926-3310 or Richard.brzozowski@maine.edu.

November

3 Vermont Sheep and Goat Association Annual Meeting. Montpelier, VT. Contact: Karl Ross (802) 259-3390.

3-16 North American International Livestock Expo. Louisville, KY. (Sheep shows Nov. 9-16).

9-10 Hawaii Sheep and Goat Association Annual Meeting. Big Island, Hawaii. Contact: Jan Dean (808) 775-0401 or jan.hasga@me.com.

9-11 Utah, Idaho and Wyoming Wool Growers Association Annual Meeting. Jackson Hole, WY.

17-20 North Dakota Sheep Shearing and Wool Classing schools. Contact: Christopher Schauer (701) 567-4323 or christopher.schauer@ndsu.edu.

30 Montana Wool Growers Association Annual Meeting. Billings, MT. Contact: Brent Roeder (406) 442-1330, or mwga@mtsheep.org.

December

1 Tennessee Sheep Producers Association Annual Meeting. Lebanon, TN. Contact: Mark Powell (615) 237-3894 or mpowell@wilsoncoop.com.

1 Minnesota Lamb and Wool Producers Association Annual Meeting, Morton, MN. Contact: Don Adelman (952) 466-2451.

9-12 Fifth National Conference on Grazing Lands. Orlando, FL. Contact: Monti Golla (979) 777-9779 or www.glci.org.

USDA NEWS

ALB appointments announced

Agriculture Secretary Tom Vilsack has announced four appointments to the 2013 Lamb Promotion, Research, and Information Board. Each appointee will serve three year terms beginning immediately.

"These appointees represent a cross section of the lamb industry and I am confident that the industry will be well served by them," said Vilsack.

The newly appointed board member is Angelo Theos, Meeker, Colorado, representing producers. Reappointed to the board are: Betty Sampsel, Stanford, Montana, representing producers; Daniel Lippert, Blomkest, Minnesota, representing feeders; and William Anderson, Brownsville, Oregon, representing first handlers.

The board is composed of six producers, three feeders, one seed stock producer, three first-handlers, and a member of the general public. The Secretary of Agriculture appoints approximately one-third of all board members each year.

Established under the Commodity Promotion, Research, and Information Act of 1996 and the Lamb Promotion, Research, and Information Order, the board is financed by a mandatory assessment of one-half cent per pound on ovine animals of any age, including ewes and rams, sold by producers, seedstock producers, feeders and exporters. Also, an assessment of thirty cents per head must be paid by first-handlers. Assessments began on July 1, 2002.

Research and promotion programs are industry-funded, authorized by Congress, and date back to 1966, when Congress passed the Cotton Research and Promotion Act. Since then, Congress has authorized the establishment of 20 research and promotion boards. They empower farmers and ranchers to leverage their own resources to develop new markets, strengthen existing markets, and conduct important research and promotion activities. AMS provides oversight, paid for by industry assessments, which ensures fiscal responsibility, program efficiency and fair treatment of participating stakeholders.

NSIIC directors announced

Agriculture Secretary Tom Vilsack announced appointments to the National Sheep Industry Improvement Center Board of Directors. The Center was established to improve the competitiveness of the U.S. sheep and goat industries.

"The Sheep Center works to strengthen and enhance the production and marketing of sheep and goat products in the Unites States through infrastructure development, business development, production, resource development, and market and environmental research," said Vilsack. "These appointees represent different facets of the sheep and goat industry, and I am confident that the industries will be well served by them."

The reappointed board members include: Janet B. Mawhinney, Waynesburg, Pa., representing sheep and goat producers and Glen D. Fisher, Sonora, Texas, representing expertise in finance and management. Both appointees will serve 3-year terms.

The board is composed of seven voting members and two non-voting members. Voting members of the board include four members who are active producers of sheep or goats in the United States, two members that have expertise in finance and management, and one member that has expertise in lamb, wool, goat or goat product marketing. Non-voting members include Ed Avalos, USDA Under Secretary of Agriculture for Marketing and Regulatory Programs and Cathy Woteki, USDA Under Secretary for Research, Education, and Economics.

Emergency Grazing Extension

Agriculture Secretary Tom Vilsack announced a two-month extension for emergency grazing on Conservation Reserve Program acres.

To assist producers, USDA is permitting farmers and ranchers in drought stricken states that have been approved for emergency grazing to extend grazing on CRP land through November 30, 2012, without incurring an additional CRP rental payment reduction. The period normally allowed for emergency grazing lasts through September 30. The extension applies to general CRP practices and producers must submit a request to their Farm Service Agency county office indicating the acreage to be grazed. USDA's continuing efforts to add feed to the marketplace benefits all livestock producers, including dairy, during this drought. Expanded haying and grazing on CRP acres, along with usage of cover crops as outlined last week by the Secretary, has begun providing much needed feed to benefit all livestock, including dairy. ■

Ewe feeding importance increases during breeding and pregnancy

As sheep producers across the country are preparing for the breeding season, Montana State University Extension Sheep Specialist Rodney Kott, Montana State University Lisa Surber and North Dakota State University Sheep Extension Specialist Reid Redden looked at feeding ewes during breeding and pregnancy for optimal production.

"The goal of any nutrition program is to maximize the use of our forages," said Kott in the Aug. 29 webinar, sponsored by the American Sheep Industry and the National Sheep Industry Improvement Center. "The first thing in any nutrition program is that we have to follow the nutrient requirement of the animal."

Optimum feeding strategies

Redden began by identifying important considerations for feeding ewes and marked energy and protein as the main requirements.

"One of the first things we realize is that sheep do not require any one specific feed," Redden commented. "It is the nutrients within the feed that are most important."

He further encouraged producers to consider feeding on a 12-month scale.

"For a ewe in maintenance, her dry matter intake is less than three pounds, and right before breeding we need to increase dry matter by 45 percent," Redden explained. "Right after the breeding period, nutrient requirements drop to just about 10 percent above maintenance."

Requirements remain steady through early and mid-gestation, increase to 45 percent above maintenance again at late gestation for a single lamb and 50 percent above maintenance for twins.

"We see a drastic increase for requirements at lactation," he added. "Ewes require 95 percent more feed – almost twice what she needs to maintain – for a singe, and if she has a twin, they require about 125 percent above maintenance."

Total digestible nutrients (TDN) and crude protein requirements follow similar trends, with increases just prior to breeding, at late gestation and during lactation.

Percentage versus amounts

"Another key point on nutrient requirements is how much crude protein you need," added Redden. "Animals require amounts, not percentages, of nutrients, and feed is often expressed as a percentage."

For example, Redden says if a lamb needs 0.5 pounds of crude protein, that nutrient could be gained from eating two pounds of a feed source with 25 percent crude protein, three pounds of a 17 percent source or four pounds of a food source that is 12 percent crude protein.

"The only percentage we need to focus on is the requirements of the rumen microbes," he noted. "They need a certain percentage – between six and eight percent crude protein – to maintain normal function."

He also mentioned, however, that optimum feeding strategies may not always involved meeting the exact nutrient requirements of each ewe at each stage.

"In lactation, for example, we can rarely get the ewe to eat enough," Redden explained. "We can use the ewe's body resources at that time of negative energy balance."

"The question is, how much can we afford to lose?" he asked.

Body condition scoring

In order to determine ewe body composition or assess nutrient status, Surber marked body condition scoring as an excellent tool.

"We'd like our ewes to be at a body condition score of three," she said. "It is pretty likely, and maybe even economical, that during certain times of the year she will fall below that body condition score."

Body condition score is an estimation of the muscle and fat development on an animal, according to Surber, and the scores range between a one, for extremely thin or emaciated sheep, to five, or obese.

"We want to focus on the scores two and three, because that is where you want to see the majority of your sheep," she noted. "As a trained producer, you should be able to identify body condition score."

Surber noted however, that while producers are learning to assess body condition score, it is important to actually feel the sheep.

"In the wool, it makes it more difficult to assess body condition until you get your hands on them," she said. "The differences in wooled sheep are more subtle."

Assessment of body condition should be done four to six weeks before breeding, according to Surber, who says that at that point, it is still possible to improve or change their nutrient status.

Flushing

Kott noted that if ewes are in a body condition score of between two and 3.5, a flushing effect can be seen and can improve breeding results.

"The true flushing response is something we don't really understand, but it is real," Kott said. "It is an ovulation rate increase and a response to an increase in nutrition."

While the response is dependent on a number of things, Kott noted that a short-term increase in nutrition can increase ovulation. Mature ewes respond better, but he still recommends that producers flush all ewes in the body condition score range.

"There has been a lot of research. You can flush with protein or energy, and in some cases one-third or one-quarter pound of grains will get the job done," Kott said.

Early pregnancy

After ewes are bred, Redden noted that nutrition in the early stages of gestation is very important, largely because placental growth occurs during that stge.

"The first fifty days of pregnancy are very important," said Redden. "We have a lot of things going on that nutrition can have a large impact on."

Of primary concern, he said that increasing conception rate is very important, and feeding the ewes optimally can help with increasing implantation and decreasing abortion rates.

"Overfeeding and underfeeding can have detrimental effects, and we might lose more lambs than we'd like," Redden added.

Though in the first trimester producers need to feed their ewes a bit more, he cautioned against overfeeding.

"One thing that was clear in research is that overfeeding and underfeeding both alter blood flow to the reproductive track, which reduces progesterone," Redden explained. "Reduced progesterone will increase embryonic loss."

In the first 50 days of pregnancy, he further explained that the majority of placental development occurs, and feeding influences placental development. Both over and underfeeding causes the placenta to be smaller. The smaller placentas do not allow the lamb to grow as large, resulting in neonatal losses from light lambs.

"We need to feed the ewes what they need when they need it," Redden added. "Feed the ewes what they need, and that's it."

Saige Albert is managing editor of the Wyoming Livestock Roundup and can be reached at saige@wylr.net. ■

BCS determines ewe condition

Montana State University research scientist Lisa Surber said, "Body condition scoring is an excellent way to determine body composition or assess nutrient status."

Body condition scores range from one to five and describe sheep form very thin to obese.

"A one is a very thin ewe with no fat cover. The loin muscle is severely underdeveloped, her spine feels sharp, and you should be able to fit your hand underneath the transverse process," said Surber.

On the opposite end of the spectrum, ewes with a body condition score of five are soft to the touch.

Surber noted, "On a five, you won't feel anything but fat."

Pre-Breeding Management of Rams and Ewes

David C. Van Metre, DVM, DACVIM
Extension Veterinarian, Colorado State University

The pre-breeding period is defined as the 8-10 week period prior to the first day that rams are turned out with the ewes. Although it is traditionally a relatively quiet period for the sheep producer, the pre-breeding period involves multiple physiologic processes in the ram and ewe that can significantly impact fertility during breeding season, and therefore can subsequently impact the size and uniformity of the lamb flock. During this period of time, the sheep producer can conduct a few fairly simple management practices to ensure that the ram and ewe flock are in optimal physical condition for breeding.

Pre-Breeding Evaluation of the Ram Flock

Creation of sperm in rams requires approximately 7 weeks to complete; sperm is then stored in the epididymis, an organ adjacent to the testis. In other words, on the first day of the breeding season, the ram will be utilizing semen that was produced 7 or more weeks previously. Late summer heat can significantly impair ram fertility because spermatogenesis (the creation of sperm) occurs in the testes at a temperature that is slightly below core body temperature. Rams that are excessively conditioned are prone to heat stress, as are rams in full fleece. Shearing rams at this time should be considered to limit heat stress. Careful shearing of the scrotal wool should be performed for breeds and individuals with greater scrotal wool cover. For flocks in colder climates with mid-to late-fall breeding schedules, ram shearing should be timed such that 2-4 cm of fleece has grown by the time breeding begins.

Heat stress can be further limited by provision of adequate shade – producers should watch the rams frequently during a summer day to ensure that the rams have shade available as the sun moves across the sky. Sand bedding in shaded areas allows for greater body heat loss when the rams lie down; the scrotum is kept cool as well. Salt and water should be readily available near the areas where the rams seek shade during the hottest periods of the day. In flocks with significant external parasite or biting insect problems, reduction of these burdens through insecticide application to the animals and / or the environment may limit fertility impairment from scrotal dermatitis (inflammation of the scrotal skin). The heat associated with inflammation of the scrotal skin has been shown to impair ram fertility.

In certain locales, infection with bluetongue virus during the late summer or early fall can cause significant morbidity and reduction in fertility in the ram flock. This viral disease is spread by gnats of the genus Culicoides; the disease appears to be more prevalent in flocks located near river valleys and low-lying wetlands. Many sheep may acquire the virus, develop antibodies to clear the infection, and recover without consequence. However, if a large number of rams in a flock are naïve (not immune) to the virus, infection can cause high fever and severe systemic disease that can render rams temporarily subfertile or infertile. Vaccination of sheep against bluetongue is not approved in most states. Producers in areas where bluetongue infection is particularly problematic may have to delay breeding until well after the first frost, when the Culicoides gnat is no longer biting.

Fever and debilitation from other common infectious diseases, such as pneumonia, can also impair subsequent fertility. Pneumonia may develop during summertime transport, showing, sales, or other stressful activities. Owners should carefully plan summer show and transport activities so as to limit the potential impact of these activities on ram fertility when the breeding season arrives.

Since weight loss is expected during the breeding season, the target BCS for rams at the onset of the breeding season is approximately 3.5 on a scale of 1 (emaciated) to 5 (obese). To limit the risk of development of ulcerative posthitis

The Shepherd **photo.**

(pizzle rot), thin rams should not be fed high-protein complete feeds or allowed unlimited access to high-protein forage such as alfalfa hay. If under-conditioned rams are to be fed increased levels of energy, booster immunization against enterotoxemia is recommended.

Annual breeding soundness examination and serologic testing for infection with Brucella ovis have been repeatedly proven to improve flock fertility. Breeding soundness examination is described in a separate fact sheet produced by Colorado State University Veterinary Extension. The ram population should be measured against ewe numbers, with adequate consideration of ram age, breed characteristics, and topography of the breeding pastures. A ram-to-ewe ratio of 1:50 (2% of the ewe population) is usually appropriate for mature rams on flat pasture or rangeland. A mature, experienced, and BSE-proven ram can successfully breed as many as 100 ewes, particularly if the ewes are fenced in to limit their capacity to disperse. A 1:25 ram: ewe ratio is recommended if ram lambs are to be used. Greater ram numbers may be needed for synchronized breeding programs.

Pre-Breeding Evaluation of the Ewe Flock

Culling of ewes prior to breeding should be based upon body condition score (BCS), udder health, dentition, lameness or other musculoskeletal problems, and in some flocks, results of serologic testing for eradicable diseases (e.g. ovine progressive pneumonia, Johne's disease). The body condition scores for the entire ewe flock should be recorded, as this data can be used to adjust feeding practices to optimize body condition at breeding. In addition, trends in flock BCS data accumulated over subsequent years can be used to adjust summer grazing or feeding practices. The ewe cull should precede any immunization or anthelmintic treatment administered to the ewe flock, as administration of these products to cull ewes represents a lost treatment expense for the producer and might create violative residues if the ewes are promptly taken to slaughter. If the owner does not elect to maintain a closed flock, new introductions into the ewe flock should take place at least 8 weeks prior to the breeding season, at a time of year when gestation is not ongoing in the ewe flock. Further, immunization for abortion pathogens (Campylobacter and Chlamydophila) and/or tetracycline feeding during gestation may warrant consideration.

Thin ewes, including ewes selected for culling on the basis of low body condition, can be targeted for specific disease testing, using serology (OPP, Johne's Disease), necropsy, or slaughter checks. As an initial step in documenting the presence of Johne's Disease in the flock, serologic tests can be applied to the thinnest 20% of ewes and rams, as these animals are more likely to test positive if their thin condition is truly due to this disease. Fecal flotation is a test that your veterinarian can perform for determination of internal parasite burden. Individual fecal samples should be taken from at least 10 adult ewes and an equal number of ewe lambs; feces are removed from the rectum and placed into a labeled ziplock bag. Samples should be kept cool and transported promptly to your veterinary clinic or diagnostic laboratory. Ewe fertility has been shown to be responsive to pre-breeding anthelmintic (deworming) treatment in flocks where internal parasite burdens are problematic.

Flushing is a practice wherein the amount of feed energy is increased to ewes, beginning 3-6 weeks prior to the breeding season. As a result of the increasing plane of nutrition, ewes will gain weight and tend to ovulate more eggs at each estrus period during the breeding season. This effect of flushing tends to be most pronounced in thin ewes, while ewes in good body condition do not respond much to flushing. Therefore, segregation of the ewe flock into a thin group (to be flushed) and adequate body condition group (no flushing) is sensible. Most medium-sized breeds of ewes can be flushed by feeding 0.5-1.0 pounds of grain per ewe per day; it is important to begin slowly (0.25 pounds/ewe/day) and gradually increase the amount of grain fed to the target level over a 7-10 day period. The duration of flushing needs to be at least 2 weeks long; if ewes are very thin, as many as 6 weeks of flushing may be needed. When possible, continuation of flushing for 2-4 weeks into the breeding season may help maintain pregnancy in previously thin ewes. ■

***The Shepherd* photo.**

"THE PROCESS of ammoniating straw has been around a while and has been especially useful by resulting in an enhanced forage quality."

Innovation at the feed bunk

Some timely rains here in Texas are promoting some late season grass regrowth that will be helpful as breeding season approaches. Although this is neither the first dry spell nor the last, I wonder how producers throughout the nation are adapting to the feed shortages created by our dry summer. Going into the fall months, I imagine many are making the tough decisions associated with selecting where to down size their flocks, while others may be writing painful checks for $200/ ton hay. As mentioned last month some of these "lean year" feeding strategies may be offered too late to alleviate the feed bill this year, nonetheless it is never too late to look for supplemental feed alternatives that can be fed now, to save feed for later.

The classification "alternative feeds" in a drought year is a bit of a misnomer given the fact that these feeds are being sought by numerous producers. Consequently, alternative feeds become scarce, and the prices for these alternative feeds rise as a result of buying pressure from other animal ag-industries. Uncommon and underutilized feeds on the other hand present unique feed alternatives for sheep producers, especially for small and mid-sized flocks. While some of the following feed options may not be entirely applicable to all regions and operational sizes, hopefully they will get you thinking about ways to reduce the feed bill this winter.

Bakery Waste

Marie Antoinette famously said, "Let them eat cake." The statement didn't work out too well for her in her time, but when applied to our current drought she may have been right. Since energy might be a scarce and costly nutrient this year one may look into feeding bakery waste as an energy source. Dried bakery byproduct generally consists of bread, cookies, cake, crackers, flours and doughs. Similar in energy to corn, bakery waste packs a lot of punch in terms of energy, with 8% to 10% crude protein. The low amount of fiber contained in most bakery waste allows it to be easily digested, making it an effective grain substitute. However, it is important to monitor the fat as it can be 10% to 15%, and if fed excessively can negatively affect rumen fermentation. Limited research with lamb finishing diets shows up to 30% of the diet can contain bakery waste without negatively effecting performance. Bakery waste may also be a formidable supplement for ewes in peak lactation, with research suggesting that it can also be fed up to 20% of the diet without effecting performance. At $295-$335/ton for bakery waste compared $321/ton for $9/bushel corn bakery waste may not look too cost effective, however in certain instances the bargain is found when buying directly from the source in smaller amounts. I know of an owner of a small flock who picks up byproduct from a bakery outlet twice a week on the way home from work. Granted this method only can supply 150 to 200lbs of feed per week, but for approximately $12/week she is able to supplement her flock with a low cost energy dense feed. Keep in mind that when purchasing bakery waste in larger amounts, the commodity broker usually provides a 90% dry matter product, whereas if purchasing direct from the bakery a range of 60- 90% dry matter can be expected. For those producers interested in securing a steady supply of bakery waste from the smaller outlets an effective strategy has been to leave a collection container at the bakery, which provides a waste management incentive for the bakery.

Cannery Waste

If you are in the central valley of California or anywhere that grows and markets large amounts of fresh vegetables, chances are you may have access to cull vegetables or cannery waste. One advantage to feeding cull vegetables is it generally only costs you the transportation expenses in getting it to your farm. On the flipside, some vegetable waste is hard to efficiently utilize due to the high moisture content, which can lead to spoilage and potential problems with mycotoxins. As with any feedstuff, nutrients need to be compared on a dry matter basis. Paying attention to dry matter content is especially important when feeding cull vegetables or vegetable waste, as to ensure animals can consume enough feed to ensure adequate nutrients are consumed.

A second consideration is to pay attention to the mineral content of the vegetable waste. Peas, beans, pumpkins and tomatoes tend to have higher levels of phosphorus that may require tweaking your mineral premix. A friend in Oregon feeds green bean cannery waste to his ewes during the late summer grass shortage, and has consistently found that removing the phosphorus from his mineral pre-mix is the key to success when feeding cannery waste. If a steady supply of cull vegetable or cannery waste is available, it is well worth the cost of a feed analysis to determine the mineral profile of the feed. Research and general experience feeding cull vegetables and cannery waste is limited, therefore it

"ONE ADVANTAGE to feeding cull vegetables is it generally only costs you the transportation expenses in getting it to your farm."

"The ability to adapt and innovate even in driest and disappointing of years, such as 2012, is what separates the good sheep operations from the great sheep operations."

would be beneficial to consult with your animal science department and analytical feed lab to make sure a feedstuff is safe.

Ammoniating Straw

Turn a low quality straw into nutritious forage sounds too good to be true. But it is possible. The process of ammoniating straw has been around a while and has been especially useful by resulting in an enhanced forage quality. In short, the process of ammoniating straw breaks down lignin-hemicellulose bonds, thus reducing the concentration of neutral detergent fiber (NDF) in the straw. The result is an increase in digestibility by 10% to 20% and an increase crude protein by approximately 8%. This procedure can be complicated and more importantly dangerous if the producer is not well prepared.

The process begins with covering a stack with 6 mil black plastic, preferably on concrete or plastic as some of the anhydrous ammonia (NH_3)can seep into the ground. Generally with round bales stacking 3 high is recommended. A similar size stack of square bales can be effectively ammoniated as well. Once the straw is stacked it is important to cover the entire stack with the black plastic. The best way to do this is to place the top plastic over the bottom plastic and roll the two together, then cover the roll with soil or gravel. Sealing the stack with the plastic is easier said than done, but is nonetheless necessary to ensure effective ammoniation. When inserting the anhydrous pipe inside the covered stack, make sure that a good seal is made to avoid losing any NH_3. A de-coupler may be handy when disconnecting the pipe from the tank. If ammoniating in less than 60° temperatures keep the stack covered 4 to 8 weeks, whereas greater than 60° requires the stack stay sealed 2 weeks. Keeping the stack covered until ready to feed is recommended since ammoniated straw is more susceptible to weathering. Ammoniation of higher quality grass hays, such as orchard grass, fescue, small grains, forage sorghums or sudans is not reccomended. Keep fresh water on hand to rinse off any NH3 contact with the skin. Of course, remember to wear protective clothing and safety eye wear, and finally work upwind when dispensing the anhydrous ammonia.

How much NH_3 gas is required and how much does it cost? Research conducted suggests that 60 pounds of NH_3 per ton of feed is required to effectively ammoniate the straw; however research in Kansas has suggested this number can be reduced to 30 pounds of NH_3 per ton of feed for those experienced with the process. Given today's ammonia prices one can expect added costs of $27 to $40 to ammoniate straw. This would include the anhydrous ammonia, plastic, tank rental and miscellaneous costs. With wheat straw selling for $50 to $70/ton plus the cost of ammoniating straw, one should expect to have a total of $80 to $120 in ammoniated straw. At times, this process can be more work than it is worth but given the shortage of hay this year it may be worth looking into. Ammoniated straw is nutritionally comparable to low-medium quality grass hay so comparing the price of these two forages will allow you to make a ball-park comparison when pricing the two options.

"The low amount of fiber contained in most bakery waste allows it to be easily digested, making it an effective grain substitute."

Innovation in the Sheep Industry

I am a man with a singular passion. I love agriculture and especially the sheep business. And when I think of our driest year on record and its future impact on food prices and agricultural policy in general, I can't help but think about the sheep industry. Where does it fit in the future of U.S. agriculture? The historical statistics point to continued decline of sheep numbers and demand for lamb, but I am hopeful that the industry will reposition itself and thrive once again. The ability to adapt and innovate even in driest and disappointing of years, such as 2012, is what separates the good sheep operations from the great sheep operations. It is instructive to look to how our fore-bearers in the sheep business confronted the challenges of their time. I found some food for thought in the "Counting Sheep: From Open Range to Agribusiness on the Columbia Plateau" by Alexander Campbell McGregor, a book which details the lives of the McGregor family of Eastern Washington. The McGregors revolutionized what is modern day agriculture in the Pacific Northwest, but first and foremost were sheep men. It is refreshing to read that the challenges faced sixty years ago are not an entirely different spectrum than that which we face today. Rising costs of production, labor shortages, and decreasing demand of our product, to name a few, were just as real in the 1950s as they are today. William McGregor's advice for the sheep industry in 1957 holds a lot of truth for the ills of our time. He said: "In the long run, however, the range sheep business will have to look to technological improvements to keep the cost of production from squeezing it out of existence. I am fairly optimistic about this … There is a great deal of technical knowledge which is not being applied. Further, there has been relatively little technical investigation of the problems of the sheep industry. I hope that such investigations may prove as rewarding as they have in other branches of agriculture."

As active members of the sheep industry it is our duty to seek technical knowledge and actively innovate. This season will be challenging, but we can make it out just fine … maybe even better than before. Good luck and here's to your feed-related innovations at the ranch level saving you money in feeding your sheep this fall. ■

Food Security in the U.S.

By the USDA Economic Research Service

Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. But a minority of American households experience food insecurity at times during the year, meaning that their access to adequate food is limited by a lack of money and other resources. Food and nutrition assistance programs of the U.S. Department of Agriculture (USDA) increase food security by providing low-income households access to food, a healthful diet, and nutrition education.

The percentage of U.S. households that were food insecure remained essentially unchanged from2010 to 2011, while the percentage with food insecurity in the severe range—described as very low food security—increased.

• In 2011, 85.1 percent of U.S. households were food secure throughout the year. The remaining 14.9 percent (17.9 million households) were food insecure. Food-insecure households (those with low and very low food security) had difficulty at some time during the year providing enough food for all their members due to a lack of resources. The change from the 2010 estimate (14.5 percent) was not statistically significant, meaning that the difference may be due to sampling variation.

• In 2011, 5.7 percent of U.S. households (6.8 million households and one-third of all food-insecure households) had very low food security. In these households, the food intake of some household members was reduced and normal eating patterns were disrupted at times during the year due to limited resources. The prevalence of very low food security returned to the level observed in 2008 and 2009, a statistically significant increase from the 5.4-percent level of 2010.

Increases in the prevalence of very low food security were greatest for women living alone, Black households, and households with annual incomes below 185 percent of the poverty line.

• Children were food insecure at times during the year in 10.0 percent of households with children (3.9 million households), essentially unchanged from 9.8 percent in 2010. These households were unable at times during the year to provide adequate, nutritious food for their children.

• While children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security, both children and adults experienced instances of very low food security in 1.0 percent of households with children (374,000 households) in 2011, unchanged from 2010.

• For households with incomes near or below the Federal poverty line, households with children headed by single women or single men, and Black and Hispanic households, rates of food insecurity were substantially higher than the national average. Food insecurity was more common in large cities and rural areas than in suburban areas and other outlying areas around large cities.

• Typically, households classified as having very low food security experienced the condition in 7 months of the year, for a few days in each of those months.

• The typical food-secure household spent 24 percent more for food than the typical food-insecure household of the same size and composition, including food purchased with Supplemental Nutrition Assistance Program (SNAP) benefits (formerly called food stamps).

• Fifty-seven percent of food-insecure households in the survey reported that in the previous month, they had participated in one or more of the three largest Federal food and nutrition assistance programs. ■

Net Farm Income Forecast To Achieve Record High in 2012

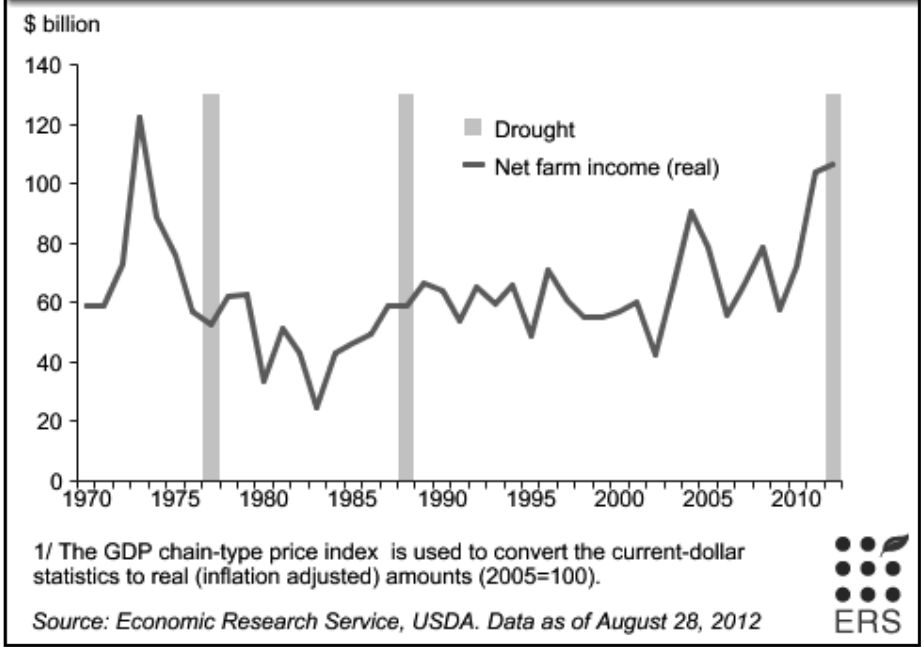
USDA Economic Research Service

U.S. net farm income is forecast to exceed $122 billion in 2012 and net cash income is expected to exceed $139 billion, both record nominal values. The expected increase in income reflects large price-led gains in corn and soybean receipts as well as large increases in crop insurance indemnities. Crop farm gains should be more than enough to offset livestock farmers' higher feed expenses and a decline in sales of wholesale milk.

Extreme hot and dry conditions in the Plains and Corn Belt are drastically cutting projected corn and soybean yields. With corn and soybean supplies for the 2012 marketing year expected to be the lowest in 9 years, prices are increasing dramatically, resulting in higher expected 2012 calendar-year receipts for many crops.

Farm equity is expected to increase to an all-time high of almost $2.3 trillion. Farm asset growth in 2012 is expected to exceed increases in farm debt as increases in the value of farm real estate and financial assets more than offset an anticipated rise in nonreal estate debt. Farm real estate debt is predicted to decline slightly in 2012. Debt repayment capacity utilization (DRCU)--a measure of farm exposure to financial risk--is forecast to be at its lowest since 1970. ■

As in previous drought years, net farm income in 2012 is expected to be fairly stable



1/ The GDP chain-type price index is used to convert the current-dollar statistics to real (inflation adjusted) amounts (2005=100).

Source: Economic Research Service, USDA. Data as of August 28, 2012

ERS

Audience Participation a Priority at Antimicrobial Use, Resistance Symposium

Advanced technology and a highly interactive format will take the "A One Health Approach to Antimicrobial Use & Resistance: A Dialogue for a Common Purpose" symposium in Columbus, Ohio, on Nov. 13-15, to a heightened level of participant involvement. The symposium, developed by the National Institute for Animal Agriculture, will not only deliver the latest research findings and serve as a platform where experts in the field of antimicrobials – public, animal and environmental health – can share information but will encourage attendees – medical doctors, veterinarians, policy makers, organization leaders, livestock and poultry producers, academics, researchers and consumers who have a vested stake – to engage and provide feedback about this issue.

"With individuals from across the spectrum participating in the symposium, it is critical that we capture the information provided by the symposium's speakers plus the knowledge, concerns and solutions brought forth by participants," explains symposium Co-chair Dr. Jennifer Koeman, Director of Producer and Public Health for the National Pork Board. "To that end, a highly advanced, robust feedback management system will capture points of consensus and concern, working toward a collective path forward."

Dorman explains that symposium facilitator Daniel Stone, a corporate change consultant, will develop a list of questions that will be posed to symposium participants who are at tables in groups of eight to 10. Each group will comprise individuals from all disciplines at the symposium: animal health, public health, environmental health, policymakers, university and corporate research and production agriculture.

Participant comments and reactions to facilitator Stone's hot-topic questions will be collected, synthesized and integrated on the spot.

Symposium participants will be a part of the same table after each of the first three sessions. They will be assigned at a different table after the fourth session when they will be grouped with individuals within their own professional discipline.

"A moderator will be at each table and ensure that each participant is heard," states symposium Co-chair Leah C. Dorman, DVM, Director of Food Programs, Center for Food and Animal Issues, Ohio Farm Bureau Federation. "We're dealing with a complex, important issue, and an open environment is necessary so all points of view -- science and ethics-based -- can result in meaningful interaction.

"Facilitator Daniel Stone can distill information like no other. Add the use of a technologically advanced, robust feedback management system and this symposium will take sharing of concerns and consensus to a new level. The symposium's White Paper should be quite dynamic."

Seating to the "A One Health Approach to Antimicrobial Use & Resistance: A Dialogue for a Common Purpose" symposium in Columbus, Ohio, on Nov. 13-15, is limited and individuals are encouraged to register early. Those who register by Oct. 15 qualify for an early bird registration discount, making registration $345/person.

To register for or to learn more about the Nov. 13-15, 2012, "A One Health Approach to Antimicrobial Use and Resistance: A Dialogue for a Common Purpose" symposium, please go online to www.animalagriculture.org or call 1-800-237-7193. ■

2012 Choteau Sheep Expo Sales Report

The 28th Choteau Sheep Expo gathered for the annual sale September 8, 2012 at the Weatherbeater Barn in Choteau, Montana. With numbers down for the industry we had 55 head of quality breeding stock consigned to the sale.

Yearling rams averaged $475, Ram lambs at $425, Yearling ewes averaged $300 and Ewe Lambs $275. Averages were down a bit from the 2011 sale.

The consigners with the High Selling Rams included: Montana Sheep Company with a Targhee yearling ram for $575, West River Suffolks at $525 for a ram lamb and Langhus Columbias with a yearling SAMM ram for $525.

Highlights of the sale included: Bill and Scott McKay, McKay Suffolks, of Ulm, Montana selling the high selling Premium Registered Suffolk ewe lamb at auction for $525.

Brent and Tracie Roeder, Montana Sheep Company, Fort Shaw, MT donated a Premium Yearling Ewe to be sold and the proceeds to go to the Choteau Sheep Expo youth fund for $200. Thanks to Brent and Tracie and the Montana Sheep Company for their donation.

High Selling Ewes included: McKay Suffolks with their premium ewe lamb, Prairie Rose Suffolks with a ewe lamb for $475 and Newman Suffolks with a yearling ewe for $400.

New consigner, Alyssa Gruszie of Bear Paw Sheep Company sold her first ewe lamb at $250.

Sunnyside Hampshires had ram lambs at $400 and 4 ewe lambs at $325.

Top selling Columbia ewe lamb from Gene Langhus went for $325.

Prairie Rose Suffolks had 2 ram lambs at $450. West River Suffolks had ram lamb at $450.

Montana Sheep Co. had a yearling Targhee ram at $525 and 4 head at $450.

Thank you to all that made this another very successful event. See you in 2013 for the 29th Annual Choteau Sheep Expo. ■

NEWS ROUNDUP

from the American Sheep Industry Association

USDA Announces Purchase of 1.7 Million Pounds of Lamb!

The $10 million lamb purchase by U.S. Department of Agriculture's (USDA) Agricultural Marketing Service as announced this summer as part of the department's drought assistance to livestock producers showed major progress again this week with notification that awards were confirmed for 1.72 million pounds of lamb for a total $7.7 million. Bids were accepted for bone-in and boneless leg roasts as well as shoulder chops in nearly even volume between the three cuts for delivery to food assistance centers across the nation.

"Mountain States Rosen, LLC and Transhumance, Inc. (Superior Farms) were the companies winning bids," said Peter Orwick, executive director for the American Sheep Industry Association. "The department of agriculture remains very aggressive in securing commitments for the full allotment of funds in an effort to strengthen the lamb market for sheep producers. Truckloads will actually be rolling out next week beginning deliveries of the first $2 million of purchases as awarded last month."

All roasts and chops must be graded USDA choice or prime and certified as domestic in origin. Delivery of this product will take place between Nov. 1, 2012, and June 30, 2013.

How Do We Make Tractors Safer for Kids?

Researchers who hope to keep children driving tractors safe are turning to a state-of-the-art driving simulator to help determine when kids can safely operate farm equipment.

Scientists at the University of Iowa and the Marshfield Clinic in Wisconsin are looking at how children of different ages process information and make decisions while driving tractors in a first-of-its-kind study of cognitive development skills.

Eighty-eight farm children with tractor experience will hop in the cab of a commonly used John Deere tractor to take a virtual drive within the next month. A movie screen wraps around the tractor, projecting life-like images of their surroundings. The children, ages 10 to 17, will mow fields, navigate hills and maneuver around buildings, people and vehicles. They'll drive along gravel roads in traffic, merge, stop at intersections and pass cars.

All the while, software will record their every move, including speeds, use of brakes, acceleration and eye movements. A control group of 10 adult farmers also will participate.

The pilot study, funded by the National Institute for Occupational and Safety Health, aims to determine whether the simulator can pinpoint small differences in the children's performance.

Reprinted in part from Northern Ag Network

Sheep Cleared for Grazing at Some Airports

It's a different kind of job interview. Some major airports are interviewing sheep to help them maintain thousands of acres of raw land.

As part of a pilot project, 100 grazing sheep (plus a few goats) are hard at work this week eating invasive plants such as kudzu on property belonging to Hartsfield-Jackson Atlanta International Airport.

An airport spokesperson says they like the results so far, but need to compare the costs to other weed control measures. It will take several months to crunch the numbers and make a final decision.

Chicago is also taking bids to hire a sheep crew at O'Hare Airport.

Goats have been munching weeds at San Francisco International Airport for at least eight summers.

"They are hired help and used seasonally in an area that is home to two threatened species: the San Francisco garter snake and the red-legged frog," said Michael McCarron, airport spokesman. "The goats are easier to use than heavy equipment and we expect them to be back next year."

In 2008, Seattle-Tacoma International Airport hired a herd of goats (and three sheep) to spend 12 days eating wild blackberry bushes, Scotch broom and other weeds around the airport. They said too many cages had to be build to protect the plants they wanted to keep so this option didn't work for them.

Reprinted in part from 9News

Vietnam to be Major Wool Manufacturing Hub

Vietnam can become a big wool production center in the world, according to Australian Wool Innovation (AWI). One reason cited by AWI director in charge of urban fashion, Kelly McAvoy, is that labor costs in China are high, making wool manufacturers shift their companies to other countries.

AWI product development and commercialization general manager, Jimmy Jackson, said Vietnam has a large textile industry processing cotton, polyester and acrylic products with a semi-skilled workforce and is quite capable of producing wool products on a large scale.

Labor costs in Vietnam are about US$185-$200 a month, far cheaper than that in China, now up to US$800-$900.

Jackson said another strength is that Vietnam has pre-existing trade routes to Europe and Russia, helping Australian wool easily access other cold climate countries.

AWI director in charge of developing markets, Rajesh Bahl, said there is a plan afoot to invest more in wool production and marketing to meet increasing demand from middle class in Europe and the United States for high-quality warm clothes.

Reprinted in part from Voice of Vietnam Online

Sheep Meat Prices Lower Globally

U.S sheep producers are keenly aware of the dramatic drop in lamb prices between the 2011 and 2012 markets. Lower prices, coupled with wide-spread drought and higher grain and hay costs, are making livestock ownership more risky and placing a cost/price squeeze on producers.

Producers in the United States are not alone in the world, however, when it comes to lower lamb prices this year. Data and testimonials from the sheep industries in both Australia and New Zealand confirm that prices for lambs in those countries have also dropped and, interestingly, to about the same degree as in the United States.

Economists and international industry sources place primary blame on the sluggish economies in both Europe and America (the two higher-value lamb markets in the world). Most agree, however, that prices appear to have stabilized and that the outlook over the next several months and into the future is positive.

Sheep Webinar Audio Available

The webinar, Proper Feeding of Ewes During Breeding and Pregnancy, was held Tuesday evening, Aug. 28. More than 100 attendees participated in the session offered by the American Sheep Industry Association (ASI) in conjunction with its Rebuild the Sheep Industry initiative with funding support from the National Sheep Industry Improvement Center.

According to Rodney Kott, Ph.D., Montana State University and one of the presenters of the webinar, "There was a lot of interest expressed throughout the session and many great questions were asked. It was really exciting to see that much enthusiasm in the sheep business, making it a fun event to be a part of."

For anyone who was unable to participate, the full session is available for viewing from the home page of the ASI website, www.sheepusa.org.

NLPA Sheep & Goat Fund

The merger of the American Sheep and Goat Center into ASI has been finalized. The responsibility to approve the NLPA Sheep and Goat Fund budget and its directors now falls to ASI. There is a Memorandum of Understanding between NLPA Sheep and Goat Fund and ASI. The ASI Executive Board minutes now reflect the view that ASI looks forward to the extension of the MOU along with any needed revisions.

Wool Outlook

Wool prices have fallen in recent months as weak demand conditions weighed down the market in spite of low supply. The start to the new 2012/2013 season in Australia and New Zealand has been disappointing with a 2% decline in the Australian Eastern Market Indicator in the first week of sales (although it was a 5% drop in Australian-dollar terms). Compared with a year earlier, wool prices are between 17% and 25% lower, although prices in July 2011 were at or near record highs.

In spite of the recent pull-back in prices, current wool price levels are also well above the average prices seen in the past 20 years. Wool has outperformed competing fibers. Cotton, polyester and acrylic prices are currently around 30% higher than levels seen in January 2006. In contrast, wool prices are between 80% and 120% better than in January 2006.

Despite the improved tone of trading this week, the steadier price trend has yet to be confirmed and the performance of the market at the next auction will be crucial. A sustained return to the market by buyers may still be a remote prospect, in light of pessimistic economic forecasts in China, evidence of a slowdown in that country's textiles and clothing exports, and the still uncompetitive appearance of wool prices relative to those for other fibers.

With demand conditions in the wool textile industry expected to be weak over the next few months, wool prices could soften a little more in coming months. The added volumes from the Southern Hemisphere producing countries during the Southern Hemisphere spring (Sept-Nov) could put some seasonal pressure on prices.

In spite of this subdued outlook in the short-term, the leading indicators of economic conditions from the Organization of Economic Development and Cooperation point to a turning-point in the downward trend in wool prices seen over the past nine months. Critical to the outlook will be developments in retail sales in the United States, Europe and Japan in the Northern Hemisphere fall/winter.

Reprinted in part from Wool Market Report

Bryant Park to Become Sheep-Filled Pasture

Bryant Park's legendary green lawn will attract more than picnic blankets later this month, as a flock of sheep get ready to take over the park.

In cooperation with the American Sheep Industry Association (ASI), 30 American sheep will be brought into the city from a New York state farm on Sept. 27 to munch on, and fertilize, Bryant Park's grass as part of an event to promote the interior wool market and the Campaign for Wool.

The animals - part of the promotional campaign started in 2010 by the Prince of Wales - will be penned in a 40-foot-by-40-foot, plexiglass-enclosed area and will be allowed to munch on the park's manicured lawn.

A representative for the Bryant Park Corporation said the grass in the designated sheep area will be allowed to grow extra long in advance of their arrival.

"We're fully appreciative of this event," said Jerome Barth, vice president of business affairs for the corporation. "We got very excited about the visual of having sheep in the park."

The pro-wool campaign – which was launched when the prince noticed an overall decline in the industry, with the price of wool dropping along with the number of sheep worldwide – touts the benefits of the fabric, praising it as durable, easy to clean and breathable.

Organizers said they also want to drain the fountain in the park for the day and fill it with wool and yarn, as well as cover several trees in the park with wool fabric.

A table will be set up to showcase how raw wool is sorted. Crafting and knitting stations will showcase wool-centered activities. A bespoke bed made primarily of wool will be on site, along with the craftsman who made it, to highlight the process of creating a mattress from wool.

Home decorating store ABC Carpet & Home will provide wool rugs that will be used for yoga sessions.

"We are looking forward to Campaign for Wool's first event in the United States and pleased to work with them to promote wool in New York City," said Tom Colyer, vice chairman of ASI's Wool Council. "It is a great opportunity for wool and should prove interesting with live sheep in the park adjacent to the historic New York Public Library."

ASI is a sponsor of Campaign for Wool.

Reprinted in part from DNAinfo.com

Despite Drought, Farm Income Should Rise

Income on U.S. farms is expected to climb this year to its highest level in nearly four decades, the U.S. Department of Agriculture (USDA) said, despite the severe drought that has afflicted much of the nation's farm belt.

The USDA on Tuesday forecast net farm income will rise 3.7 percent this year to $122.2 billion, the highest level since 1973 on an inflation-adjusted basis.

The increase comes as the U.S. faces a widespread drought that by some measures is the worst since the 1950s, with hot dry, conditions stretching across the Midwest and Great Plains. Federal forecasters earlier this month sharply cut their estimates for the fall harvest, expecting corn growers to have their lowest-yielding crop since 1995.

The expected rise in income is fueled by a combination of surging prices for corn and other crops – a result of expected declines in the supply – and by the widespread use of government-backed crop insurance, which pays farmers for crops damaged by drought. But those factors aren't benefiting all farmers. The USDA forecast shows livestock and poultry producers are struggling with rising feed costs without the same price rise, while dairy farms face both higher costs and a decline in milk prices.

The dry weather is severely cutting into the size of crops for farmers from Ohio to Colorado. Still, the shrinking harvest has been counteracted by prices for corn and soybeans that have hit record levels, not accounting for inflation. Those prices are driving a forecast 6.7 percent increase in crop revenues from a year ago.

The USDA also expects a rise of $8.4 billion, or 39 percent, in what is known as other farm income, driven overwhelmingly by increased farm-insurance payouts. The forecast doesn't include an estimate for crop insurance payments alone.

A majority of corn and soybean farmers carry crop insurance, which has become the predominate federal safety net for growers. Still, the effects of the drought will vary from farm to farm depending on the level of insurance coverage and when farmers locked in prices for their crops.

The complete report is available at www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/2012-farm-sector-income-forecast.aspx.

Reprinted in part from the Wall Street Journal ■

Ram-blings

By Sharon Salisbury O'Toole
P.O. Box 22, Slater, CO 81653

Next month, we face a Presidential election. For me and for many others, it is not an easy choice. I won't go into the economy, foreign policy or women's issues here. I'll talk about immigrant farm labor and health care.

In early July, my husband Pat and I attended a "think tank" type workshop in Chicago. The subject was the need for a legal, reliable work force, and ways to make the foreign labor component workable for both agricultural employers and for employees.

Representatives of nearly every affected group (except the food retailers) were at the meeting. It certainly was an education to hear from such a broad range of folks involved in immigration and labor. One gentleman called for open borders while the U.S. farmworker representatives preferred no foreign labor in food production at all, arguing that such workers depress wages for U.S. workers.

A couple of facts stand out. A lot of crops rotted in the fields last year, due to labor shortages, and fear on the part of undocumented farm workers to cross into states with strict new laws. Currently, over 90 per cent of agricultural workers are illegal. This figure has risen dramatically in recent years, due to the lack of programs that give visas to such workers. We in the sheep industry do have a logical, if cumbersome, process to hire sheepherders from other countries.

A whole world of crop production exists that is apart from my world. We raise livestock at 7,000 feet and are lucky if we can get a basic vegetable garden to grow. The group heard from apple growers, row crop farmers, and producers of crops that must be harvested and processed in a very short window of time, such as berries. Our sheepherders come in on visas that allow them to stay for three years, given the constant need for sheep to be tended. These farmers need a lot of workers for a short period of time.

How does one design a process that meets the needs of agricultural producers, protects workers and provides them with a living, and—oh yeah—grows food for a growing world population.

Which brings me to health care. One worker advocate said that the migrant workers need access to services like health clinics while they are in the U.S. One can hardly argue with that, but it did strike a chord with me.

I told the group that many populations are underserved in the U.S. I said, "If I were hurt on our ranching operation AND someone happened to be there AND we had cell phone service at that spot, it would be two hours, best case scenario, before I could get medical treatment."

As it turned out, my words were prescient, and optimistic.

In late July, Pat was in four-wheeler (ATV) accident. The machine flipped on a steep hillside, breaking his pelvis and briefly pinning him underneath. We had recently had three grown rams killed in that pasture by a bear. He said his first thought was, "I'm not going to lie here and wait for the bear."

As it happened, he was alone, had no cell phone service, and in spite of wifely nagging, had not told anyone just where he was going. He was actually in sight of our house, in a stand of aspen trees. It was not a place we would have looked anytime soon. We did have an irrigation pump going in our hayfield, several hundred yards below. He crawled down the hill, trying to reach the field where he would at least be out in the open. Luckily, one of our employees went to turn off the pump, heard Pat shouting, and got help. (He first got a gun, thinking the noise might be the bear.)

I called 911. In our very rural community, we have a volunteer ambulance service. These volunteer EMTs arrived about 50 minutes later. Pat was on the other side of the river, so they put him on a backboard, put him in the back of the Fire Department pickup, and drove him across the river to the waiting ambulance. There was some morphine involved. From the time of the accident to his arrival at the hospital in Craig, Colorado, six hours had elapsed.

The emergency room doctor determined that he should be treated at a level one trauma center, so he was life-flighted to Swedish Hospital in Denver. He arrived there about 14 hours after the accident.

This experience put health care questions in a whole new light for us. We are self-employed, and have what I have always referred to as "car wreck insurance." We have a large deductible, but good coverage in case of a bad accident. At least, I hope so – all the bills haven't come in yet.

The policy pays a lot better if the health care provider is in their network. I didn't know until after we had arrived at the hospital whether it was in our network. (It was.) I dug through our files and found our coffee-stained policy. A whole page had been added that showed additional benefits guaranteed by the Patient Protection and Affordable Care Act (aka "Obamacare").

In late July, Pat was in four-wheeler (ATV) accident. The machine flipped on a steep hillside, breaking his pelvis and briefly pinning him underneath. We had recently had three grown rams killed in that pasture by a bear. He said his first thought was, "I'm not going to lie here and wait for the bear."

A lot of rhetoric is flying these days about the pros and cons of this Act. I won't go into these arguments, except to say that our present health care system (like our immigration and guest worker laws, actually) is a mess. Nearly every other developed country has some sort of universal health care. We do too – it's called "Go to the Emergency Room and see everyone else's costs increase). This is the law that Congress managed to pass, before they gave up on actually governing the country. It would be craziness to throw it out. It is my view that the

existing law can be amended and processes fine-tuned as we go forward.

Here is a summary, put together by the Washington Post's Ezra Klein, with information from the Kaiser Family Foundation.

1. By 2022, the Congressional Budget Office *estimates* the Affordable Care Act will have extended coverage to 33 million Americans who would otherwise be uninsured.
2. Families making less than 133 percent of the poverty line – that's about $29,000 for a family of four – will be covered through Medicaid. Between 133 percent and 400 percent of the poverty line – $88,000 for a family of four – families will get tax credits on a sliding scale to help pay for private insurance.
3. For families making less than 400 percent of the poverty line, premiums are capped. So, between 150% and 200% of the poverty line, for instance, families won't have to pay more than 6.3 percent of their income in premiums. Between 300 percent and 400 percent, they won't have to pay more than 9.5 percent.
4. When the individual mandate is fully phased-in, those who can afford coverage – which is defined as insurance costing less than 8 percent of their annual income – but choose to forgo it will have to pay either $695 or 2.5 percent of the annual income, whichever is greater.
5. Small businesses that have fewer than 10 employees, average wages beneath $25,000, and that provide insurance for their workers will get a 50 percent tax credit on their contribution. The tax credit reaches up to small businesses with up to 50 employees and average wages of $50,000, though it gets smaller as the business get bigger and richer. The credit lasts for two years, though many think Congress will be pressured to extend it, which would raise the long-term cost of the legislation.
6. Insurance companies are not allowed to discriminate based on preexisting conditions. They are allowed to discriminate *based* "on age (limited to 3 to 1 ratio), premium rating area, family composition, and tobacco use (limited to 1.5. to 1 ratio)."
7. Starting in 2018, the law imposes a 35 percent tax on employer-provided health plans that exceed $10,200 for individual coverage and $27,500 for family coverage. The idea is a kind of roundabout second-best to capping the tax code's (currently unlimited) deduction for employer-provided health insurance. The policy idea is to give employers that much more reason to avoid expensive insurance policies and thus give insurers that much more reason to hold costs down.
8. The law requires insurers to spend between 80 and 85 percent of every premium dollar on medical care (as opposed to administration, advertising, etc). If insurers exceed this threshold, they have to rebate the excess to their customers. This policy is already in effect, and insurers are *expected* to rebate $1.1 billion this year.
9. The law is expected to spend a bit over $1 trillion in the next 10 years. The law's spending cuts – many of which fall on Medicare – and tax increases are expected to either save or raise a bit more than that, which is why the Congressional Budget Office *estimates* that it will slightly reduce the deficit. (There's been some confusion on this point lately, but no, the CBO *has not changed its mind about this*.) As time goes on, the savings are projected to grow more quickly than the spending, and CBO expects that the law will cut the deficit by around a trillion dollars in its second decade.
10. In recent years, health-care costs have *slowed dramatically*. Much of this is likely due to the recession. Some of it may just be chance. But there's also *evidence* that the law has accelerated changes in the way the medical system delivers care, as providers prepare for the law's efforts to move from fee-for-service to quality-based payments.
11. The law's long-term success at controlling costs will likely hinge on its efforts to change the way health care is delivered, most of which have gotten very little attention. They include everything from encouraging Accountable Care Organizations to spreading medical homes to penalizing hospitals with high rates of preventable infections to creating an independent board able to quickly implement new reforms through the Medicare system.

After our recent experience with the health care establishment, I can say that all of us definitely need the protection provided by the Act. Pat is home, after six, count 'em six, weeks in Denver, and is expected to fully recover from the broken pelvis, although not from increased wifely nagging.

As for me, I plan to vote for my Dad's old friend, former State Senator Russell Zimmer. ■

From the Feed Trough...

By Woody Lane, Ph.D. © 2012

A TRACE OF MOLY

Years ago, a famous comedian periodically exclaimed, "I can't get no respect!" Well, in the livestock world, there are some things that also get no respect; things that quietly hang in the background or hardly ever appear on anyone's radar. Like molybdenum. Yes, molybdenum — moll-IB-den-um — the element with such a tongue-twisting name that many folks just call it *moly*. But respect or not, molybdenum is actually more important than you think. Let's examine why.

First, some chemistry. *Molybdenum* is an element with an atomic number of 42 and an atomic weight of 95.94. Its chemical abbreviation is Mo (not Mb which can stand for Megabyte or Manitoba or myoglobin). You all remember the details of the Periodic Table, right? In case you don't, molybdenum is in the column of *Transition Metals* which also includes chromium, tungsten, and something called seaborgium. These also may be fascinating elements, but they are not particularly germane to agriculture, unless someone is feeding seaborgium to their pet rocks. In any case, with its high melting point of nearly 5,000° F, molybdenum is widely used in heavy industry. Engineers use it in the production of many steels and alloys as well as the manufacture of all sorts of lubricants, plastics, pigments, and even electronic gizmos.

Farmers and ranchers are not as familiar with molybdenum because only a relatively small amount is used in agriculture. I'll divide the agricultural description into three sections: soils, plants, and animals.

Soils: Molybdenum occurs naturally in the soil in a bewildering array of compounds. For folks who read *Wikipedia* and enjoy arcane factoids, molybdenum is the 54th most common element in the Earth's crust and has been found on the moon. *That* is something that will stop conversation in your local coffee house. In our earthbound soils, however, molybdenum occurs in many forms: as various oxides, as complex crystals in rocks, as part of organic matter, and as soluble compounds like molybdates. Molybdenum compounds can be *adsorbed* onto soil particles or they can be dissolved in the soil solution. Adsorbed (with a "d") means sticking electrostatically to the outer surfaces of soil particles, which means that these molecules can become soluble again if the soil conditions change.

From a plant's perspective, it's only the soluble forms that count because plant roots can only *absorb* (with a "b") nutrients dissolved in water. Molybdenum molecules imbedded in crystals or adsorbed onto soil particles are not available to plants because they are not soluble. But here's an important point: *molybdenum solubility is greatly altered by soil pH.* Solubility increases as the soil pH increases. In other words, when the soil pH is only 5 or 6, molybdenum is poorly available to plants. When the soil pH rises to 7 or 8, molybdenum can dissociate from the surfaces of soil particles, dissolve in the soil solution, and become more available to plants. How much more? Researchers have estimated that molybdenum solubility increases *one hundredfold* for each 1.0 unit increase in soil pH.

Simply put, this means that acid soils can cause molybdenum issues. If we want to increase molybdenum to plants, we really have two choices: we can either add molybdenum to the fertilizer (to deliver 20-150 g Mo/acre) or we can increase soil pH with limestone. Or both. In practice, a low soil pH means that we can expect potential molybdenum deficiencies in plants as well as low molybdenum levels in the plant tissue (and the inverse is true with alkaline soils), although high levels of soil organic matter can modify this situation somewhat. Bottom line: *increasing soil pH will* increase molybdenum availability to plants.

Plants: Plants require it. Molybdenum is used in many plant and bacterial metabolic systems. Two of these systems are extremely important to us. One is well known and the other should be. The first is the well-known *nitrogenase* system that permits plants to "fix" nitrogen from the air. Nitrogen fixation occurs in all legumes (alfalfa, clovers, peas, etc.) and also some other plants (notably, trees such as alders and acacias). These plants have nodules on their roots which house billions of *rhizobia* bacteria that convert atmospheric nitrogen into protein. Actually, the chemical machinery in these bacteria is based on the enzyme *nitrogenase.* This enzyme does the actual chemical work of converting atmospheric nitrogen (N_2) into ammonia which is then converted into amino acids and proteins for the bacteria and the host plant. The critical issue for us is that each nitrogenase molecule contains two atoms of molybdenum. Without molybdenum, this enzyme cannot function and legumes cannot fix nitrogen. We have long known that adding molybdenum to fertilizer can improve legume yields, particularly in acid soils. *Bottom line:* molybdenum is required by legumes to fix nitrogen.

The second molybdenum system, however, is even more fundamental to plants. This is the *nitrate reductase* system found in all plants, legumes and non-legumes alike. Plants absorb nitrogen from the soil primarily in the form of nitrate. Plant cells must then convert this nitrate into nitrite and then into ammonia which is made into amino acids and proteins. The first step in this metabolic pathway is governed by the enzyme *nitrate reductase*. You guessed it: this molecule contains molybdenum. Although plants have relatively low requirements for molybdenum, there are practical situations where plants may not obtain enough of it — like in acid soils or soils with a high percentage of clay. Molybdenum-deficient plants cannot effectively use the nitrate in the soil, even if there is sufficient nitrogen in the soil, and even if we apply nitrogen in the fertilizer. A disturbing side-effect of this deficiency is that, since these plants cannot convert nitrates into the next metabolic product, nitrates may accumulate in the plant tissue, which can cause nitrate toxicity in animals consuming those plants. *Bottom line:* all plants require molybdenum so they can utilize soil nitrogen.

Animals: The case for molybdenum in animals is a bit muddy. Livestock probably require molybdenum but in such low levels that under practical field conditions a deficiency is nearly impossible. Although molybdenum is found in at least three animal enzymes — xanthine oxidase, aldehyde oxidase, and sulfite oxidase — these are minor metabolic pathways, and deficiency problems only show up because of genetic disorders or in experiments with purified diets containing high levels of antagonists such as tungsten (one of those other elements in that Periodic Table column. Tungsten is definitely not a required nutrient). There are almost no field reports of molybdenum deficiency in livestock.

But molybdenum is definitely important in an indirect way. High levels of dietary molybdenum will tie up copper in the ruminant digestive tract and prevent copper absorption. Therefore, high levels of dietary molybdenum can cause a *copper deficiency*. Conversely, low molybde-

num levels will increase copper availability and thus will allow more copper absorption. Therefore, potentially causing a *copper toxicity*. Although this situation occurs in all ruminants, sheep producers are acutely aware of it because sheep are particularly susceptible to chronic copper toxicity. *Bottom line:* dietary molybdenum levels can profoundly influence the copper status of livestock.

There is some interesting history here, and it comes back to soil and plant molybdenum. If you look at the nutritional textbooks and mineral guides for sheep, most of the historical emphasis has been on copper *deficiency*. Lots of pages and paragraphs about deficiency symptoms such as swayback, brittle wool, spontaneous bone fractures, etc. These books typically gave only a nodding mention of the problem of copper toxicity. Why? Because for the past 130 years, the main region of sheep production has been in the western range states. Let's consider this for a moment. Range country has, by definition, low rainfall. Low rainfall means little leaching of nutrients, which generally results in higher soil pH (i.e., alkaline soils typical of range country). High soil pH means elevated amounts of soluble soil molybdenum and thus increased availability to plants. Higher plant molybdenum levels means . . . higher levels of molybdenum in the GI tract and reduced copper absorption. Bingo. Hence, a historical emphasis on the problem and risks of copper deficiency in range flocks.

But we also have an opposite situation in areas of high rainfall and low soil pH. These forages routinely have extremely low levels of molybdenum (less than 1 ppm). What happens in the GI tract? Higher absorption of copper. Which, over time, can definitely result in copper accumulations in the liver and, depending on flock management and dietary supplementation, increased risk of chronic copper toxicity. And these same factors apply to cattle and goats, except the levels of copper that cause toxicity are higher. All this is profoundly influenced by molybdenum, an element that we have generally ignored.

Which brings us back to respect. Does molybdenum deserve our respect? I think so. In fact, molybdenum is something we can ignore only at our peril.

Woody Lane is a nutritionist in Roseburg, Oregon. He operates an independent consulting business "Lane Livestock Services" and teaches nutrition, sheep, beef cattle, and grazing workshops across the United States and Canada. His email address is woody@ woodylane.com ■

UW Extension advises using repellents to reduce bluetongue risk in sheep

By University of Wyoming Extension Service

Persistent drought conditions in Wyoming have increased the risk of bluetongue disease in sheep, which is vectored by biting midges.

Scott Schell, assistant entomologist with University of Wyoming Extension, said the early spring and hot, dry conditions Wyoming has experienced favor the reappearance of bluetongue.

"Drought conditions create a lot of mucky edges around receding water holes, which is biting midge larval habitat," said Schell. "Drought also concentrates livestock around fewer water sources in late summer when the biting midge population peaks."

According to Schell, the only way to reduce the risk of bluetongue to sheep in Wyoming is the use of repellents. He said that long-lasting, insecticidal repellents, properly applied to sheep in the summer, provide economical protection from bluetongue. The repellents work by reducing the number of bites sheep receive from infective midges in the weeks just before the first frost, when the chance of infection is highest, he said.

"Timely application of these repellents when the flocks return from summer pastures can protect sheep for a few weeks until the first frost kills off the biting midges," said Schell. "Rams on late summer pasture should also be protected with repellents."

Cooperative research between UW Extension, the former USDA-Agricultural Research Service Arthropod-Borne Animal Diseases Research Laboratory and Montana State University showed that insecticidal repellents, applied as low-volume belly sprays or via treated ear tags, significantly reduced biting midge feeding.

"The larval habitat for the biting midges cannot be treated successfully with insecticides," said Schell. "The insecticidal ear tags provided longer protection but were more expensive to purchase and were slower to work due to the time needed for the insecticide to spread over a sheep's body."

Schell said sprays are faster acting, but the protection provided from insect bites was of shorter duration.

The last large outbreak of bluetongue occurred in Wyoming in 2007.

"Symptoms can include high fever, excessive salivation, nasal discharge, swelling of the face and tongue, and, in some cases, a bluish coloration of the tongue," said Schell.

Many species of livestock and wildlife can get the disease from the bite of an infective biting midge. In Wyoming, the vector species is Culicoides sonorensis, an insect less than 1/8 of an inch long that prefers to blood feed on hoofed animals. However, the severity of the disease varies widely between species.

"Cattle can get bluetongue but exhibit little in the way of negative symptoms while a high level of the virus persists in their blood," said Schell. "This may spread the virus into uninfected Culicoides midges that feed on an infected cow and then feed on other animals."

Flock Calendar Outline

North Dakota State University (From Report No. 52, Sheep Research Report, Feb. 2011, NDSU Hettinger Research Extension Center)

The following guidelines are neither inclusive nor intended to fit every sheep operation. Each operation is different, therefore, each "calendar event" should be tailored to each flock's needs.

PRIOR TO BREEDING

1. Bag and mouth ewes and cull those that are not sound.
2. Replace culled ewes with top-end yearlings or ewe lambs.
3. Keep replacement ewe lambs on growing rations.
4. Evaluate sires:
   A. Be sure they are vigorous, healthy and in good breeding condition.
   B. Rams should be conditioned at least a month before breeding season. Flush rams in poor condition.
   C. Allow at least two mature rams (preferably three) or four buck lambs per 100 ewes.
4. Flush ewes:
   A. One pound grain/day two to five weeks before breeding (usually 17 days).
   B. If ewes are over-conditioned, the effect of flushing will be lessened.
5. Vaccinate ewes for vibriosis and enzootic abortion (EAE).
6. Identify all ewes and rams with ear tags, paint brands or tattoos.

BREEDING

1. The ovulation rate of a ewe tends to be lower at the first part of the breeding season. Vasectomized or teaser rams run with ewes through the first heat period tend to stimulate them and increase the ovulation rate at the second heat period.
2. Use a ram marking harness or painted brisket to monitor breeding. Soft gun grease with a paint pigment mixed in works well for painting the brisket. A color sequence of orange, red and black is recommended with colors being changed every 17 days.
3. Leave rams in NO LONGER than 51 days (35 days is more desirable).
   A. An exception may be with ewe lambs. Allowing them four cycles or 68 days may be beneficial.
4. Remove rams from ewes after the season (don't winter rams with ewes).

PRIOR TO LAMBING
(First 15 weeks)

1. Watch general heath of ewes. If possible sort off thin ewes and give extra feed so they can catch up.
2. Feed the poor quality roughage you have on hand during this period, saving better for lambing.
3. An exception to the above is feeding pregnant ewe lambs. They should receive good quality roughage and grain (about 20 percent of the ration) during this period.

LAST SIX WEEKS BEFORE LAMBING

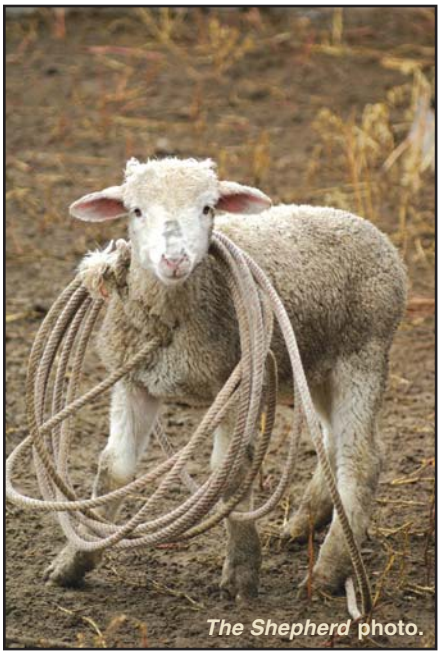
1. Trim hooves and treat for internal parasites.
2. Six to four weeks before lambing feed 1/4 to 1/3 pound grain/ewe/day.
3. Shear ewes before lambing (with highly prolific ewes at least a month before is preferred). Keep feeding schedule regular and watch weather conditions immediately after shearing (cold).
4. Vaccinate ewe for enterotoxaemia.
5. Control lice and ticks immediately after shearing.
6. Four weeks before lambing increase grain to 1/2 to 3/4 pound/ewe/day (usually done immediately after shearing.
7. Give A-D-E preparations to ewes if pastures and/or roughage are or have been poor quality.
8. Feed selenium-vitamin E or use an injectable product if white muscle is a problem. Caution DO NOT use both.
9. Check facilities and equipment to be sure everything is ready for lambing.
10. Two weeks before lambing increase grain to 1 pound/ewe/day.

LAMBING

1. Be prepared for the first lambs 142 days after turning the rams in with the ewe, even though the average pregnancy period is 148 days.
2. Watch ewes closely. Extra effort will be repaid with more lambs at weaning time. Saving lambs involves a 24-hour surveillance. Additional help at this time is money well spent.
3. Pen a ewe and lambs in lambing pen (jug) after lambing, not before.
4. Grain feeding the ewe during the first three days after lambing is not necessary.
5. Be available to provide assistance if ewes have trouble lambing.
6. Disinfect lamb's naval with iodine as soon after birth as possible.
7. Be sure both teats are functional and lambs nurse as soon as possible.
8. Use additional heat sources (heat lamps, etc.) in cold weather.
9. Brand ewes and lambs with identical numbers on same side. Identify lambs with ear tags, tattoos or both.
10. Turn ewes and lambs out of jug as soon as all are doing well (one to three days).
11. Bunch up ewes and lambs in small groups of four to eight ewes and then combine groups until they are a workable size unit.
12. Castrate and dock lambs as soon as they are strong and have a good start (two days to two weeks of age). Use a tetanus toxoid if tetanus has been a problem on the farm (toxoids are not immediate protection, it takes at least ten days for immunity to build).
13. Vaccinate lambs for soremouth at one to two weeks of age if it has been a problem in the flock.
14. Provide a place for orphaned lambs. Make decision on what lambs to orphan as soon after birth as possible for best success. Few ewes can successfully nurse more than two lambs.

END OF LAMBING TO WEANING

1. Feed ewes according to the number of lambs sucking. Ewes with twins and triplets should receive a higher plane of nutrition.
2. Provide creep feed for lambs (especially those born during the winter and early spring).
3. Vaccinate lambs for overeating at five weeks and seven weeks of age.



WEANING

1. Wean ewes from lambs, not lambs from ewes. If possible, remove ewes from pen out of sight and sound of lambs. If lambs have to be moved to new quarters, leave a couple of ewes with them for a few days to lead the lambs to feed and water locations.
2. Lambs should be weaned between 50 and 60 days of age when they weigh at least 40 pounds and are eating creep and drinking water. The advantage of early weaning is that the ewe's milk production drops off to almost nothing after eight weeks of lactation.
3. Grains should be removed from the ewe's diet at least one week prior to weaning and low quality roughage should be fed. Restriction of hay and water to ewes following weaning lessens the chance of mastitis to occur. Poorer quality roughage should be fed to the ewes for at least 10-14 days following weaning.
4. Handle the ewes as little as possible for about 10 days following weaning. Tight udders bruise easily. If possible, bed the area where the ewes will rest heavily with straw to form a soft bed for the ewes to lay on.

WEANING TO PRE-BREEDING

1. If ewes go to pasture, treat for internal parasites.
2. Feed a maintenance ration to the ewes. Put ewe lambs that lambed back on a growing ration once they have quit milking.
3. Adjust ewes condition so they can be effectively flushed for next breeding season. Don't get ewes too fat prior to breeding. ■

Virus could aid post-stroke recovery

By John Gibb, University of Otago (New Zealand)

University of Otago microbiology teaching fellow Marie Inder reflects on research which could result in proteins produced by a sheep virus being used to treat human illness. Photo by Jane Dawber.

In a remarkable twist, a virus which causes scabby mouth skin infection in sheep could be used to help people recover better after strokes, new University of Otago research suggests.

Marie Inder, who will graduate from Otago University today with a PhD in microbiology and immunology, said the research, at the university's virus research unit, could create "exciting new options" for medical treatment.

Those included potentially improved recovery from some strokes, by increasing the repair of blood vessels in the brain.

After her own father, Robert Inder, survived a stroke in 2004, she had become more aware of the need to improve post-stroke therapies.

A growth factor protein generated by the virus could also potentially be used in other therapeutic settings, including to improve healing of diabetic skin ulcers and burn injuries.

Ms. Inder devoted her doctoral studies to analysing the growth-factor protein-called "vascular skin growth factor" (VEGF). This promotes skin and blood vessel development.

The growth factor is generated by the orf virus, using hijacked host cells.

The orf virus causes scabby mouth in sheep, and a skin infection in humans.

In order to generate the protein growth factor by using hijacked host cells, the virus uses a gene it had earlier "stolen" from its hosts hundreds of thousands of years ago.

The virus replicates only in growing host skin cells, and uses the VEGF protein to promote positive conditions for its own development.

An unusual aspect of this particular growth factor is that it stimulates skin growth without promoting an inflammatory response.

This could help in therapeutic uses, including wound healing.

Ms Inder, who is of Samoan ancestry, said she was "really excited and really relieved" to have completed her research, which was supported by an HRC Pacific Health PhD Scholarship.

Andrew Mercer, who is director of the microbiology department's virus research unit, has said some viruses deployed "a vast array of weapons".

By enlisting aspects of the viruses' strengths to work for humans rather than against them, "a whole new arsenal of tools" could be created to counter diseases.

Prof Mercer, who supervised Ms. Inder's research, with fellow supervisors Dr. Lyn Wise and Dr. Stephen Fleming, said her research had contributed significantly to the field. ■

Social Media for Farm Product Marketing

Internet-based communication tools known collectively as "social media" are gaining popularity for large and small businesses alike. Social media platforms such as blogs, Facebook, and Twitter are great ways for businesses easily to share information about products and services, network with new people to build a loyal customer base, and stimulate market traffic.

A new ATTRA publication, "Social Media for Farm Product Marketing," helps farmers and ranchers understand how to use those tools to grow their businesses through examples and concrete, helpful tips. It discusses how to get started using the most popular platforms for marketing through the Internet, including Facebook and Twitter, as well as blogging, building effective websites, and hiring social media consulting services.

ATTRA was developed and is managed by the National Center for Appropriate Technology (NCAT) through a cooperative agreement with the USDA Rural Business Cooperative Service.

The publication uses numerous interviews with operators to illustrate firsthand the opportunities and the obstacles social media present, especially for smaller growers.

"Social Media for Farm Product Marketing" can be downloaded free at the ATTRA website www.attra.ncat.org. It's also available as a printed document for a small handling fee.

Excerpts from the publication:

Tweet truly interesting and valuable info and your audience will begin to pay attention and look for your farm's tweets or Facebook posts. Tweet useful resources or thoughtful tips to build your reputation as a go-to expert in the field. Use the Twitter search tool to find people who are looking for products you can provide and look for questions/ conversations that you can answer and join:

- The more clicks, the more exposure—more people will follow you.
- Ask anyone already consuming your content to follow you on Twitter.
- Find people talking about what is interesting to you in Twitter and join in on the conversation.
- Follow people who are interested in the same things.

Beth Weaver-Kreider manages the Facebook page for Goldfinch Farm CSA, a 220-member CSA she owns with her husband Jon near Wrightsville, New York. Goldfinch Farm uses social media not only to update shareholders but also uses it as a marketing tool. Facebook has been optimal for Jon and Beth because it doesn't involve the commitment to post a long blog regularly and doesn't seem as foreign to them as Twitter. ...

Beth manages the Facebook page: posting a photo, farm update, or sustainable agricultural news link once or twice per week throughout the CSA season and about twice per month in the winter months. She doesn't want to overwhelm people with too many posts, so she keeps it simple. ...

Beth carries a camera in her pocket, shoots photos of farm happenings, and uses the images to update regular shareholders and also as eye candy for non-shareholders. ...

Despite using Facebook as an advertising tool to increase awareness about their business and draw more CSA members, Beth hasn't offered rewards for 'liking' their page. "When I see other farm Facebook pages offer something to get more 'likes' it seems fine, but when I think of doing it, it feels gimmicky. People should do what fits the soul of their farm." ■

Digestibility of Goat Milk

A fascinating new article was printed in Small Ruminant Research journal. The paper, "Characterization of size and composition of milk fat globules from Sarda and Saanen dairy goats," was written by S. Pisanu and nine other co-author researchers.

According to the abstract of the paper, "The small size of goat milk fat globules (MFGs) is one of the factors contributing to the higher digestibility of goat milk compared to other milks. In this study, size, protein composition and lipid distribution of MFGs were evaluated comparatively in a popular dairy breed, Saanen, and in a minor breed, Sarda.

"MFGs were found to be significantly smaller in Sarda compared to Saanen goats, with average diameters of 2.73 ± 0.15 μm and 3.63 ± 0.27 μm, respectively. Raman spectroscopy revealed differences in the lipid profiles of differently sized MFGs within each breed, with MFGs of the same size class having comparable profiles between breeds."

The study "demonstrates the existence of breed-dependent differences in the lipid and protein makeup of goat MFGs, likely related to their different size distribution. This highlights once again the importance of investigating biodiversity in autochthonous and neglected breeds, which often possess valuable attributes that might be lost as a consequence of the widespread diffusion of highly productive, but more homogeneous, dairy breeds."

Killing sheep for orf

News organizations report that Pakistan officials have ordered the killing and burial of more than 21,000 sheep imported into that country from Australia because the animals show signs of infection with Orf, a highly infectious virus that thusfar has not been detected in that country.

The purchaser of the sheep has apparently sought an injunction against the ordered "merciful destruction and their proper burial without any delay," and a high court has ordered the animals be retested before their fate is determined. If the animals are killed, the meat will not be saved because Pakistan does not want workers or butchers to become contaminated with the disease. The situation has been deemed an animal health emergency, and the 21,268 sheep remain in quarantine at Pakistan Livestock and Meat Company.

Biosafety website

Dr. Richard Browning Jr., a research animal scientist at Tennessee State University in Nashville, has established a biosafety site aimed at managers of goats and sheep. In creating this site, he posted English and Spanish versions of four fact sheets developed by the National Center for Foreign Animal and Zoonotic Disease Defense Center:

- Biosecurity Measures for Meat Goats and Sheep
- Major Zoonotic Diseases of Sheep and Meat Goats
- Foreign Animal and Zoonotic Disease Information for Small Dairy Goat Farms
- Management Options to Prevent Diseases for Small Dairy Goat Farms

These publications were developed by the FAZD Center's Species Specific Resource Team, led by Prinicpal Investigator Dr. Tom A. (Andy) Vestal, Texas AgriLife Extension Service, Texas A&M University System, College Station. ■

Sheep Management Tips – Late Fall

By Dr. Scott P. Greiner, Extension Animal Scientist, VA Tech, Virginia Cooperative Extension, Virginia State University

Breeding to 6 Weeks Before Lambing


The Shepherd photo.

1. Mature ewes in average to good body condition should be fed to maintain or slightly increase their bodyweight during the first 3 ½ months of gestation. This is the time to take advantage of lower quality pasture. If this period occurs during the winter, hay will normally supply the necessary nutrients, with no supplemental grain required.
2. Thin ewes should be fed separately and supplemented with 1 to 1.5 lbs of grain per day to gain 10 to 15 lbs by 6 weeks before lambing.
3. Pregnant ewe lambs should be fed separately from mature ewes. They should gain approximately 25 lbs from breeding to 6 weeks before lambing. Attempts to cause large weight gains in ewe lambs during late gestation may lead to lambing problems. Conversely, underweight ewe lambs and/or poor body condition have low birth weight lambs and poor survivability and lower milk production.
4. If pregnant ewes are to be brought into the flock, keep these ewes separate from the main flock through lambing when feasible. This will diminish the risk of introducing abortion and other diseases into the main flock. Consult with your veterinarian regarding health management protocols for these newly received ewes.
5. Shear ewes if facilities are available to shelter ewes appropriately during winter months.
6. Test hay for nutrient content to facilitate proper and economical diet formulation.

Six Weeks Before Lambing

1. Start feeding 0.5 lb of grain per head daily as a preventative for pregnancy disease. Grain may be in the form of whole shelled corn or barley. Even if ewes are on good quality pasture, they still require the extra grain. During the winter or when on poor quality pasture, feed approximately 4 lbs of hay in addition to grain.
2. Supplementation of tetracycline prelambing has been shown to reduce the incidence of abortions. Consult with your veterinarian on a flock health management protocol.
3. Make sure there is plenty of feed trough space so that ewes do not crowd each other at feeding time.

Four Weeks Before Lambing

1. Shear the wool from around the head, udder and dock of pregnant ewes. If covered facilities are available, shear the ewes completely. Sheared ewes are more apt to lamb inside, facilities stay drier because less moisture is carried in by the ewes, sheared ewes require less space, and environment Is cleaner for newborn lambs and the shepherd. Sheared ewes must have access to a barn during cold, freezing rains, and they must receive additional feed during periods of extremely cold temperatures.
2. Vaccinate ewes for overeating disease and tetanus. These vaccines provide passive immunity to baby lambs through the ewes' colostrum until the lambs can be vaccinated at 4 to 6 weeks of age.
3. Check and separate all ewes that are developing udders or are showing signs of lambing. Check and remove heavy ewes once a week during the lambing season. Increase the grain on all ewes showing signs of lambing to 1 lb daily, and feed all the good quality grass/legume hay they will clean up.
4. Observe ewes closely. Ewes that are sluggish or hang back at feeding may be showing early signs of pregnancy disease. If so, these ewes should be drenched with 2 ounces of propylene glycol 3 to 4 times daily.
5. Shelter ewes from bad weather. ■

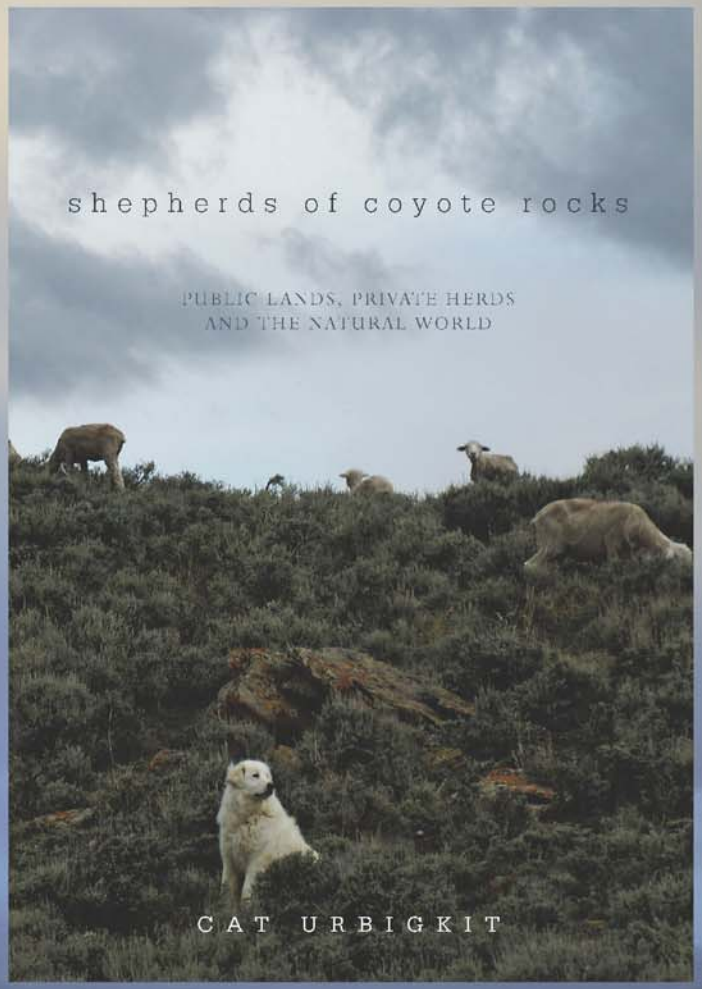
The true story of one woman's year guiding sheep across Wyoming's open range.

"Warm and lively…this enlightening read will appeal even to city dwellers who may not understand the impact of environmental protection policies that block off land from its traditional human uses."
—***Publishers Weekly***

"Shepherds of Coyote Rocks is equal parts natural history, adventure and love song to all things wild. As lion-hearted as the guardian dogs that protect her sheep, Urbigkit infuses this at times harrowing tale with courage, warmth and the fulfillment of finding the wild within one's own soul."
—**Rebecca K. O'Connor**, author of the acclaimed falconry memoir, *Lift*.

"This book is the real deal. Cat's account of tending her sheep high in the mountains of western Wyoming is a story few people can tell so well. She captures all the romance and ruggedness of the range."
—**Matthew H. Mead**, Governor of Wyoming

"Grassland health depends on Cat and those like her who are trying to maintain movement on this working landscape."
—**Tony Malmberg**, co-founder of the Savory Institute



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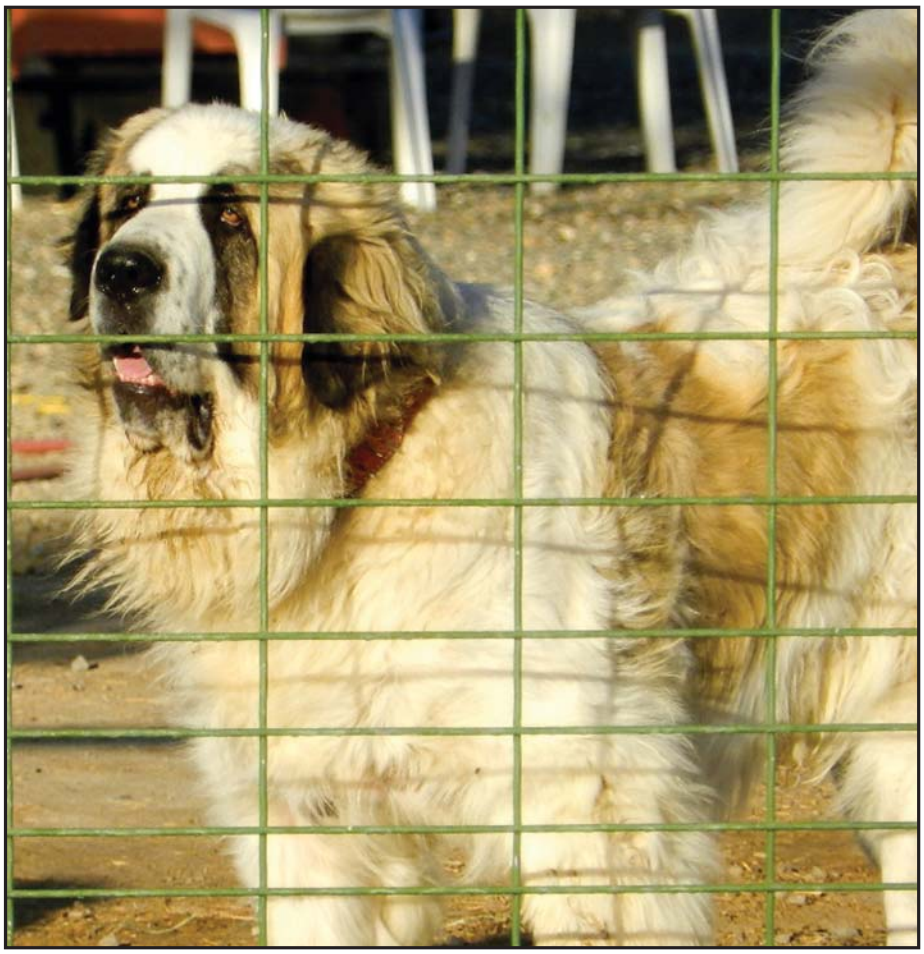
With the plethora of LGD (Livestock Guardian Dog) breeds out there, many an owner of smaller sheep and goat operations is often left with their head spinning trying to choose the right breed for their particular livestock protection needs, acreage and set up. With the increased use of both sheep and goats for targeted grazing and weed control operations, the use of larger, more low-key and less prone to wandering breeds of LGDs can be an optimal choice for the farmer or rancher who still needs his operation protected from predators, but lacks the space some LGD breeds need or prefer to operate on.

Many LGD breeds are known for their need for ample space to roam to stay content in their duties. Some breeds are renowned for their propensity to wander if not checked frequently or kept confined with good fencing. Whether by digging out or jumping over fences, breeds like the Great Pyrenees, Akbash, Anatolians and Kangals will often regularly test the perimeters of their fields, and jump a fenceline to either chase off a predator or perhaps just take a "Sunday spin" to see if the grass really is greener on the other side.

Although covering smaller areas, targeted grazing areas may still be in the line of fire of predators, and the livestock being utilized, certainly need protection. For smaller acreage and special weed control projects that may be electric fenced and rotated, a larger, closer guarding and more lethargic breed of LGD may be the answer some seek.

Two such close guarding giant breeds from Spain are the ancient Spanish Mastiff and the Pyrenean Mastiff. They are known for being content to lie for hours within their herds, resting while they guard. With occasional forays to check fence lines, these breeds prefer to lie within or near their livestock charges. In Spain they are still hardy enough to travel with bands of sheep across the country in what is called trashumancia, where shepherds, sheep and dogs travel for miles grazing.

Spanish Mastiffs and Pyrenean Mastiffs are not known for jumping or climbing fences due to their size and weight (from 150 -250 pounds). A more low key, less hyper or intense temperament is a hallmark of both of these giant breeds. They are content to sleep within a herd during the day, but still will respond quickly to any threat. When threatened or challenged, they can quickly turn from dozing, slumbering giants to very formidable contenders who can stave off an attack. Their huge jaws have more crushing and gripping power than lighter LGD breeds and a bite from either breed can be damaging if not lethal to a predator. Both are amongst the more rare LGD breeds in this country but are steadily gaining popularity, and both breeds enjoy steady, trustworthy temperaments.



The Pyrenean Mastiff only came to America in the mid 1990s. It is renowned as an affable, extremely smart yet serious guardian for livestock, family and farm. It is probably one of the friendliest LGD breeds I have ever owned, thus making it an attractive option for the first time LGD owner who might shy from more intense or complex breeds. The Pyrenean Mastiff was on the brink of extinction at one point and brought back by devoted enthusiasts in Spain and it now enjoys popularity in Europe as a guardian, show dog and pet. With a medium to long coat, usually white based with black, gray, chocolate, brindle, tan or brown spots and splotches, the breed resembles something like a Great Pyrenees crossed with a St. Bernard. Brought up with stock, they are gentle and caring and as pups show avid interest in their charges. I have been impressed with their readiness to guard and be with my sheep. Two young Italian imports I have that were not raised on sheep or goats have turned out to be extremely dedicated and devoted to my herd. The guarding instinct is still so ingrained in the breed that it can be brought out and encouraged if pups are put on stock soon enough. And, I have been taken aback and impressed at the fierce ability to fight and hold their own in the males.

The Spanish Mastiff has been in the States longer, mostly enjoying pet status. There are both purebred and crossbred Spanish Mastiffs now guarding livestock here in increasing numbers. They have a little harder temperament, and are more aloof, showing less interest in mingling with people. There is a large physical variety in the breed ranging from heavier and looser skinned types to thinner specimens with less loose flesh. I own Spanish Mastiffs of both types, coming from show kennels and working lines as well. What has fascinated me is that the heavy dogs out of international champions have guarded my sheep just as well as those lighter specimens coming from purely working breeders in Spain. Colors can run the gamut from creamy almost white beige to black, pintos and tiger colored brindles. I have high hopes for this breed's positive influence in producing dogs that can deal with the larger more fierce Canadian crossbred wolves that increasingly plague ranchers in parts of the U.S.

Although both breeds are less agile and slower than other LGD counterparts, where they excel is in their power. A glancing blow or bite from one of

Continued on page 28

From page 27

these giants packs two to three times the punch than from smaller, lighter dogs, thus making them extremely effective in a battle. I have witnessed this myself in inter-pack rivalry fights between my own Spanish and Pyrenean Mastiffs against other breeds. One of my very tall, quicker and powerful Anatolian/Maremma cross males was put in his place by my lumbering giant male Spanish Mastiff Patron, who simply flipped his opponent over on his back, then stood snarling over him, pinning him helpless.

What some may call phlegmatic, lazy or slow, others as myself see quiet power, the savvy to conserve strength and stamina, and the cunning knowledge to lie in wait. As I watch my Pyrenean and Spanish Mastiff dogs loll in my hair sheep flock while the other breeds run the fences and perimeters, I rest assured knowing if anything gets past the outside dogs, what lies in wait for any predator or threat to my sheep is a sleeping giant that will rise to the occasion and not disappoint when it comes to protection. Spanish Mastiffs and Pyrenean Mastiffs can be an intelligent addition to any stockman's LGD program for more effective, complete protection, in their purebred form as back up to lighter, faster agile breeds, or for use in a crossbreeding program to add bone, size, muscle mass and power. These two gentle yet formidable giant breeds are an ideal choice for the rancher running on a smaller operation, using portable fencing for targeted grazing, or run in conjunction with other breeds as no-nonsense back up on a large range operation. ■

Volunteer Crops Can Provide Additional Animal Feed

North Dakota State University Extension Service

There are reports of hay shortages, especially in western North Dakota, because rainfall has been sparse this growing season.

"However, there may be some opportunities to grow some animal feed after the early season crops, such as wheat and peas, are harvested," says Hans Kandel, North Dakota State University Extension Service agronomist. "Of course, the opportunities depend on the availability of rainfall and residual soil moisture."

Dry peas are being harvested and some fields are tilled just after the harvest or may receive a late chemical burn-down to prepare the field for the next growing season. There are opportunities to utilize these fields for a volunteer pea feed crop.

At harvest, a small percentage of the dry field pea seeds will have dropped to the ground, even when combines are well-adjusted. These seeds may be stimulated to germinate and start growing. However, it may require a light harrowing of the field to incorporate the seed.

Soil moisture is essential for germination to take place. As the stimulated volunteer plants are following the main crop of field peas, there will be high numbers of Rhizobium leguminosarum bacteria (inoculum) in the soil, so nodulation typically is excellent.

The growing pea plants will provide a cover to protect the soil from erosive forces. This system can make use of the remaining growing season because field peas are tolerant to minor frost.

The total amount of biomass produced depends upon the pea plant's density, timing of regrowth, soil moisture, rainfall and the date of a killing frost.

The volunteer pea crop can be used for grazing.

"Research at the Carrington Research Extension Center in 2008 found that fall-produced dry pea biomass reached 1,500 to 3,000 pounds per acre," Kandel says "After grazing, the leftover pea stubble can be worked into the soil as a green manure or left through the winter. However, there is not enough time left to expect to harvest a second dry pea crop for seed."

Similarly to dry peas, residual small-grain seeds (wheat, barley or oats) could be worked into the soil with a light harrowing to assure good seed-to-soil contact. Sufficient moisture in the topsoil is needed for germination.

Volunteer Grain and Broadcast Brassica Species

The volunteer grain will take up some of the residual nitrogen. However, because it is following a main crop just harvested, there may not be sufficient nitrogen available for the plants to maximize productivity.

If there is enough rain, some additional nitrogen applied after emergence and establishment to stimulate crop growth may be beneficial.

"The risk of this system is when winter wheat is planted in the neighborhood of the volunteer small-grain crop," says Joel Ransom, NDSU Extension Service agronomist. "The volunteer crop forms a green bridge for wheat curl mites that vector the wheat streak mosaic virus, which is a disease that can survive on grassy weeds, corn and volunteer grain. The mites might move from the growing volunteer crop to the newly seeded winter wheat plants. This would put the winter wheat crop at risk."

Under good growing conditions, a volunteer wheat crop can produce about 3,100 to 3,500 pounds of dry matter.

The dry peas or other small-grain volunteer systems will use soil moisture that may deplete the reserves for next year's crop.

Other options to increase the chances of getting a good, well-established crop stand is to broadcast some additional small-grain seeds or other species that develop well in the fall, such as radishes.

"The systems described will work best with grazing because there usually is not enough tonnage to justify haying," Kandel says.

Spring Wheat Cover Crop

Dispatch from Mormon Trail Farm....

By Clark BreDahl
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The old saying "blood runs thicker than water" may be losing some of its meaning when it comes to the agricultural family. It's always disappointing when farm and ranch groups squabble with one another – especially when they do it in front of God and everybody.

Earlier this summer, I saw that the American Sheep Industry Association had joined a group of about 20 livestock and food organizations petitioning the EPA to grant a waiver to the Renewable Fuels Standard. The petition is allegedly in response to current high grain prices. Closer inspection, however, shows that many of the petitioners have been foes of ethanol at every turn and the current waiver effort could be little more than an attempt to exploit the most widespread U.S. drought since Dustbowl days of the thirties.

For just a bit of bare-bones background information, the Renewable Fuels Standard was enacted by Congress in 2005 and initially mandated that 7.5 billion gallons of renewable fuel be blended into gasoline by 2012. Two years later, the RFS was expanded and extended, calling for inclusion of 36 billion gallons by 2022 – much of it anticipated to come from "second generation" cellulosic sources. This year, something in excess of 13 billion gallons of corn ethanol will enter the transportation fuel supply, though some production plants have already shut down and others are running well below capacity due to the current market situation.

Presently (in early September) the corn market here in southwest Iowa hovers around $8.00 per bushel. When the RFS was initially passed, it had been nearly 20 years since a major drought in the nation's grain producing mid-section. And, for most of that time, the price of corn languished perpetually, it seemed, in the $2.00 - $3.00 range.

Mother Nature, of course, doesn't pay any attention to the hot air emanating from Washington – she can create enough of her own. Last year, she fired a warning shot across the Heartland's bow with isolated pockets of drought severe enough to cause modest reductions in the national grain harvest. But, that was just a warm up for what was to come in 2012 – which currently ranks as the hottest January-August period since the 1800's. And, the scope of the Drought of 2012 is unprecedented in my lifetime as nearly 30 states contain areas designated to be in "extreme" drought.

Have the drought-induced grain prices affected livestock input costs and food prices? Absolutely, though most of the super market sticker shock so far has resulted from opportunism rather than any real shortages. Meat prices in the display case have actually dropped some of late due to increased supplies resulting from shorter feeding periods for cattle and hogs.

Feed costs, however, have definitely gone up. And, it's painful – even for those living in the heart of corn country. But, does it justify changing policy in midstream regarding the nation's energy independence and health?

For 22 out of the 25 years prior to enactment of the RFS, large livestock producers were able to purchase corn – and in some cases ship it outside the Corn Belt – for a price below the actual cost of production. It was "sustainable" only because of multibillion-dollar government crop support programs that paid farmers to grow surpluses. It allowed arid, sparsely populated areas of Texas, Oklahoma, Kansas and Colorado to become cattle and lamb feeding Mecca's despite the fact they grew little corn. Likewise, swine production mushroomed in North Carolina, poultry production exploded in the southeast and dairying took off in California – all with the aid of cheap, subsidized, corn.

Several things besides the Renewable Fuels Standard have happened over the last decade to change the slant of the playing field regarding grain prices in the U.S. 1) severe drought in other major grain producing areas of the world and, 2) a dramatic decline of the dollar against foreign currencies which has helped make grain for livestock feed a bargain for protein-hungry nations like China, Korea, Thailand and India. Strange as it may seem, developing countries of the world like to eat, too. And, in the last decade, they have found the financial resources to compete with us to do it.

As of last year, ethanol plants were consuming approximately 40 percent of the nation's corn supply. Most don't realize, however, that the net effect is much less. More than a third of the volume going in the front door of America's ethanol plants comes out the back door as better livestock feed than what went in. It still contains all the protein, fat, fiber and other nutrients in a more concentrated form. Starch is the only thing removed from the kernel. And, another fact of note: the amount of distillers grains (the primary co-product of corn ethanol production) produced last year totaled *more than all the grain consumed by beef cattle in the U.S.*

For most Cornbelt livestock producers, ethanol production has been a boon – actually lowering feed costs in many cases while improving performance. Some outside the Midwest argue that ethanol co-products are not readily available. I can't speak to the reasons for that but know a significant part of the dry distillers produced near me ends up being shipped half way around the world. Someone must think it is well worth the transportation costs.

Thirty years ago in the Midwest, it routinely took 60 bushels of corn to finish out a steer to market weight of 1250 lb. Today, the same critter can be finished on only 15-30 bushels of corn, and the numbers keep dropping. Likewise for lambs – at the peak of our commercial lamb feeding days, we budgeted 3-plus bushels of corn to take an 80 lb. lamb to market. Today we can achieve nearly the same feeding efficiencies with none!

Severe drought is a painful pill to swallow whether you raise crops or livestock. We are somewhat unique in our area in that less than half our farmland is devoted to row crop production. The bulk is in pasture and forages for sheep and cattle. For us, reduced forage production will be a much bigger impact of the drought than corn. Hay and pasture yields are less than half of normal and prices have exploded. Big round bales of mixed hay weighing around 1500 lb. are

selling on the far side of $160 each – if you can find them. That's about three times what they were a year ago.

When you can find serious economic analysis of the subject, most says a waiver of the RFS would have little effect on the price of corn – perhaps less than 5 percent. A major reason is that safeguards already exist within the program that allow petroleum blenders to carry forward credits and reduce actual usage during times of short supply. Simply due to the drought and market factors, ethanol production is already at two-year lows and will likely continue to fall.

Taken a couple of steps further down the consumer chain, ethanol has reduced the price of gasoline at the pump by an estimated $1.60 per gallon. For the average family in the U.S., that translates to a savings of over $2,000 per year. Regardless of the mandate, fuel companies will continue to use ethanol because it is the cheapest way to increase octane levels of petroleum-based gasoline. And, it's also the cheapest way to conform to provisions of the Clean Air Act of 1990 which cracked down on dirty exhaust emissions and human health hazards found in straight gasoline.

I am not a big fan of government subsidies or mandates in any form. I see nothing in the Constitution that would seem to permit them. They do, almost always, create winners and losers and – as in this case – often pit groups against each other. Years ago, my preference would have been that ethanol be promoted strictly on its merits – when blended with gasoline at somewhere between 25-30 percent of the mixture, it provides fuel economy similar to straight gasoline at a lower cost, with significant reductions in harmful exhausts and known carcinogens. Plus, the co-products remaining replace a large part of the corn used! RFS or not, that seems like a no-brainer to me. Maybe Henry Ford had it right when his first Model T's rolled off the assembly line powered by ethanol instead of gas.

For sheep producers now joining the clamor to kick the legs out from under ethanol in response to (hopefully) a short-term hot flash from Mother Nature, I would say take a deeper look.

If corn prices were truly a concern, why feed lambs to over 200 pounds? Even so, I guess if current lamb prices were similar to last year or the year before, we'd still all be chuckling on our way to the bank! They aren't, and we mostly did it to ourselves. Asking others to pick up the slack for our mistakes seems like a weak response to me. ■

Drought leads to tough choices at University Farm

Illinois State University
Written by Ryan Denham

It's been a trying year for Midwest farms, and Illinois State's University Farm is no exception.

The drought has ravaged crops in Illinois and elsewhere. Normal saw only about 4.9 inches of rain this summer through August 15, less than half the 9.9-inch average rainfall for this time of year.

The missing rain presents some unique challenges for University Farm near Lexington, which supports teaching, research, and outreach activities and is staffed by eight full-time employees and between six and 12 student assistants. The farm has about 600 acres between two locations, typically selling off its soybean crop but using its corn to feed hundreds of cows, swine and sheep on the grounds.

"We have to be relatively self-sustaining, much like a normal farm would be," said University Farm manager **Russ Derango**. "It's gonna be a tough year."

That's because the drought has done a number on University Farm's 350 acres of corn. Typically, crews will grind up the full cornstalks from a portion of those 350 acres into what's called silage, which is used to feed beef cattle and sheep because it's high in energy and digestibility.

But because the cornstalks today are only 5 feet tall, instead of 8 feet, they have to chew up more acreage to fill their silage storage units. (As of last week, two bunker silos that are usually full were only half full, and they were still short about one and a half upright silos worth of silage.)

That leaves less acreage to run through the combine to harvest traditional grain, which is also used for animal feed for University Farm's livestock. The farm averaged about 180 bushels an acre over the past five years. But this year, with the drought, they'll be lucky to get 100 bushels, Derango said.

So University Farm will likely have to buy more grain from neighboring farmers to make due, at a time when the drought has raised prices sky high. (At a traditional crop-livestock combined operation, they could cut down on the number of livestock to reduce feed costs, but many of Illinois State's animals are there for research purposes, so they can't be offloaded so easily.)

On a positive note, the farm's soybeans will sell for higher prices too, Derango said. But because the farm also buys soybean meal for its hogs, he said, it's paying more for that too.

"It's off the charts," Derango said.

The drought could have a silver lining for students. Department of Agriculture classes in farm management and agriculture policy will touch on issues related to the drought, said J. Randy Winter, a professor in the Department of Agriculture's Agribusiness faculty.

Derango said there's not a lot Mother Nature can do for this year's corn crop, though the beans could benefit from a few good rains. For now, he's just hoping for moisture to help out in 2013. ■

Body condition scoring of sheep

J. Thompson and H. Meyer

Throughout the production cycle, sheep producers must know whether or not their sheep are in condition (too thin, too fat, or just right) for the stage of production: breeding, late pregnancy, and lactation.

Weight at a given stage of production is the best indicator, but as there is a wide variation in mature size between individuals and breeds, it is extremely difficult to use weight to determine proper condition. Body condition scoring describes the condition of a sheep, is convenient, and is much more accurate than a simple eye appraisal.

A body condition score estimates condition of muscling and fat development. Scoring is based on feeling the level of muscling and fat deposition over and around the vertebrae in the loin region (Figures 1–3). In addition to the central spinal column, loin vertebrae have a vertical bone protrusion (spinous process) and a short horizontal protrusion on each side (transverse

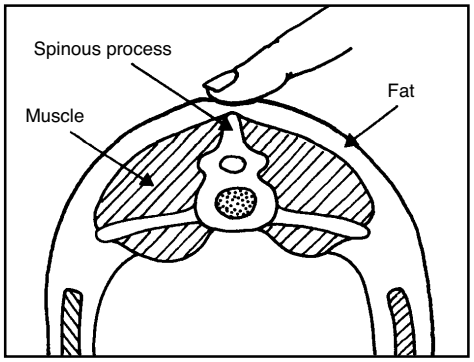


Figure 1.—Feel for the spine in the center of the sheep's back, behind its last rib and in front of its hip bone.

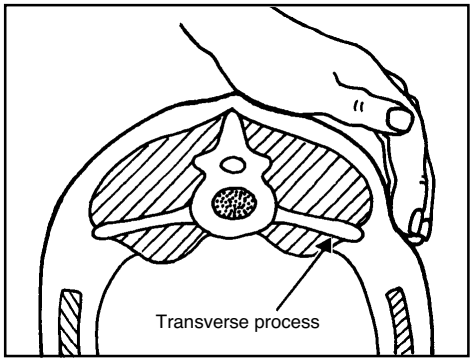


Figure 2.—Feel for the tips of the transverse processes.

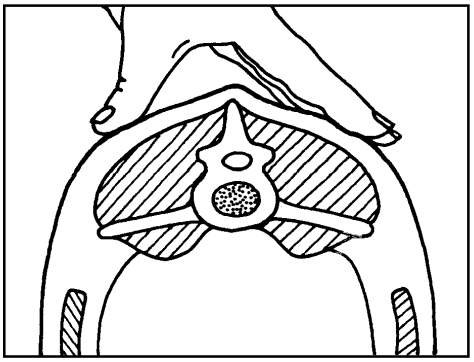


Figure 3.—Feel for fullness of muscle and fat cover.

James M. Thompson, Extension sheep specialist, and Howard H. Meyer, associate professor of animal sciences; Oregon State University.

OREGON STATE UNIVERSITY EXTENSION SERVICE

process). Both of these protrusions are felt and used to assess an individual body condition score.

The system used most widely in the United States is based on a scale of 1 to 5. The five scores (Figures 4–8) are:

Condition 1 (Emaciated)

Spinous processes are sharp and prominent. Loin eye muscle is shallow with no fat cover. Transverse processes are sharp; one can pass fingers under ends. It is possible to feel between each process.

Condition 2 (Thin)

Spinous processes are sharp and prominent. Loin eye muscle has little fat cover but is full. Transverse processes are smooth and slightly rounded. It is possible to pass fingers under the ends of the transverse processes with a little pressure.

Condition 3 (Average)

Spinous processes are smooth and rounded and one can feel individual processes only with pressure. Transverse processes are smooth and well covered, and firm pressure is needed to feel over the ends. Loin eye muscle is full with some fat cover.

Condition 4 (Fat)

Spinous processes can be detected only with pressure as a hard line. Transverse processes cannot be felt. Loin eye muscle is full with a thick fat cover.

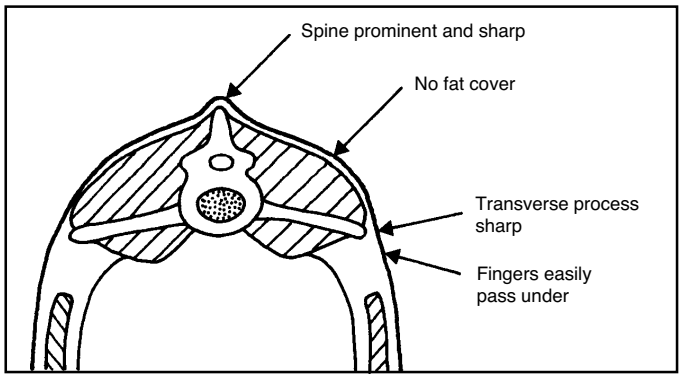


Figure 4.—Condition 1

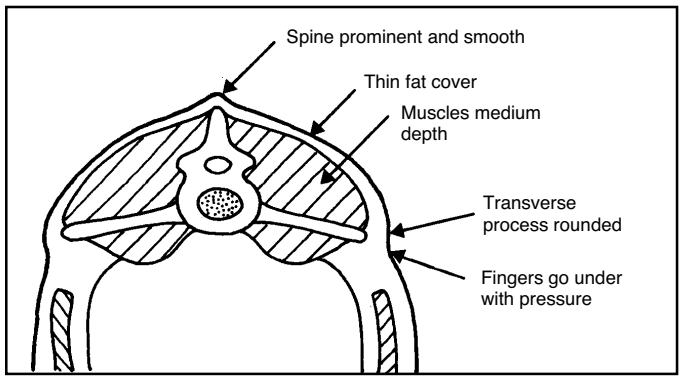


Figure 5.—Condition 2

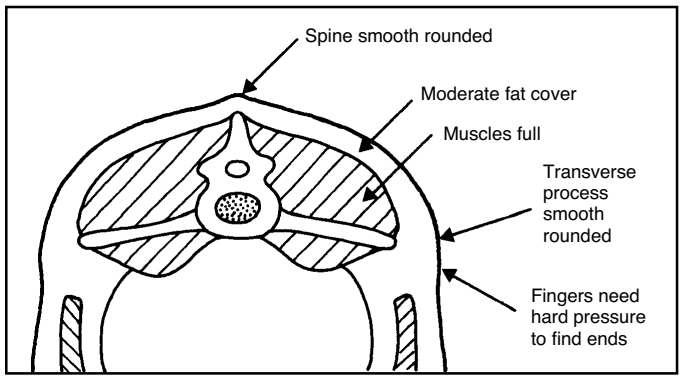


Figure 6.—Condition 3

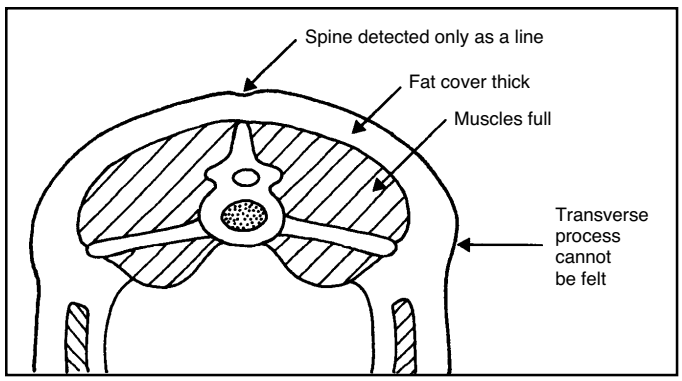


Figure 7.—Condition 4

Condition 5 (Obese)

Spinous processes cannot be detected. There is a depression between fat where spine would normally be felt. Transverse processes cannot be detected. Loin eye muscle is very full with a very thick fat cover.

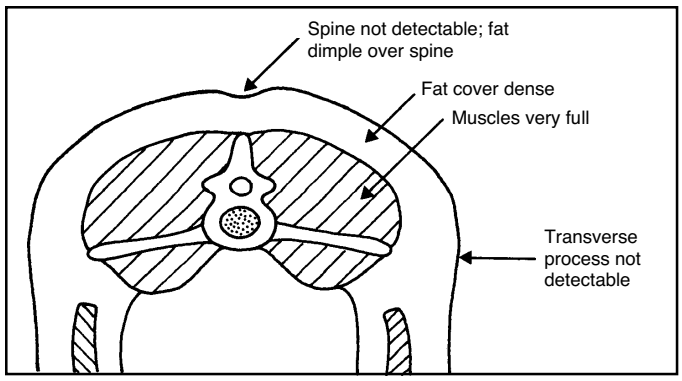


Figure 8.—Condition 5

The system contains everything from emaciated sheep to those that are grossly obese due to overfeeding or being nonproductive. In most typical sheep flocks, over 90 percent of the sheep should have a body condition score of 2, 3, or 4. It is recommended that half scores be used between 2 and 4, giving the following scores: 1, 2, 2.5, 3, 3.5, 4, and 5.

The intermediate half scores are helpful when an animal's condition is not clear. Keep in mind that placing an exact score is not as important as being able to assign a relative score. A body condition score of 3 versus a 3.5 is not such a big deal, but the relative difference between a 2.5 and 4 certainly is of concern.

Other than practical experience, there is little available research comparing condition scores with performance. The majority of the research reported has dealt with the relationship of body condition score at breeding to ovulation rate and subsequent lambing percentage. Generally, the better the body condition score at mating, the higher the ovulation rate and therefore the higher the potential lambing percentage. However, ewes with a condition score greater than 4 at breeding tend to have a higher incidence of barrenness. Ewes with a condition score less than 3 at breeding will be more responsive to the effects of flushing than those with condition scores at 3.0–3.5 at mating.

Two research trials conducted by Oregon State University found that ewe body condition score at lambing had an effect on total pounds of lamb weaned per ewe. Ewes with a body condition score of 3 to 4 at lambing lost fewer offspring and weaned more pounds of lamb than those with a condition score of 2.5 or less.

In one study, ewes with a body condition score of 4 at lambing had a total weight of lamb weaned per ewe that was 82 percent greater than ewes with a body condition score of 2.5. The total weight weaned was 113 pounds versus 62 pounds per ewe. The increase in total weaning weight was due to improved lamb survival and heavier weaning weights.

In the other study, there was a 33 percent difference in total weight of lamb weaned (64 versus 85 pounds per ewe) between ewes with pre-lambing body condition scores of 2.5 to 3.5. This increase in pounds of lamb weaned was primarily due to improved lamb survival for offspring from the ewes with the higher body condition score.

Some suggested (optimum) condition score values for the various stages of the production cycle are:

Production stage	Optimum score
Breeding	3–4
Early–Mid Gestation	2.5–4
Lambing (singles)	3.0–3.5
(twins)	3.5–4
Weaning	2 or higher

The scores suggested above should allow for optimum productivity in highly prolific ewes. On average, a difference of one unit of condition score is equivalent to about 13 percent of the live weight of a ewe at a moderate (3–3.5) body condition score. Thus, a ewe with a maintenance weight of 150 pounds would need to gain approximately 20 pounds to go from a body condition score of 2.5 to 3.5.

Body condition scoring is a subjective way to evaluate the status of a sheep flock—a potential tool for producers to increase production efficiency in their flocks. ■

North American International Livestock Exposition

Sheep Shows Scheduled for Nov. 9- 16 in Louisville, Kentucky
New Rule Added to Junior Wether Sheep Show

North American International Livestock Exposition (NAILE) officials have announced that the Sheep Division shows and sales are schedule for November 9 through 16 at the Kentucky Exposition Center. This year twenty-one sheep breeds will conduct open shows. New to the purebred competition lineup is the Katahdin breed. This show is sponsored by Katahdin Hair Sheep International.

All shows will continue to be video streamed as they happen. Those interested in watching the events can do so for free by simply logging onto the NAILE website at www.livestockexpo.org while the events are underway.

Junior Wether Sheep Show

The Junior Wether Sheep Show is scheduled for Saturday, Nov.ember 10. A new rule concerning drug testing was approved by the NAILE Executive Committee for this event. All entries are subject to random drug testing, and a licensed veterinarian will be inspecting animals for any animal health or ethical violations. Additionally all breed champions and reserve champions will be drug tested. The entry fee for the Junior Wether Sheep Show is increased from $20 to $25.

The Grand and Reserve Wether Show champions will be auctioned at the Sale of Champions on Thursday, Nov. 15. Farm Credit Services of Mid-America is the sponsor of the sheep, swine, meat goat and cattle divisions' junior market shows.

Junior Breeding Sheep Events

In 2011, there were a record-setting 1,706 entries in junior (age 21 and under) purebred contests, making Louisville one of the largest junior sheep exhibitor events in the country. This number broke the entry record of 1,567 set the previous year. From the winners of the nineteen Junior Breeding Sheep Shows, a Supreme Champion Ewe is named and a $1,000 premium is awarded to the winner. Junior Breeding Sheep Shows are held on Sunday, November 11.

This year the Junior Wether Show and Junior Breeding Sheep Showmanship Contests will take place at 5:00 pm on Friday, November 9. The two events will share the main show ring and be run simultaneously.

Lead Line & Scholarship

Another juniors-only event is the Lead Line contest. Conducted in five different age-range classes and one sheep-only costume class, this combination of style show and sheep show is always a crowd pleaser. It will begin at 1 p.m. on Friday, November 9.

Again this year, a scholarship is being offered to those who participate in the Lead and Costume classes and who apply for the award. It's called the "Martha's Award Lead Line Scholarship" and the winner will receive $500 that can be applied to the cost of college, technical school or other post secondary training. Application form, judging criteria and other details can be found online at www.livestockexpo.org. The scholarship is sponsored by Dr. Thomas and Katie Conner.

Wool Show

The NAILE Wool Show returns with nearly $2,500 in premiums. Some classes have been revised. Entry arrival time is Monday, November 12 at 6:30 pm. Fleeces are displayed throughout the show week in the South Wing Lobby.

Entry Information

Catalogs containing show information and rules are available for download on the NAILE website at www.livestockexpo.org. Printed catalogs and entry forms are automatically mailed to those who have participated in the NAILE the past two years. Catalogs are free, and anyone wishing to receive one in print or on CD should contact the NAILE offices at P.O. Box 36367, Louisville, KY 40233-6367, by fax at 502-367-5299, or by e-mail at KFECNAILE@ksfb.ky.gov.

Entry deadline for Sheep Division shows is October 1. Exhibitors may submit entries by mail at any time and on the website beginning September 1.

The 39th Annual NAILE is produced by the Commonwealth of Kentucky at the Kentucky Exposition Center, Louisville, KY, under the direction of the Kentucky State Fair Board. During the Expo's two-week run November 3 through 16, the facility's entire 1,200,000 square feet of climate-controlled exhibit space is used. More than 200,000 visitors and exhibitors attend the event annually. ■

Contestants and judges of the 2012 Ogemaw County FFA Shearing Contest gather after the award ceremony.

Sheep Shearing Champs

The Ogemaw County FFA Sheep Shearing Contest was held August 17, at the Ogemaw County Fair. Thirteen professional sheep shearers and five junior-level shearers participated in this year's contest in West Branch, Michigan.

The Overall Champion for the contest was Alex Moser from Iowa. Alex also earned the Fastest Time award for shearing four sheep in five minutes and 27 seconds. Alex shears throughout the Midwest and has 900 commercial ewes. He serves as the president for the American Sheep Shearers Council.

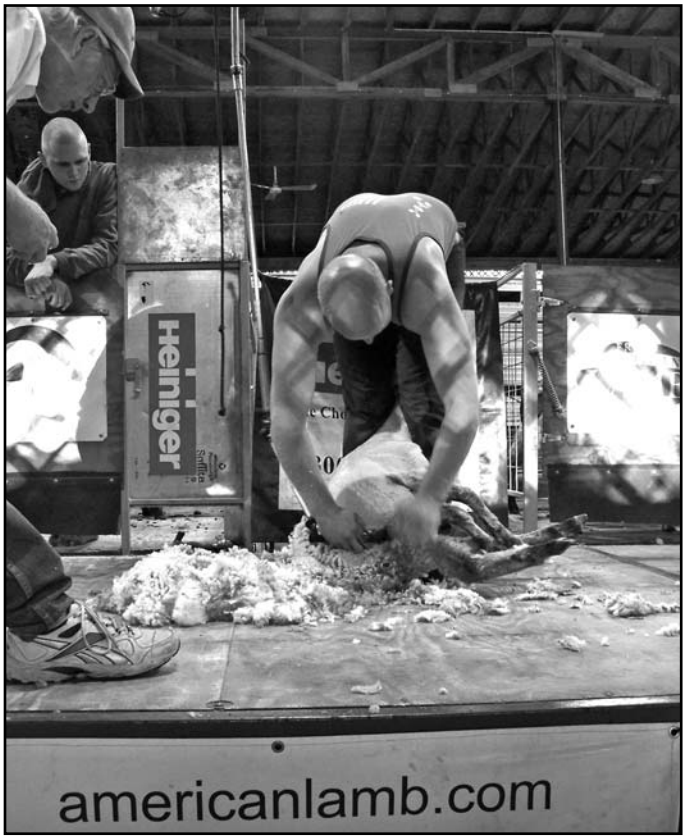
Doug Hoolsema of Michigan earned the Best Shorn Pen and the Michigan Champion awards. Doug enjoys working with people in Michigan, Ohio and Indiana to make friends and see new places. He first started shearing with his dad to shear their 200 sheep and now shears up to 12,000 per year.

Alex Moser, Mark Hoogendorn and Nolan Abel won the Traveling Team award for being the top three Iowa shearers. Between the three men, they shear about 65,000 sheep per year and they all raise sheep on the side.

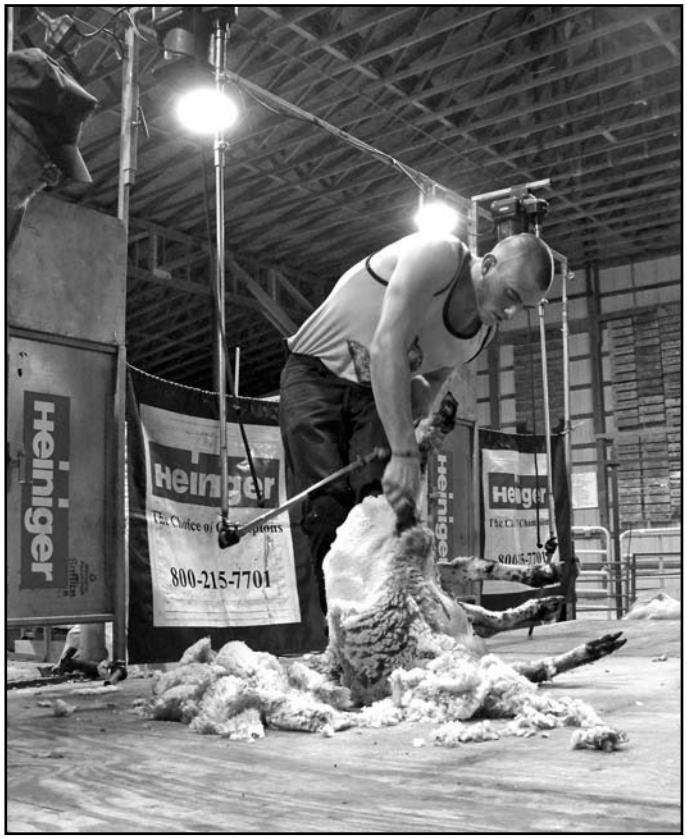
Wes Hyllested of Minnesota won the Junior Champion award. Wes is a student at North Dakota State University and enjoys shearing about 5,000 sheep per year to "push the boundaries and work hard."

FFA members from two local chapters, the Whittemore-Prescott chapter and the Ogemaw Heights chapter, helped sort and handle sheep for the contest. Donations from businesses help support the prizes for shearers, contest judges and both FFA chapters.

Sponsors for the contest include American Sheep Industry; Brindley Pallet Mill; Charles Wangler Tractor Sales; Clemens Dairy; Doug Hoolsema Shearing; Fritz Dairy Farm; Greenstone Farm Credit Services; Heiniger Shearing Equipment; Hilary Gietzen Shearing; Jim Bristol Shearing; Juarez & Juarez Law Office; Michigan Sheep Breeders Association; Mid-States Wool Growers; Miller Construction; Miller Equipment; Miller Feed; North Central Feed & Supply; Ogemaw County Fairboard; Ogemaw Veterinary Clinic; Ralph McWilliams Shearing Equipment; Reetz Dairy, LLC; Riverside Ranch; Wangler & Sons Trucking; West Branch Family Dentistry; West Branch Greenhouse; and Willard's Equipment. ■



Iowa's Alex Moser shears 25,000 sheep every year. He was the Overall Champion in 2012 contest and earned the Fastest Time award.



Wes Hyllested earned the Junior Champion award at the 2012 Ogemaw County FFA Shearing Contest.

Selective grazing and aversion to olive and grape leaves achieved in goats and sheep

By Universitat Autònoma de Barcelona (Spain)

Researchers from the Research Group on Ruminants led by Elena Albanell, lecturer in Animal and Food Science, have successfully achieved to prevent sheep and goats from chewing on the young leaves of olive trees and grapevines when grazing. By using the natural mechanism of conditioned taste aversion, researchers redirected the food preferences of ruminants, making them more willing to eliminate undesirable plants from these types of pastures, and thereby reducing the use of pesticides and farming equipment.

The cultivation of woody plants (olive trees, grapevines, fruit trees, etc.) take up 27% of the cultivated land in Spain. This cultivation system permits plants to grow around the trees or vines, but in order to prevent these plants from becoming a problem for the cultivations, they must be controlled with herbicides and/or farming equipment. In the long term, these practices can cause environmental problems due to the residues they leave behind or to the compactation of soil produced by farming equipment. A more environmentally sustainable and respectful system would be to control these undesired plants with the grazing of sheep and goats. This system would reduce the use of herbicides and fertilisers, given that the droppings of these animals provide many nutrients for the soil and thus could be used as an agricultural resource, as well as favour a better integration between the agricultural and farming sectors.

The negative side to grazing in these pastures are the damages caused by the animals, since sheep and goats are also free to eat leaves and soft shoots and thus affect the amount and quality of the crops. That is why a perfect solution would be the ability to guarantee farmers that these animals pose no threat to their lands and crops while grazing. This was the objective of researchers at the UAB Faculty of Veterinary Medicine when they proposed the use of conditioned taste aversion in the aim of redirecting the food preferences of these ruminants. A pilot plan prepared by the UAB Service for Experimental Farm and Fields revealed that sheep and goats can be trained not to not eat olive leaves - a food these small ruminants particularly like. This is especially true with goats, since their "browsing" nature leads them to eat shrubs and trees.

Conditioned taste aversion (CTA) is a natural defensive mechanism animals develop when learning which foods are healthy and which are potentially toxic. To achieve this aversion, researchers fed olive leaves and soft shoots to individual animals which had never tasted this food before, and later administered lithium chloride. Lithium chloride is used in humans to treat mental conditions and in animals with the aim of modifying their eating habits. It simulates the mechanism action of toxic components found in plants, provoking vomits and generating a sensation of indigestion which the animal associates with the new food it has eaten.

The results obtained are very encouraging. With one dosis of lithium chloride, the sheep and goats rejected the olive leaves from the first day and their behaviour differed greatly from the animals in the control group. The aversion lasted over four months. Following this line of research and thanks to the concession of a research project under the "National R&D&I Plan," the project is effectively achieving its goals under commercial conditions, with both animals acquiring aversion for olive leaves and sheep learning to dislike grapevines. ■

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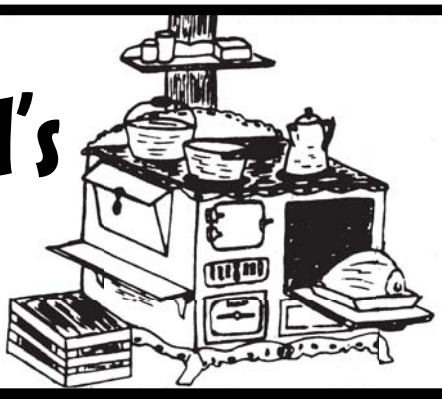
I certify that the statements made by me above are correct and complete. –Cat Urbigkit, Editor

The Shepherd's Kitchen



Lamb Pies

By Sue Arambel
Midland Ranch
Boulder, Wyoming

I did not grow up preparing or even eating lamb. That all changed when I married a third-generation Wyoming sheep rancher of Basque descent.

Over time, with a little trial and error, (and help from my mother-in-law), I found lamb to be delicious, easy to prepare and very versatile. This versatility is important because our ranch is 55-75 miles from the nearest grocery stores, and many times I have had to substitute or make do with ingredients that I have on hand. This led me to my first version of lamb pies. Years later, I received another culinary challenge: I found out I was allergic to eggs and dairy, and my son was highly allergic to wheat. Food allergies and intolerances affect one in 10 Americans, according to a May 2010 report published in the "Journal of the American Medical Association." However, lamb is very hypoallergenic and is used as a protein source when other proteins may lead to allergic reactions. Lamb is often used in an elimination diet (where you eliminate potential allergens from your diet – the most common being eggs, dairy, peanuts, shellfish, soy, fish, wheat and gluten) and eat only hypoallergenic foods, such as lamb, pears, apples, rice, vegetables and beans.

I have included my recipes for lamb pies: the original, which is always a favorite, the wheat- free version, and the egg-, dairy-, wheat-free version, which are good if you have allergies or not! (If you have celiac disease, please make sure the products you are using are certified gluten free – name brands change from country to country).

Enjoy,
Sue Arambel

Original Lamb Pies

1 pound ground lamb
1 6-ounce can tomato paste
1 packet brown gravy mix
1 cup hot water
2 cloves of garlic, minced
2 Tablespoons Worcestershire sauce
1 tube Grand Biscuits

Brown the lamb until cooked through. Add tomato paste, brown gravy mix, garlic, water and Worcestershire sauce. Let simmer until it is thick and the lamb is completely cooked. (You may have to add a little more water, but you want mixture to be thick).

On a flour-dusted counter, roll each biscuit out into a 6" circle. Put a heaping ¼ cup of meat mixture on one side of each biscuit. Fold the biscuit over to form a half moon and seal edges by folding edges together. Poke a fork hole in top of each pie and place on greased cookie sheet. (I find it is easier to fill these while on the cookie sheet, so you don't have to move them).

Bake according to Grand Biscuit tube – until golden brown.

Serve with honey mustard.

Honey mustard sauce
Mix equal parts honey and yellow mustard – drizzle or dip the pies with this sauce.

Wheat-, Egg-, Dairy-Free Lamb Pie

Make meat mixture as in Wheat Free lamb pie – instead of topping with Gluten Free Bisquick biscuits – top with Garlic Mashed potatoes – recipe to follow.

Garlic Mashed Potatoes
Roast a whole head of garlic; cut off top, drizzle with olive oil and wrap in foil and bake at 400 degrees for about 20 minutes – until cloves are soft.

Meanwhile, wash and cut up about 6 Yukon Gold potatoes (if they are small, you may need 8) into small pieces, leaving skin on, and boil until tender.

BEFORE DRAINING POTATOES – save 1 cup of boiling water.

Melt 2 tablespoons Earth Balance Buttery Sticks (these are non-dairy) and 2 Tablespoons extra virgin olive oil, add all the soft roasted garlic cloves (just squeeze out of bulb) and mash the potatoes in this mixture. Add the reserved water until you get the consistency of the potatoes you want. Salt and pepper to taste.

Wheat-Free Lamb Pie

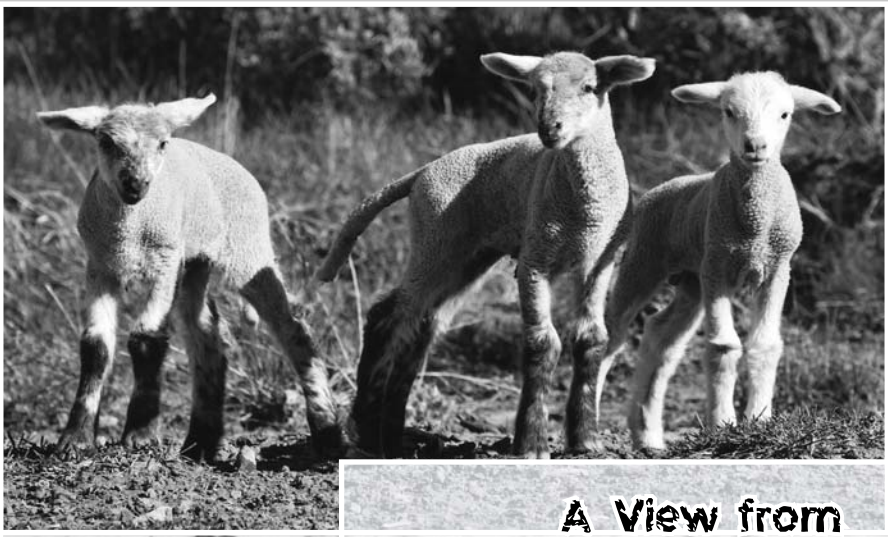
(same flavors as above – different technique)

1 pound ground lamb
1 6-oz. can tomato paste
2 Tablespoons Lea and Perrine Worcestershire sauce (this brand in the United States is wheat-free)
2 cloves garlic minced

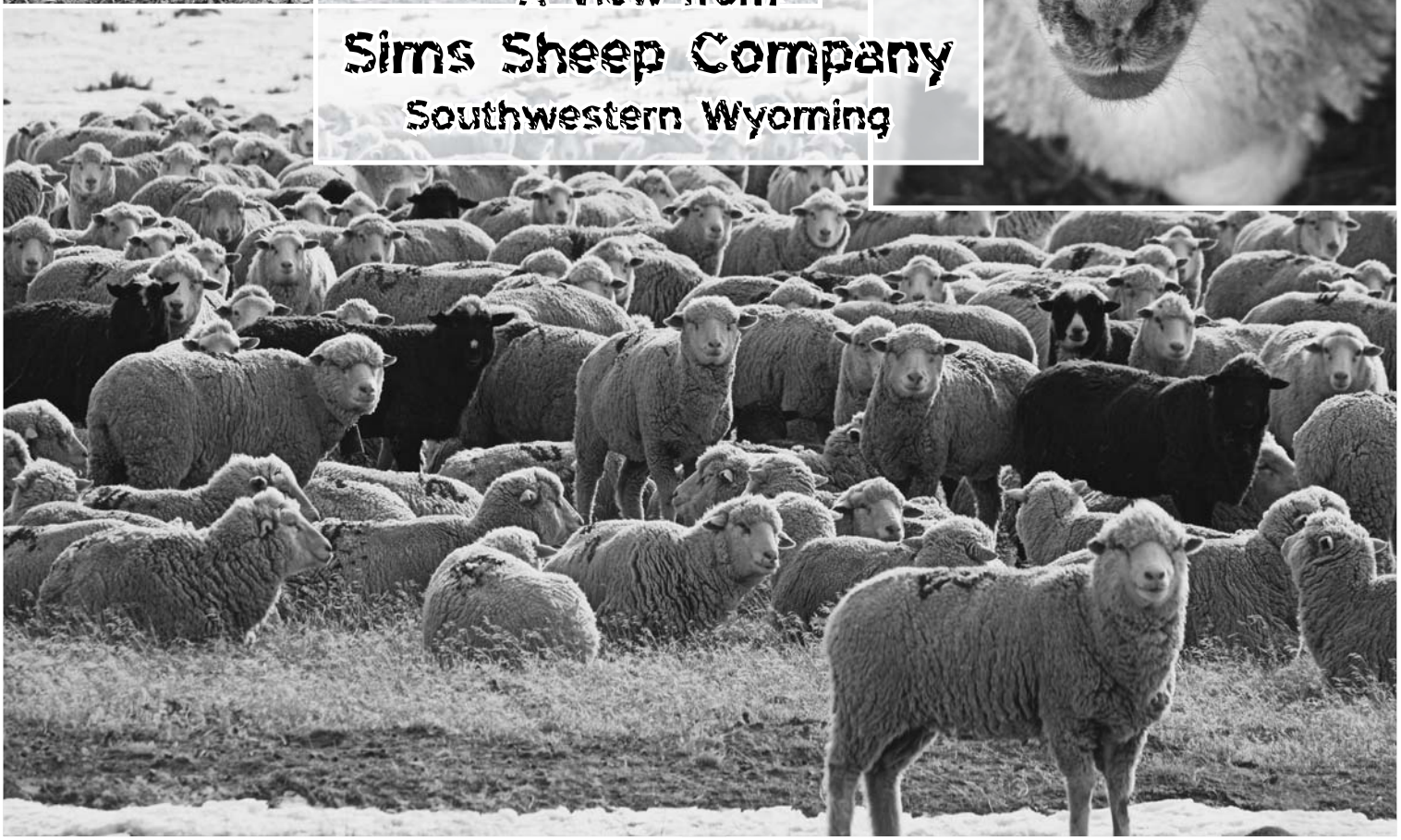
Add ¼ cup Swanson Beef broth from the box – (canned may contain gluten – please check if you are on a gluten-free diet) or more if it is too thick Gluten-Free Bisquick (will use eggs and milk)

Brown lamb – add tomato paste, Worcestershire, beef broth and garlic . Cook until lamb in cooked through. Place lamb in lightly greased (spray with cooking spray) pie pan.

Make Gluten-Free Bisquick mix biscuits according to package directions and spoon on top of meat mixture. Bake according to biscuits directions on box until lightly browned (gluten-free baked goods generally don't get as brown as regular baked goods.)



A View from
Sims Sheep Company
Southwestern Wyoming



The Sims Sheep Company LLC is a range sheep outfit that runs in the high Wyoming desert in the winter, and the high Uinta Mountains of Utah in the summer.
Photos by Lacee Sims, Leather-N-Lace Photography, Evanston Wyoming.
www.Leather-N-LacePhotography.com

BREEDER LISTINGS

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The number and placement of the stars after the breeder's listing indicate the categories which he usually will have stock available for you to purchase.

BLACK WELSH MOUNTAIN

E Y R C

American Black Welsh Mountain Sheep Association, E. McGuire, Secy/Treas., P.O. Box 534, Paonia, CO 81428-0534. E-mail list: blackwelsh-subscribe@egroups.com.

Desert Weyr, LLC, Oogie McGuire, 16870 Garvin Mesa Rd., Paonia, CO 81428-9793. Ph (970)527-3573, website: www.desertweyr.com, email: sales@desertweyr.com - ★ ★ -

CVM / ROMELDALES

E Y R C

National CVM Conservancy, Inc., 252 Frosty Valley Rd., Danville, PA 17821. Ph. (570) 490-4759, website: www.nationalcvmconservancy.org.

BORDER CHEVIOTS

E Y R C

Bo-Peep Cheviots, Dick & Flo Getzelman, 9360 County Line Rd., Hinckley, IL 60520. Ph. (815) 286-3252. ★ ★ ★ -

CLUN FORESTS

E Y R C

North American Clun Forest Assn., E. K. Reedy, Secy., 21727 Randall Dr., Houston, MN 55943. Ph. (507) 864-7585, website: www.clunforestsheep.org, e-mail: bramble@acegroup.cc.

Sugar Creek Farm, Walt Williams, 2295 Ocean Ave., Wilton, IA 52778. Ph (563)732-4476, email: sugarcreekcluns@gmail.com. ★ ★ ★ -

Touchstone Farm, Alan Zuschlag, 140 Touchstone Lane, Amissville, VA 20106. Ph. (540) 270-8150, website: www.touchstonefarm.org, e-mail: info@touchstonefarm.org. ★ ★ ★ ★

COLUMBIAS

E Y R C

Barr Farms Columbias, Julie Barr, 15382 Waterman Rd., DeKalb, IL 60115. Ph. (815) 758-5414, e-mail: barrfarms1@frontier.com. ★ ★ ★ ★

COOPWORTH

E Y R C

American Coopworth Registry, Pam Child, Sec., 82 Sproul Hill Rd., Bristol, ME 04529-3211. Ph. (207) 563-5851, website: www.americancoopworthregistry.org.

Cobun Creek Farm, Susan Elkin, 408 Cobun Creek Rd., Morgantown, WV 26508. Ph. (304) 292-1907, (Registered CSSNA). ★ ★ ★ -.

Owens Farm, Caroline Owens, 2611 Mile Post Rd., Sunbury, PA 17801. Ph (570)286-5309, website: www.owensfarm.com, email: info@owensfarm.com ★ ★ - -

Sudan Farm, Dan & Susie Wilson, 32285 S. Kropf Rd., Canby, OR 97013. Ph. (503) 651-5262, website: www.oregonwool.com, e-mail: susdan@web-ster.com (OPP neg., SFCP certified, Export Program. ★ ★ ★ ★

Wild 'n' Woolly Farm Wools, Hope 'n' Bev Yankey, 229 Hillside Drive, Mathias, WV 26812. Ph. (304) 897-6820. ★ ★ ★ -

CORMO

E Y R C

Wooly Booly Farm, Mike and Barb Janay, 12350 Barbee Rd., Bristow, VA 20136. Ph. (703) 361-0162, website: www.woolybooly cormos.com. ★ ★ ★ -

CORRIEDALES

E Y R C

American Corriedale Association, Marcia Craig, Sec'y., P.O. Box 391, Clay City, IL 62824. Ph. (618) 676-1046, website: www.americancorriedale.com.

Wildwind Corriedales, Grover/Quay, 130 Jones Rd., Wetumpka, AL 36092-7121. Ph. (334) 514-0495, e-mail: egwildwind@aol.com. ★ ★ ★ -

COTSWOLD

E Y R C

Far Out Farm, Jane & Kim Caulfield, 4626 Delina Rd., Cornersville, TN 37047-5231. Ph. (931) 293-4466, e-mail: jcaulfield371@mac.com. ★ ★ ★ -

DORPER

E Y R C

American Dorper Sheep Breeders Society, Ronda Sparks, registrar, P.O. Box 259, Hallsville, MO 65255-0259. Ph. (573) 696-2550, fax: (573) 696-2030, website: www.dorper.org.

Crane Creek Dorpers and White Dorpers, Stephanie Mitcham, 3061 160th St., Sumner, IA 50674. Ph. (563) 578-5665, Fax (321) 248-0107 e-mail: sam@netins.net, www.ccdorpers.com. ★ ★ ★ ★

Kentucky Grassland Dorpers and White Dorpers, Philip Padgett, P.O. Box 2189, Elizabethtown, KY 42702-2189. Ph. (270) 765-9067. ★ ★ ★ ★

DORPER, WHITE

E Y R C

Crane Creek White Dorpers, Stephanie Mitcham, 3061 160th St., Sumner, IA 50674. Ph. (563) 578-5665, Fax (321) 248-0170, e-mail: sam@netins.net, website: www.ccdorpers.com. ★ ★ ★ ★

Glenn Land Farm, Wes Patton, 6352 County Road 27, Orland, CA 95963. Ph. (530) 514-7250, website: www.glennlandfarm.com, e-mail: wespatton@glennlandfarm.com. ★ ★ ★ ★

White Clover Sheep Farm, Ulf Kintzel, 683 Bagley Road, Rushville, NY 14544. Ph. (585) 554-3313, e-mail: ulf@whitecloversheepfarm.com, website: www.whitecloversheepfarm.com. ★ ★ - ★

POLLED DORSETS

E Y R C

Blaker Ridge Farm, Janet & Michael Mawhinney, 408 Blaker Ridge Rd., Waynesburg, PA 15370. Ph. (724) 966-2577. - - ★ -

Chinook Acres, Cathy Bennett, 3050 E. Union Rd., Jefferson, OH 44047-8678. Ph. (440) 858-9433. ★ ★ ★ ★

Continental Dorset Club Inc., (Horned & Polled), Debra Hopkins, Exec. Secy., P.O. Box 506, North Scituate, RI 02857. Ph. (401) 647-4676, fax: (401) 647-4679, e-mail: cdcdorset@cox.net, website: www.dorsets.homestead.com.

Hunter Dorsets, Jeff Hunter, 9102 E. 325 N., Lafayette, IN 47905. Ph. (765) 563-1003 (Office, Weekdays), (765) 426-3099 (Cell), website: www.hunterdorsets.com. (Accelerated lambing, OPP & footrot free since 1988)

Rider's Dorsets, Joyce Rider, 1142 Lilac St., Murray, IA 50174 Ph. (641)340-0330 e-mail: ridercst@hotmail.com - ★ ★ -

FINNSHEEP

E Y R C

Point of View Farm, Cara Leigh and Sten Wilson, P.O. Box 535, Bangall, NY 12506. Ph (845) 868-4140, website: www.pointofviewfarm.net, email: finnsheep@me.com. ★ ★ ★ ★

The Ark, Dale & Martha Livermore, 1094 Allens Mills Road, Brookville, PA 15825 Ph. (814) 328-2720 or (814) 591-0185, e-mail: TheARK5@windstream.net. ★ ★ ★ ★

Trimburfield Finnsheep, Eric & Heidi Trimbur, 58 Bitting Road, Alburtis, PA 18011. Ph. (610) 845-3607, website: www.trimburfieldfinnsheep.com, e-mail: htrimbur@dejazzd.com. ★ ★ ★ ★

GOTLAND

E Y R C

Glen Oak Gotlands, Martin & Joy Dally, 34503 Meridian Rd., Lebanon, OR 97355. Ph. (541) 258-2692, website: www.toprams.com, e-mail: supersireltd@yahoo.com. ★ ★ ★ -

HAMPSHIRES

E Y R C

Englert Hampshires, Edna T. Englert, 114 Bridger Fromberg Rd., Bridger, MT 59014. Ph. (406) 662-3236. ★ ★ ★ ★

Pleasant Acres Farm, Joe and Beth Clarke, 306 Busse Rd., Marengo, IL 60152. Ph. (815) 943-0253. (VSP, OPP & CL neg., B. Ovis neg., Footrot free.) ★ ★ ★ ★

ICELANDIC

E Y R C

Fence Row Farm, Dave & Marty Favre, 3416 N. Bradley Rd., Charlotte, MI 48813. Ph. (517) 726-1328, website: www.fencerowfarm.com, e-mail: davidmartyfavre@gmail.com. ★ ★ ★ -

Olness Icelandics, Alan Olness, 45037 266th St., Monroe, SD 57047-6514. Ph. (605) 297-0392, e-mail: olness@IW.net. ★ ★ ★ -

Red Brick Road Farm, Terri Carlson, 1494 Red Brick Road, Dixon, IL 61021. Ph. (815) 288-5886, website: www.RedBrickRoadFarm.com. ★ ★ ★ -

Tamarack Farm, Janice Jenkins/Michael Arthur, P.O. Box 97, 198 Immel Rd., Spring Mills, PA 16875. Ph. (814) 422-8041, website: www.tamarackfarmsheep.com, email: shepherd@tamarackfarmsheep.com (OPP/CLA neg., footrot free). ★ ★ ★ -

The Creek's Edge, Alan Leighton, 15331 Dawkins Rd., Rapid City, SD 57703. Ph. (605) 393-1972, email: ajleighton@gwtc.net, website: www.thecreeksedge.com. ★ ★ ★ -

Trinity Farm, Margaret Flowers, PO Box 372, 2741 Fry Rd., Aurora, NY 13026. Ph (315)246-1178, email: mflowers@wells.edu website: www.trinityfarm.net. ★ ★ ★ -

ILE DE FRANCE

E Y R C

Crane Creek Ile de France, Stephanie Mitcham, 3061 160th St., Sumner IA 50674. Ph. (563) 578-5665, Fax (321) 248-0170, e-mail: sam@netins.net http://www.netins.net/showcase/sam/ccidf.htm. - ★ ★ -

JACOBS

E Y R C

Craft's At Bluffton, Marianne Craft Norton, 2572 Village Rd., Decorah, IA 52101. Ph. (563) 735-5533, www.craft'satbluffton.com. ★ ★ ★ -

4 Horn Farm, Carl Fosbrink, 2447 N. 1000 E, Seymour, IN 47274. Ph. (812) 522-3048, website: www.4hornfarm.com. ★ ★ ★ -

Jacob Sheep Breeders Association, Mickey Ramirez, 2540 W. Mulberry St., Fort Collins, CO 80521-3110. Ph. (970) 491-9750, website: www.jsba.org.

Meat & Beauty, David C. Rader, 1038 Township Road 984, Ashland, OH 44805. Ph. (419) 289-0750. ★ ★ ★ -

KARAKULS

E Y R C

American Karakul Sheep Registry, Rey Perera Registrar, 11500 Hwy. 5, Boonville, MO 65233. Ph. (660) 838-6340, website: www.karakulsheep.com, email: aksr@iland.net.

Pine Lane Farm Karakuls, Letty Klein, 6881 N. Sprinkle Rd., Kalamazoo, MI 49004. Ph. (269) 381-0980, website: www.plfkarakuls.com (VSFCP certified free). ★ ★ ★ -

KATAHDIN HAIR SHEEP

E Y R C

Cedar Ridge Sheepfold, 6751 S Locust Grove Rd., Hardinsburg, IN 47125. Ph (812)620-0385, email: crsfarm.alan@gmail.com. ★ ★ ★ -

Dosch's TMD Katahdins, Tom & Maria Dosch, 10623 383rd Ave., P.O. Box 517, Frederick, SD 57441. Ph. (605) 329-2478, website: www.doschkatahdins.com, e-mail: ewemad@nvc.net. ★ ★ ★ ★

Hound River Farm, Milledge Newton, 5550 Skipper Bridge Rd., Hahira, GA 31632. Ph. (229) 794-3456, website: houndriverfarm.com. ★ ★ ★ ★

Katahdin Hair Sheep International, P.O. Box 778B, Fayetteville, AR 72702. Ph. (479) 444-8441, website: www.katahdins.org (Write/call for info./breeder list)

Mill Branch Farm, Linda O'Brien, 5900 Mill Branch Rd., Huntingtown, MD 20639. Ph. (301) 855-0716, e-mail: lmobrien@earthlink.net. ★ ★ ★ -

Misty Oaks Farm, Jeff & Kathy Bielek, 1130 Kimber Rd., Wooster, OH 44691. Ph. (330) 264-5281, e-mail: mistyoaksfarm@gmail.com. ★ ★ ★ -

KIKO GOATS

E Y R C

American Kiko Goat Association, Ph. (254) 423-5914, website: www.kikogoats.com. The official registry of Kiko breeders and owners in North America.

B bar W Kiko Goats, Wes & Bev Pinneo, 29585 SE 140 Road, Kincaid KS 66039. Ph. (785) 204-2353, email: bbarw@hotmail.com, website: www.bbarwkikos.com. Purebreds and percentages.

Kokiri Kikos, 82224 Kay Road, Wakita OK 73771. Ph. (580) 542-4132, email: kikofaerie@pldi.net.

MJ Ironwater Acres, Jean Gullion-Mike Guffey, 14551 CR 7130, Moody MO 65777-9736. Ph. (417) 284-9311, e-mail: mjikikos@aol.com, website: www.mjironwateracres.com.

LEICESTERS, BLUEFACED

E Y R C

Pitchfork Ranch, Margaret Van Camp, 4190 W Cook Rd., Swartz Creek, MI 48473. Ph. (810) 655-4091, website: www.pitchfork.org, e-mail: pitchfork@usol.com. ★ ★ ★ -

Tumble Creek Farm, Robina Koenig, Bend, OR 97701-8706. Ph. (541) 350-9205, e-mail: tumblecreekfarm@gmail.com. ★ ★ ★ -

LEICESTERS, BORDER

E Y R C

Marsh Creek Crossing, Ray & Margo Hanson, 4333 County Highway 29, Twin Valley, MN 56584. Ph (218)584-5546, website: marshcreek-crossing.com, email: rmhanson@arvig.net (OPP neg., SFCP certified, footrot free, NSIP). - ★ ★ ★

North American Border Leicester Association, Associated Sheep Registries, Karey Claghorn, 15603 173rd Ave., Milo, IA 50166. For information, Diana Anson, e-mail: dianaanson@bellsouth.net, website: nabla sheep.com.

Spring Creek Farm, Judy & John Lewman, 6250 Game Farm Rd., Minnetrista, MN 55364. Ph. (952) 472-4524, e-mail: lewman@frontier.com, website:springcreekleicesters.com (CL & Footrot free, OPP neg., SFCP certified free, NSIP) ★ ★ ★ -

Sudan Farm, Dan & Susie Wilson, 32285 S. Kropf Rd., Canby, OR 97013. Ph. (503) 651-5262, website: www.oregonwool.com, e-mai: susdan@web-ster.com (OPP neg., SFCP certi fied, Export Program). ★ ★ ★ ★

MONTADALES

E Y R C

Montadale Sheep Breeders Ass'n., Mildred Brown Moore, Secy., 3321 Piney Creek Dr., Elkhorn, NE 68022-4422. Ph. (402) 884-7555, www.montadales.com, e-mail: montadale@cox.net.

MULE SHEEP

E Y R C

Littledale Farm, Graham & Margaret Phillipson, 21925 County Hwy. ZZ, Richland Center, WI 53581. Ph. (608) 647-7118, website: www.littledalefarm.com, e-mail: littledalefarm@countryspeed.com. - ★ - ★

NORTH COUNTRY CHEVIOTS

E Y R C

Littledale Farm, Graham & Margaret Phillipson, 21925 County Hwy. ZZ, Richland Center, WI 53581. Ph. (608) 647-7118, website: www.littledalefarm.com, e-mail: littledalefarm@countryspeed.com. ★ ★ ★ ★

Thomas Farms, Don & Sandy Thomas, 10506 S. 875 E., Walkerton, IN 46574. Ph. (574) 586-3778. ★ ★ ★ -

Triple A Ranch, Alton & Kathy Munkelwitz, 1595 395th St., Isle, MN 56342. Ph. (320) 676-3359, e-mail: barhawk555@citlink.net. ★ ★ ★ ★

OXFORDS

E Y R C

American Oxford Down Record Ass'n., Mary Blome, Secy., 1960 E. 2100 N Rd., Stonington, IL 62567. Ph. (217) 325-3515.

POLYPAYS

E Y R C

Lambshire Polypays, John Anderson, 10131 Munson Rd., Shreve, OH 44676. Ph. (330) 749-9053, e-mail: johnwallaceanderson@gmail.com (OPP negative, accelerated lambing, NSIP). ★ ★ ★ ★

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E Y R C

North American Romanov Sheep Association, Don Kirts, Secy., P.O. Box 1126, Pataskala, OH 43062-1126. Ph. (740) 927-3098, email: admin@narsa-us.com, website: www.narsa-us.com.

RPM Farm, Janice and Don Kirts, 5990 Beecher Rd., Granville, OH 43023. Ph. (740) 927-3098, email: admin@rpmfarm.com, website: www.rpmfarm.com. ★ ★ ★ -

ROMNEYS

E Y R C

Far Out Farm, Jane & Kim Caulfield, 4626 Delina Rd., Cornersville, TN 37047-5231. Ph. (931) 293-4466, e-mail: jcaulfield371@mac.com (White & Colored Romney). ★ ★ ★ -

Pitchfork Ranch, Cindy Cieciwa, 4190 W Cook Rd., Swartz Creek, MI 48473. Ph. (810) 655-4091, website: www.pitchfork.org, e-mail: pitchfork@usol.com. ★ ★ ★ -

Southern Oregon Romneys, JoAnn Mast, 58221 Lee Valley Rd., Coquille, OR 97423. Ph. (541) 572-3094, e-mail: soromney@wildblue.net. ★ ★ ★ -

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Littledale Farm, Graham & Margaret Phillipson, 21925 County Hwy. ZZ, Richland Center, WI 53581. Ph. (608) 647-7118, website: www.littledalefarm.com, e-mail: littledalefarm@countryspeed.com. ★ ★ ★ ★

Mount Saviour Monastery, 231 Monastery Rd., Pine City, NY 14871-9785. Ph. (607) 734-1688, e-mail: info@msaviour.org, website: www.msaviour.org. ★ ★ - ★

SHETLAND

E Y R C

North American Shetland Sheepbreeders Association (NASSA), P.O. Box 51, 222 Main Street, Milo, IA 50166. Ph. (641) 942-6402, website: www.shetland-sheep.org..

Petticoat Hill Farm, Karen Gaietto, 5415 S. Township Road 151, Tiffin, OH 44883-8968. Ph. (419) 447-8539, e-mail: kgaietto@toast.net. ★ ★ ★ -

Shepherdwoods Farm, Chris & Alan Greene, 3410 E. 2375 Rd., Marseilles, IL 61341. Ph. (815) 496-2628, website: www.shepherd woodsfarm.com, email: christinegreene52@gmail.com. ★ ★ ★ -

Trinity Farm, Margaret Flowers, PO Box 372, 2741 Fry Rd., Aurora, NY 13026. Ph (315) 246-1178, email: mflowers@wells.edu website: www.trinityfarm.net ★ ★ ★ -

Twin Springs Farm, Bill & Sandy Truckner, 100 Twin Springs Lane, Avonmore, PA 15618. Ph. (724) 697-4930, e-mail: info@sheepandcattle.com, website: http://sheepandcattle.com. ★ ★ ★ -

SHROPSHIRES

E Y R C

American Shropshire Registry Association, Inc., Becky Peterson, Secy., 41 Bell Rd., Leyden, MA 01337. Ph. (413) 624-9652, website: www.shropshires.org, e-mail: shropsec@hotmail.com.

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Askin Ranch, Kirk Askin, 23 Pilgrim Cr. Rd., Broadus, MT 59317. PH (406)427-5009, email: askin@wbaccess.net - - ★ -

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E Y R C

North American Babydoll Southdown Sheep Association and Registry. Ph. (641) 942-6402, email: nabssar@yahoo.com, website: www.nabssar.org.

RPM Farm, Janice and Don Kirts, 5990 Beecher Rd., Granville, OH 43023. Ph. (740) 927-3098, email: admin@rpmfarm.com, website: www.rpmfarm.com.

SUFFOLKS

E Y R C

Baglien Suffolks, James Baglien & Sons, 928 NW Camellia Dr., Corvallis, OR 97330. Ph. (541) 753-4812, website: www.thicksheep.com. ★ ★ ★ -

Bonnells Suffolks, Ken & Bonnie Bonnell, 14071 State Route 347, Marysville, OH 43040. Ph. (937) 644-2674, e-mail: bonnells.suffolks@gmail.com. Certified Scrapie Free Flock. ★ ★ ★ ★

Kimm Suffolks, Bob Kimm, 1636 W. Avenue, Dysart, IA 52224. Ph. (319) 476-3875, cell (319) 290-8997, e-mail: bbkimm@fctc.coop, website: www.breedingsheeppage.com/kimm. ★ ★ ★ -

Mohawk Valley Suffolks, Jean Walsh, 228 Main Street, Jordanville, NY 13361. Ph. (315) 858-6042, email: jtw_42@hotmail.com. Specializing in old-style Suffolks. ★ ★ ★ -

Oxford Farm, Dr. Edith J. Hapke, 75 Ox Creek Rd., Weaverville, NC 28787. Ph. (704) 658-2500. Registered, majority RR genotype. ★ ★ ★ -

United Suffolk Sheep Association, Amanda Everts, Secy., P.O. Box 995, Ottumwa, IA 52501. Ph (641)684-5291 (office), (641)680-6509 (cell), email: info@u-s-s-a.org, website: www.u-s-s-a.org.

Wiford Suffolks, Sam & Pat Wiford, 19485 Santa Fe New Knoxville Rd., Wapakoneta, OH 45895-8706. Ph. (937) 596-5229, website: www.wiford-suffolks.com, e-mail: sampat@watchtv.net. Scrapie-free flock. ★ ★ ★ -

TARGHEES

E Y R C

US Targhees Sheep Association, Mardy Rutledge, Secy., 7009 Via Campanile Ave., Las Vegas, NV 89131. Ph (702)292-5715, email: ustargheesheep@gmail.com website: www.ustargheesheep.org

TEXELS

E Y R C

Fisher Texels, Eugene & Niki Fisher, 2275 N. Grays Creek Rd., Indian Valley, ID 83632. Ph. (208) 256-4426, e-mail: enfisher@ctcweb.net, website: www.fishertexels.com. ★ ★ ★ -

Silvara Valley Farm, Fred & Tammy Hemmerly, 7758 Route 367, Laceyville, PA 18623. Ph. (570) 869-2692, email: silvaravalleyfarm@earthlink.net, website: silvaravalleyfarm.com. ★ ★ ★ -

Silverdale Farms, Tom & Karin Watson, 32450 Baxter Rd., Hermiston, OR 97838. Ph. (541) 567-5905, e-mail: KarinLW@aol.com. - - ★ ★

Texel Sheep Breeders Society, Niki Fisher, Secretary, Ph (570) 869-2692, email: usatexels@gmail.com, website: www.usatexels.org.

WENSLEYDALE

E Y R C

Carlson Farm, Sherry Carlson, 4589 Fruitland Rd., Loma Rica, CA 95901. Ph. (530)743-5262, www.wensleydalesheep.com, e-mail: carlsonfarm@yahoo.com ★ ★ ★ -

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A GUIDE FOR SHEEP AND FARM LIFE

THE SHEPHERD

GOT A COVER SHOT?

We enjoy receiving submissions for our consideration for the cover of The Shepherd. These images should be vertical, with room at the top right corner for the magazine's banner. Please provide a sentence we can use as a caption, describing the breed included, the owner, and location where the image was taken. Don't forget to include your name and mailing address so we can send your complimentary copies should we select your image. We only use high-resolution digital images, so please be sure your image is saved as a JPG at least 300 dpi. Email submissions to:

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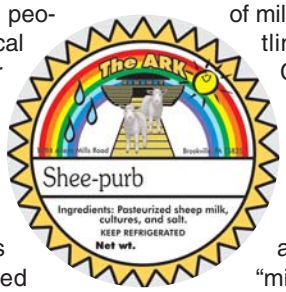
FOCUS

The Ark Farm

Dale & Martha Livermore
1094 Allens Mills Road
Brookville, Pa. 15825

Sheep are versatile animals. Their value is often underestimated in America. The American culture, for the most part, has lost sight of the self-sustaining farm farm-ette. Most people do not seem to be interested in healthy, physical labor. For those who desire to take care of their physical bodies, grow food to sustain their own families and supply additional income, consideration should be given to the acquisition of sheep – carefully selecting the breed or breeds which will help to accomplish attainable goals .



Upon retirement from our respective occupations (Dale a minister – MDIV, and Martha a registered nurse and special education teacher), it was decided that we would need to find means to sustain ourselves and to add to our finances. We had concern regarding the effect on our bodies of the hormones that are fed livestock and the food products which contain unidentified items. Since we had both grown up on dairy farms, a farm seemed to be the answer.

Raising vegetables and grains for our animals would just take discipline and hard work. Research on the food value in different meat products revealed the outstanding quality of sheep meat compared to other meat sources. Sheep were smaller to handle then cows; could yield a smaller quantity of meat for our family at a time and could be pastured and housed somewhat differently than cows; so the choice was “sheep.” But what about our dairy needs?

Most people acknowledge the sheep to be a renewable source of wool and meat, but few consider the ewe as a source of milk dairy products. Again research revealed some startling facts. Quoted from Ricki Caroll’s book Home Cheese Making; sheep milk has 20.4 total solids compared to goat milk which has 12.5 total solids and to cow milk which has 13 total solids. This means that sheep milk has a higher content of food value than either goat or cow milk.

WOW! Knock my socks off! I had been raised on a dairy farm but never knew that sheep could be “milked.” Our self-sustaining farm was becoming more fulfilling. Sheep here we come! Dale and I learned to shear our sheep, spin the wool (after cleaning and carding), and even to weave on a loom. Martha knits items and enjoys seeing the items from fleece to product. Next we decided to milk our sheep and try making some cheese.

To my amazement I discovered an organization promoting dairy sheep. The organization sponsored conferences once a year open to persons interested in dairy and cheese operations/ vocations. Quickly plans were made to attend. Sheep can be milked once or twice a day. Milk production is usually higher on the days with less light (hence Jan./ Feb.). Some dairy persons take lambs from ewe on day 1-2-3 after lambing, while some

Continued on page 46

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wait until lamb is a month to two months old. Breeds of sheep differ in the number of days of lactation and the quantity and quality of milk.

First I milked seven or eight ewes by hand and we greatly enjoyed the milk. I found that ½ to 1 cup per day noticeably curtailed my appetite. Our breed of sheep milked 90 to 120 days after lambing which seemed good to me. I also chose to only milk once a day and decided the babies should have mama for six weeks to two months. I continued to milk by hand until we had 17 milking ewes; during which time I made different types of cheese and cheese products; keeping some cheese for over a year and freezing the milk which we used until next lambing season.

I love the raw milk and cheese from the raw milk. However due to health and safety regulations in our Commonwealth, we decided to register with the government, enlarge our flerd (dairy flock) purchase a pasteurizer, direct pipeline system, cooler, and to make our wonderful cheese products available to the public. We decided to make a gouda cheese which traditionally is made from cow's milk. The recipe had to be tweaked (changed some), for our ewe's milk. Cheese can taste only as good as the feed the sheep eat and the cleanliness of the dairy milking storage and cheese making operation. Our ewes are rotated on grass pastures and fed spelt and barley which we raise on our farm . We always offer hay to them so diet remains the same without any sudden changes. In the summer we supplement their feed with fresh vegetables from our LARGE garden. During the dry season and during the coldest wintertime some corn and oats are fed to maintain proper body metabolism. We also supplement minerals and salt. Cheese making does become a labor of love – love of the sheep, love of the product produced, and love of the public for which it is produced.

Dale and I are enjoying retirement and the journey of life. The sheep have been a great enjoyment and a wonderful source of fulfillment. It is difficult to imagine that such a small animal is able to supply clothing from fine wool (skirts, suits, blankets, bulky knit sweaters, hats, gloves, felt slippers); and tanned products (leather jackets, etc.); and valuable quality meat and milk dairy products (yogurt, soft cheese such as feta, cottage cheese, hard cheese which is a cherished delicacy).

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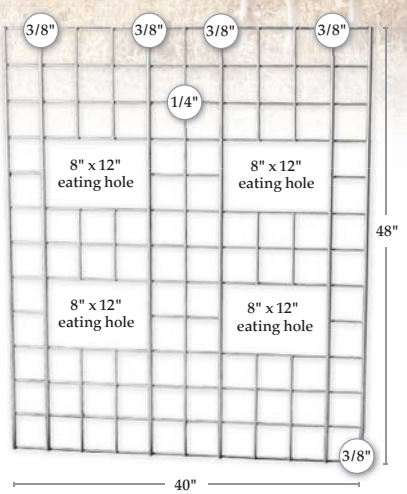

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