CASH MIRROR

Volume 11, Issue 3 December 1999

The monthly magazine devoted to cashmere goats and their fiber

Volume 11, Issue 3, December 1999

Table of Contents

CASHMIRROR

ISSN 1090-736X

Technical Information

This magazine is published each month by:
CashMirror Publications
2280 S. Church Rd.
Dallas, Oregon 97338
503-623-5194

E-Mail: goatknol@teleport.com
Home Page: http:// www.teleport.com/~goatknol

Publisher and Internet Whiz: Paul Johnson
Editor: Linda Fox
Eastern Correspondent: Linda Cortright
N. Rocky Mountain Correspondent: Yvonne Zweede-Tucker

Opinions expressed in this magazine are not necessarily those of the publisher or of the attractive staff, although some of them might be. *CashMirror* limits (as much as possible) its liability for errors, inaccuracies or misprints in advertisements, opinion papers and letters to the editor. Advertisers assume liability for the content of their advertising and assume responsibility for claims made in connection with their advertising. In case of error, the publisher is responsible only for costs associated with the space occupied by the error.

Results published in the magazine are from information supplied by clubs and organizers and no responsibility for complete accuracy can be taken although we'll certainly try to get it right the first time.

The *CashMirror* welcomes contributions of articles and photographs. Submissions may be made by mail, fax or e-mail.

No responsibility will be taken for material while in transit or in this office, although we will certainly be real careful.

Cover photo: Marilyn Ackley
Bessey Place Cashmere, Buckfield, Maine
"Let it snow!"

"I have an idea to keep warm..."
Breezy Meadow buck attempts to entice a doe across the fence.
Photograph by Doug and Roberta Maier, Bellingham, WA.

Check your October CashMirror!

You may have a page problem.

In printer's language, you may be missing a "signature." In normal people language, you may have received double pages for pages 5, 6, 27 and 28 AND you may be missing pages 15 - 18. If you're missing these pages, you missed "The Maine Event," the RSC Buckaroo fishing lure and Curly the Elegant.

If your issue has a problem, contact us and we will mail you a magazine with all the correct signatures.

Happy Holidays From the CashMirror Staff

We wish you the Best Through the Holidays and Into the New Century

Tips for Surviving Into the Next Century

Keep your goats away from the computers near midnight on December 31st. We know they've promised us no serious disasters, but you certainly don't want any little fried toes.

Go out and purchase a generator. Buy one in the post-Christmas sales. They'll be cheaper then.

Make sure your hoof trimmers and rubber boots have been certified as Y2K compliant.

Don't be in an airplane, an elevator, a Ford or in contact with something computerized, electrical or anything else you don't understand. This may be difficult.

Make sure you have an adequate supply of stored food—never mind, you have a herd of goats in case you get desperate. Make sure you have plenty of food for the goats.

Make lots of New Year's resolutions. This is a new century, remember. It's even more important to have good intentions this year.

Party, party, party!

Reflections

by Linda Fox

Containing the Bucks

This year, we were late assembling our breeding groups. We prefer to have our groups put together by the first of October to give us more pasture options. Before November we can use pastures without buildings. If it rains a little, there are trees for shelter. For later groups, when the rain is more serious, buildings are a must for the happy honeymooners. So, since we were late and had three bucks lined up for dates with does, we ended up with two bucks and their group of does sharing a fence line.

We chose the bucks to share the fence line carefully. We knew that White Lightning was not a candidate to share. He is aggressive and doesn't care to share much of anything. We felt that Silver Bart, a fairly mellow fellow, and Rayvon, who is on the skittish side, could comfortably share a common fence. After all, they both had ten does and this should certainly keep them occupied. Also, the three groups could all be monitored from the living room window so, in addition to providing family winter entertainment, we felt that if there were problems, we could see them and quickly nip them in the bud.

Paul came home from the Montana BOCC conference with visions of a new electric fence charger dancing in his head. Apparently at goat conventions , a man is not defined by the size of his automobile engine or his computer hard drive, but by the size of his electric fence charger. Paul came home complaining that everyone had a larger fence charger than we did and that we would need to upgrade immediately or at least before the next conference. He said that all the serious goat ranchers had chargers putting out at least 12,000 volts. In one of Dan Edens' seminars, he had explained how he trained his goats to his supercharger by placing strips of tin foil on the fence strand so that they would quickly find out that when he said "fence," he meant "FENCE!" Since the goats are curious about the shiny new things on the fence, they reach out to touch the tin foil pieces with their wet little noses and get one heck of a jolt. I somehow thought that this was a bit cruel. However, in their situation where they are taking goats out for weed control jobs, they must be confident that their goats are contained and under control. We can afford to be a bit nicer to our goats here.

As we put together our breeding groups, I told Paul that I thought that our lesser charger would do just fine as it has in the past.

For the first two days, Silver Bart and Rayvon respected their common fence. On the third day, Rayvon found he could jump the divider in the barn. He then beat down the gate to Silver Bart's side. When I returned from town, I found two extremely fatigued bucks butting heads in the barn's center aisle with one lone doe hiding under the tractor. I dragged the trio back to their respective stalls and cleaned out Rayvon's stall so that the floor in his pen was a foot lower—one of the disadvantages of "deep pack bedding" is that if you don't clean out on a regular basis, the height of your stall walls shrink. I also fixed Silver Bart's gate and marked my records as a " breeding accident day." Any doe in Silver Bart's group, including the one under the tractor bred around this date would have kids with an undetermined sire.

The next day, Silver Bart, who was no longer the mellow fellow he had been before the does were introduced, decided that Rayvon's does were more enticing than his own and he proceeded to attack the common fence. He quickly shorted out the one strand of electricity on his side and began whacking at the fence. By the time I arrived at the fence to assess damages, Rayvon had also shorted out his wire and was beating on his side of the fence. Two T-posts were loose and the fence was becoming shorter fast. I decided if I straightened up the fence and added an additional line of electricity on each side, they should regain their respect for the fence. As I ran back and forth to the barn retrieving supplies and tools, I yelled and threw sticks at the bucks in an attempt to keep them from destroying the fence beyond repair.

I fixed the fence, adding a new line of electric wire on each side and raising the lower wire somewhat so that it was closer to their level. This fence normally contains only kids and does, so the electric wire is only about one foot off the ground. The fix contained them for the rest of the day, but I noticed that they were still attempting to get through the fence. It was clear that more would be needed if we hoped to keep them separated for the entire month.

For the next two days, I spent a good share of my time propping up the fence, fixing electric fence shorts and trying to keep the bucks away from the fence. Of course, any doe in heat stands at the fence line so she can get the full attention of two adoring fellows.

The next weekend, Paul (with my blessing) purchased his killer fence charger. He put up a temporary line of fence ten feet inside the common fence, on Silver Bart's side and attached it to his new fence charger. We ran three strands of temporary fence line attached to temporary posts. The charger powers only this 100 feet of restraining fence, so it contains a full, hot charge.

As Paul was heading for the barn to turn on his new charger, I ran towards the house. He said, "Wait, don't you want to wait until I turn it on so we can see if it works?"

"You wait a minute," I replied. "I'm going to get the strips of tin foil!"

When Readers Talk...

Linda,

I just received my October issue of Cashmirror On November 2nd. I was reading your list of reference books. There is one more you might want to add, The New Goat Handbook by Ulrich Jaudas. Barrons publishes it. It is available in most local book stores. I really like it. It doesn't have much in it about Cashmere, but it has a lot of other good general goat information in it. It has the best written information on breeding that I have found so far. Most new goat owners don't know anything about heat cycles or breeding so I usually copy those pages and give them to them. It has a lot of nice color pictures of goats found in Europe, mostly dairy. The author is from Germany. They have their horns like goats should.

Another supply catalog you might want to add to your list is:

Mid-States Livestock Supply
125 East 10th Ave.
South Hutchinson, Kansas 67505
1-800-835-9665

They are strictly a sheep supply company. As you know what works for sheep works for goats, well most of the time it does. They have a lot of items that you cannot find any where else and at a reasonable price.

Doug Maier, Breezy Meadow Cashmere Farm
Bellingham, Washington
October 3, 1999

To the editor:

There's no way I can try to convince CM's readers that the cashmere growers of northernmost northern New England consider food unimportant. CashMirror's roving reporter not only documented the feeding frenzy at the last gathering of Maine growers but also photographed me struggling to look dainty consuming a burrito biggo special at the ECA show in Virginia (cover of the Oct. 1999 issue).

So she got the eating thing right, but I feel honor-bound to point out a couple of historical inaccuracies in her report. The Maine growers have been meeting fairly regularly since 1991 - and not entirely for pot luck surprises. Lydia Ratcliff came to a gathering in November 1991 to discover if there might be interest in starting ECA. We each put $20 on the table as seed money, and ECA was conceived. Shirley Levy, the heart of Lismore Cashmere Breeders in Australia, came to Maine to share her wisdom. Twice we invited Ann Dooling. Of course we always stay focused on our dining responsibilities, but we have been learning as well. Sometimes we get Wes Ackley to lead us in fiber classing drills. Sometimes we work on plans for cooperative ventures, like the booth we used to do together at the Maine organic farmers and gardeners' fair. Sometimes we just eat. Those who aren't strict vegetarians or really sentimental even share goat meat recipes.

Our group has seen changes through the years. A few of the best cooks - excuse me: cashmere breeders - have gone on to other pursuits. Others still have goats but have had to skip recent grower activities. At first we met reliably four times each year. Then we slipped into haphazard scheduling until Linda Cortright moved to Maine and used a dandy version of roasted garlic soup to trick us into more frequent gatherings. At a quick count I can remember meeting at seven different farms, and I learned something about goat management or fiber at each place. I also have consumed a few buckets of tabouli and a few tons of chocolate. Apart from eating we also share devotion to goats and to fiber, and we can always count on each other for a good giggle. In the ever-changing dynamic of the livestock world, it is neat to know that one group can plod along happily after almost a decade.

Marilyn Ackley, Bessey Place Cashmere
Buckfield, Maine
November 16, 1999

How can you contain goats?
Surround them with a hedge they won't eat!

The Jatropha Hedge

From the Sustainable Livelihoods Unit
United Nations Development Program
http://www.undp.org/sl/Overview/case_study.htm

The village of Mlambaphele, Zimbabwe, is located on land that receives extremely low rainfall (less than 650 mm). The villagers were forcibly moved there in 1944 as a result of the Land Appropriation Act of 1929, by which the colonial government appropriated the best farming and grazing lands for European farmers.

Cattle, the center of the livelihood systems in Mlambaphele, are not consumed for daily survival, but kept as insurance against disaster or when starvation threatens. For food on an everyday basis, goats are milked, slaughtered for their meat or traded for maize. Since 1958, the villagers in Mlambaphele have managed to keep their cattle alive, surviving near drought conditions year after year.

Each June through December, men and boys keep their cattle 10 kilometers away from the village in Mlageni (located on the banks of the Shashi River and Botswana border). While they are there, their village receives its annual rainfall, and grasses for grazing are replenished. When the cattle return to the villages in December, it is planting season and they are strong enough to work as draft animals. By the time the cattle return to Mlageni's river in June, the grasses there have grown up again.

To preserve the environment in Mlageni, the herders do not take their goats to graze at the river; goats are far more destructive to the environment than cattle and goats can survive year round in the village on less water than cattle need. However, protecting crops from the village's goats was another problem in Mlambaphele. To build fences, the villagers had been cutting down the small trees and thorny bushes on which the goats depended for food, thus destroying the needed fodder and degrading the environment.

The crops could be protected and tree-cutting reduced by planting hedges of a plant called the Jatropha Curcas around their fields. Jatropha is a plant of Latin American origin which is now widespread throughout arid and semi-arid tropical regions of the world. A member of the Euphorbiaceae family, it is a drought-resistant perennial, living up to 50 years and growing on marginal soils. Goats and cattle do not eat Jatropha. But Jatropha produces an oil that can be used for income generation. In fact, people call it the diesel tree. Furthermore, the oil from Jatropha seeds could be sold for cash, bartered for vegetables and used by the villagers for cooking and lighting. If the husks are processed, they result in nutritious stock feed, which produces manure containing lots of nitrates for soil fertility.

The success of the Jatropha hedge in Mlambaphele, Zimbabwe, illustrates the synergy that the Sustainable Livelihoods Unit's approach seeks to create when it brings in outside information, science and technology to enhance local realities. The Jatropha hedge enabled the village of Mlambaphele to expand their livelihood systems to include farming and other forms of income generation.

Additional Sources Related the Jatropha Curcas:

Biofuels and Industrial Products from Jatropha Curcas, edited by G. M Gubitz, M. Mittelbach and M. Trabi. This book was developed from the Jatropha 1997 International Symposium to spread the idea of sustainable technology for solving problems and to encourage the utilization of the Jatropha Curcas and other forgotten species to create social, economic and ecological benefits.

Internet page: http://www.jatropha.org
Jatropha Curcas System: An Integrated Approach to Rural Development in Tropical and Subtropical Countries, provides addresses and information on where to find Jatropha plants and other Jatropha related technologies.

Editor's Note: For real fun, if you are internet connected, go to http://jatropha.org/tetrae-e.htm
Print this page and, with the aid of scissors and glue, you can create a 3-dimensional, 4-sided pyramid which illustrates the four main aspects of the Jatropha System: Erosion control, renewable energy, poverty reduction and promotion of women. It does it all. Order seeds!

The Mongolian Breeding Program – Project Overview

Story and photographs by Kris McGuire

Note: Kris McGuire, CaPrA President was asked to travel to Mongolia in June and July of this year to consult with Mongol herders on how to improve their cashmere. The following is a report which she generated after her trip. Kris was hired by Land O'Lakes International Development Division to work for Mercy Corps, a consultant to USAID.

Goats at watering hole, encountered while Kris and her party were lost about 60 miles from the Chinese border. The two women at the watering hole were watering the herd in the traditional way, with a small bucket on the end of a stick which they dipped into a shallow well. They water their herd of 500 goats and sheep twice a day in this manner.

Breeding cashmere goats is not like breeding other domestic animals. Color, body shape and size are the main characteristics that distinguish the various breeds of cattle or dogs, and interbreeding among the various breeds produces offspring that are easily identified as half "this" and half "that." It's not so easy with goats. It is estimated that eight different sets of alleles (a genetic unit) control the expression of color in goats. Spots or stripes are very dominant, as are the eight different color patterns. Solid color goats are always the less dominant form; white is always dominant over black. To make matters worse, the genetic control of body size is inextricably linked to all the fiber characteristics in a negative way (i.e.: the larger the body, the coarser the cashmere). And to top it all off, environmental conditions have very definite effects upon fiber diameter (i.e.: fat goats grow coarser cashmere, thin goats grow finer cashmere than they otherwise would). So when a breeding program tries to manipulate one characteristic, say cashmere production, the result of that manipulation on other fiber characteristics such as fiber diameter is profound, and often undesirable.

In the early 1970's, cashmere goat breeders in Australia began to cross breed their feral does with Angora bucks in an effort to increase down production. While they accomplished this goal, they also increased their down diameter, decreased their bodyweight and introduced a third fiber type that was neither down nor guard hair. Market forces required that they get rid of this third fiber type and decrease their down diameter. The Australian Government responded by funding a 20-year study by Drs. William Pattie and Barrie Restall to establish basic cashmere character heritabilities and genetic correlations. If these relationships were known, the rate of progress would be faster and the Australians could begin to compete on the world market for cashmere. Pattie and Restall have completed their studies and their results have revolutionized cashmere breeding programs.

Mongolia, a historic producer of fine quality cashmere now finds itself in a similar situation as Australia did in the early 1970's.

Continued on next page

Mongolian Glossary

ger - tent with wooden frame, covered with layers of felt. Dwelling for nomadic goat herders.
aimag - a municpality. Mongolia is divided into 18 aimags.
saum - a political subdivision. Each aimag is divided into four or five soums.
beg - yet another municipality. Each saum is divided into three begs.
UB - Ulaanbataar, capital city of Mongolia

Mongolian Breeding Program

Continued from previous page

According to recent reports, the mean fiber diameter for Mongolian cashmere has increased over the past 10 years to 17.9 microns and the increasing presence of the third fiber type is alarming (Zagsduren, 1996). This observed decline in the quality of Mongolian cashmere has prompted the inclusion of an Animal Improvement Program within the scope of the Gobi Regional Economic Growth Initiative, a Mercy Corps project that is funded by USAID. The purpose of this program is to increase the income from animal products to the herder. To accomplish this, the Initiative has asked for a breeding program to be designed that will allow the herders to manipulate their goat genetics in an effort to attract higher prices from the cashmere buyers.

Unfortunately, changing genetic makeup requires time although it is not especially difficult. As a result of the extensive studies conducted by Pattie and Restall in Australia, a genetic correlation between and among the three basic goat characteristics (down weight, down length and down diameter) and goat bodyweight has been documented (Pattie and Restall, 1991). In some cases the correlation is negative and in some cases, it is positive. This means that manipulating one characteristic, such as micron diameter, will have predictable (and in some cases, negative) impacts on one or more of the other desired characteristics. For example, the herders who have been interviewed in Omnogovi and Dundgovi as part of the Initiative's pilot program are concerned about decreasing goat bodyweight. They did not previously know that it is negatively correlated with both down production and down diameter, (as down production or diameter is manipulated up or down, bodyweight goes down) but they have received the news with a wisdom born of years spent observing their goats. And they are willing to accept the science surrounding these correlations and work within the project parameters. The pilot project will develop techniques and educational tools specifically designed for Mongolian herders that will help them sculpt their cashmere harvest to best fit the existing cashmere market in a culturally acceptable way.

History suggests that the introduction of the Russian Don goat, an Angora goat cross, is the root of Mongolia's fiber quality problem. This certainly contributed to the appearance of the third fiber type and has probably contributed to the increase in fiber diameter, as well as the desired fiber production. But there are other factors at play as well. Since decollectivization in 1990, goat herder numbers as well as number of goats herded has increased across Mongolia (AgriTeam Canada, 1997). Unemployed workers have joined the herder ranks with small herds and established herders, who received animals from dispersing the collective herds, have increased their herd numbers. They have accomplished this in part by electing to keep older wethers (referred to as "males") sometimes in percentages that approach or exceed 50% of their herds. Pattie and Restall have established that as a goat ages, its fiber diameter will increase at a given rate. This change in herd structure could contribute to the coarsening of Mongolian cashmere as much as the Don goat introduction.

Another factor that determines goat fiber diameter is nutritional level. Other Australian researchers have established that in unselected feral goat populations from the interior of Australia (a population that approximates "pure" Mongolian goats, personal communication, B. Restall, 1999), improving nutrition levels (fattening the goats) will result in an increase in fiber diameter (McGregor, 1989) especially in unselected populations. Conversely, a decrease in nutrition will lead to finer fiber. This is called "hunger fine" fiber. If some goats in the Gobi region (which is currently experiencing a drought resulting in poor animal condition even in July) still exhibit coarse fiber, it is reasonable to conclude that the root of the problem is in the genetics of the goat and not in the environment.

But not all goat herds in the Gobi grow coarse fiber, contrary to some reports. Preliminary results show that one herder located in Bayandelai soum has a herd that has been measured at 16.8 microns. Another herder in Loess soum had two bags of cashmere, one of which measured at 15.5 microns and the other at 17.2 microns. Each of these three groups of does will require a breeding program that is designed to address the needs of the herder in the marketplace. Herder #1 needs to decrease her micron diameter while improving the conformation and bodysize of her herd so they can better withstand the rigors of a Mongolian winter while maintaining her production. Herder #2 needs to maintain his bodyweight and production levels and work on the micron diameter of his coarser does. Different herders will always have differing needs and this project can respond at the herder level according to their stated goals and objectives. The project will never try to dictate what type of fiber is best to grow; the cashmere marketplace will do that.

Pattie and Restall have published a book, Breeding Cashmere Goats, (1991) which lays out the basics of cashmere goat breeding at the herder level. It is the goal of the Initiative's Breeding Program to teach these herders how to use the tools that Pattie and Restall have

Continued on next page

Mongolian Breeding Program
Continued from previous page

provided. This entails careful measurement of the fiber characteristics mentioned above as well as several body measurements. These values can then be mathematically manipulated according to a "selection index" that will identify the best buck to use to achieve the herder's goals. The key is to have the herders be able to:

1. Define their own objectives based upon the current herd statistics,

2. Conduct their own genetic evaluation by doing the actual measurements, and

3. Implement a breeding program.

Tomor's ger—site of Kris's first Mongolian cashmere classing clinic. This is the group that participated in the clinic. They are all project team members, Tomor, his wife, Mam, his grandchild and the local agricultural experts. The satellite dish on the left is hooked to a solar collector. Tomor is a considered a wealthy man to own such things. He is a 1,000 head herder. He will be collecting g data on his herd for Kris's return to Mongolia in March 2000.

Mercy Corp personnel—Susan Hahn, Mercy Corp Project Director and Altansuk, Mercy Corp project team member in charge of compiling consumer commodity data for distribution to the herders. They are wearing the traditional "dell" and "malgai" (hat) worn by all Mongolians.

This is not rocket science, but it is scientific. With some training at the soum, bag and herder levels, cashmere goat herders in the Gobi can immediately begin to change their herd statistics as they see fit by learning how to choose bucks that are defined by one of Pattie and Restall's selection indices (whichever one suits the herder). A Tiered Breeding Structure (also called a nucleus herd breeding scheme) is probably the breeding program of choice as it uses only selected bucks from a nucleus buck herd over does that have likewise been selected for their quality. This requires that groups of selected does be maintained and it works best within a cooperative group of herders.

Use of an Independent Culling Level selection system is the next best method to improve a cashmere goat herd and this system will be used wherever it is not possible to set up a Tiered Breeding Structure. This secondary system will result in about a 15% reduction in the rate of improvement, but it is much easier to implement within a single family herd.

The first place to start is with the spring combing season. Careful cashmere combing will allow each herder to record his herd in terms of goat bodyweight, down production, down length, and down diameter. This will allow him or her to better define the breeding buck that will be needed in the fall as well being able to market his/her cashmere based on known fiber type. How to select an elite herd from within an existing doe herd efficiently is a skill that the herders must learn. Since intact bucks are in such short supply, herders should also learn how to qualify as a Breeding Buck Farm, a market niche that any herder willing and able to maintain a large herd of kid bucks can fill.

The second obvious place to start, one which should immediately improve income to the herder, is for him or her to class fiber into "lines." A line is a bag or group of bags that contain like fiber; fiber that is all the same color and quality. Quality is defined by micron diameter

Continued on next page

Mongolian Breeding Program

Continued from previous page

and yield (% of guard hair vs. fiber). This will come easily with herder education and it is also part of the data collection process involved with cashmere data collection. Classing fiber into lines based on quality should give the herder more leverage in the marketplace. If the UB processors want finer cashmere and are willing to pay a premium for it, the herder must actually receive this premium money in order to be motivated to produce this finer fiber.

This is where Problem #1 crops up... the itinerant trader. Typically, herders sell their cashmere at the ger door to the first trader who happens along. Often, circumstances force them to accept flour or other commodities at inflated prices in trade for their cashmere or finances force them to enter into a "futures" contract to sell their cashmere harvest at a fixed, low price in exchange for a high interest loan against that income. The presence of a free and open commodity market at the soum level can allow the higher prices offered by the UB processors to have an influence on the herders' breeding decisions.

But maybe not. If China continues to pay lower-than-premium, but higher-than-discounted, prices for classed and unclassed cashmere alike at the ger door, the herders are better off selling coarser fiber directly to China. Something has got to give here. Either the Mongolian Government has to levy trade with China (thereby decreasing their offering price) or the UB processors have to be able to pay significantly more for classed, fine fiber at least at the aimag center level.

Prices paid for raw cashmere will ultimately be governed by the price the processors can command for their finished product. Either way, herders will only respond to the market signals that they receive. And right now, the Chinese are signaling the greater income to the herder.

The best thing that could happen in the short run is for the herders to become educated in the market economics of the cashmere industry as well as the mechanics of manipulating cashmere herd statistics. This will allow the herder to make educated breeding decisions that will directly affect his income. Again, the objective of the Breeding Program is to give the herders tools with which they can manipulate their herd statistics. The way in which they choose to use these tools is up to them.

Many herders in the Gobi and in Mongolia in general are very experienced, having lived the nomadic lifestyle for generations. But things are changing: the climate is changing, there is greater communication between soums, and there has been a lot of research conducted on domestic animals of which the herders are probably not aware. Additionally, collectivization may have resulted in the loss of some traditional herder knowledge and the stagnation of some ideals. Some new herders, fleeing unemployment or underemployment may not be aware of these basic husbandry skills that can help maximize production. The program will offer basic, modern husbandry techniques for the beginning herder and may serve as a teaching tool for the children and relatives of experienced herders. Range carrying capacity (the number of animals that a given area can support) can be calculated and this is another important tool for the herders. Conditions in the Gobi are changing; there are more herders with more goats relative to the rest of their herds and this drastically affects carrying capacity. Nutrition plays such an important role in cashmere quality and quantity, a basic knowledge of the goats' nutritional requirements is also part of the program.

Additional tools detailed within the handbook are designed to help the herder. *(The handbook is a basic manual for herders created by Kris with information on goat management and husbandy—it is 100 pages long and being translated into Mongolian.)* Various conformation defects that can and do affect survivability and reproductivity are discussed. Animals that cannot compete effectively because of a physical deformity are more likely to die and are more likely to be non-reproductive (dry). Furthermore, while they are alive, they consume feed which is in short supply, depriving their herdmates of that resource; herdmates that will be adversely affected by this lack of nutrition. Defective goats, goats that grow fiber that is not within the definition of cashmere, old goats, "male" goats and female goats that are unlikely to reproduce should not be maintained within a herd. Unfortunately, there is no market for these cull goats at this time. Other cashmere producing countries such as Australia and the United States depend upon a market for cull animals to maintain the quality of their cashmere herds. There are various business development opportunities which may be able to fill this very important marketing niche. But until this market exists, the lack of it will remain a major obstacle to all breeding programs.

Basic Cashmere Classing, a necessary tool, teaches the fundamentals of identifying cashmere as to color and quality. As a market for quality cashmere becomes established, herders will have to know what it is that they are trying to market in order to command the highest price possible. The project will provide hands-on fiber classing clinics at the herder level, but

Continued on next page

Mongolian Breeding Program
Continued from previous page

in addition to that, this chapter should provide the basic skills with which fiber quality can be assessed. Actual fiber samples for use as a reference when looking at fiber types have been distributed. Micron diameter is perhaps the most difficult fiber characteristic to assess. But in the absence of a cashmere testing laboratory that is unbiased as well as inexpensive, visual assessment will have to suffice. Again, herders participating in the pilot program will receive fiber testing services, as this information is very necessary in a breeding program. An independent test house is one of the potential business development opportunities.

Diseases of goats that may affect cashmere goats in Mongolia are reviewed. The most serious of these is brucellosis or "Undulant Fever" in humans. Because this disease, most common in cattle, but occurring in sheep and goats, is transmissible to man, information about its etiology, symptoms and treatment is essential. Goats do not get the same kind of brucellosis as cattle. Caprine brucellosis is caused by Brucella melitensis, a type that is directly infectious to other goats rather than venereally transmitted, meaning it is not limited to sexually transmission. Symptom in humans include a fever that comes and goes, joint aches and a general malaise that is not connected to other conditions. Modern antibiotics can and do control and cure the disease in humans. Historically, the fever is fatal in 10% of untreated cases. The bacteria that cause the disease are present in the fluids associated with aborted fetuses as well as in unpasteurized goat milk and milk products. Some people can be resistant to the disease as a result of exposure to the bacteria at an early age. The heating of raw milk to just below the boiling point is the only effective control and all milk products from goats and cattle should be treated in this way to prevent the disease. Also, handling aborted fetuses or the fluids that issue from the female afterwards is highly dangerous. Female goats that have aborted in the past may still shed millions of bacteria during subsequent deliveries. This is why it is so important to cull all females (cattle, sheep and goats) that abort their fetuses. Also, any male domestic animal that has severely

Continued on next page

"Bayandelger" bucks. They're red, with long blonde guard hair on shoulders and flanks. They transmit their color to the majority of kids sired. The buck in the front is a grand champion breeding buck.

This little red buck is the son of the big red breeding buck, above. No food and too many does to breed takes its toll. The "bib" around his middle is designed to prevent out-of-season breeding. It serves as a physical prevention to penetration, supposedly. Per Kris, it works, mostly.

Mongolian Breeding Program
Continued from previous page

swollen testicles should be culled before he is allowed to breed any female. All milk products should be thoroughly pasteurized before consumption.

In the United States, control of the disease is maintained through culling any animal that tests positive to it. In Mongolia and other countries where the disease is an epizootic (meaning widespread in animal and human populations), control must be through the vaccination of all domestic animals as well as the destruction of infected animals. The World Health Organization (WHO) is involved in the testing of Mongolia livestock and every effort to cooperate with this program should be taken.

Because the nutritional health of Mongolia livestock, especially in the Gobi, is so low, diseased animals usually cull themselves: i.e.: they die. But as management practices become more advanced, the nutritional level will rise. Then it will become more and more important to be familiar with the various disease processes and the means to deal with them. Again, as nutritional levels rise, so will the micron diameter.

Because of the infrastructural obstacles that exist in Mongolia at the present time (i.e.: lack of transportation, winter fodder, adequate water supply, summer forage and limited or no markets for raw products) significant progress in the improvement of income to herders will be slow. But breeding programs are also notoriously slow, requiring two to three generational intervals to realize monetary gain. A generational interval is defined as the time it takes to completely turn over herds' genetics. It is calculated by figuring the average age of the bucks used for breeding, adding that to the average age of the does that are kidding and dividing by two. In the Gobi, where bucks are first used at age 2 and are used until age 6 (4 years) and does begin to kid at age 2 and are kidding until the age of 6 to 8 years (a total of 4 to 6 years), the generational interval ranges from 4 to 5 years [((6-2)+(7-2))/2=4.5]. This means that the results of using an "improved" buck will not be seen in the herd average for up to 5 years after the buck is first used. It is possible to shorten this generational interval to 2.5 years by using bucks for only two years and by culling all breeding does over the age of 4 years. Again, the lack of a meat market will limit this effort, but results will be realized much more quickly if this is done. So if herders can be content at this time to plan for the long term, a time when the Mongolian infrastructure will be established, they should begin now and plan ahead by instituting a solid breeding program now.

You can read more about Kris's experiences in Mongolia in Concerning Cashmere, CaPrA's newsletter. Excellent articles were published in the May - August 1999 issue with more information promised in future issues.

'Bye 1999
(It's been a good year.)

A GGS buck—he's black and an Angora cross. It must be out of season as he is sporting a "bib."

IDEAL BODY CONDITION SCORES IN GOATS

By Dr. Helen A. Swartz
Missouri State Sheep, Goat and Small Livestock Specialist
***Reprinted from the Goat Production Newsletter,* July 1999**

Body Condition Score (BCS) in as important in goats as it is in cattle and sheep. Simply looking at a goat and assigning a score can be misleading. Feeling the ribs by running the hand over the rib area is the best determination of condition in a goat. This enables the goat producer to determine the amount of fat covering the ribs allowing the scores based on a graduated scale, thin being a 1-3, 4-6 moderate, and 7-9 fat.

Other areas in a goat that can be monitored are the shoulders, the tail head, the pins and the hooks. Experience handling several goats graded from 1-9, makes it easier to determine what should be done to bring them back to a moderate scale of 4-6.

Whatever the season may be, a goat producer should be concerned about condition score. This is generally the time of year that goats are bred in Missouri. Most goats are seasonal breeders which means they will be more likely to breed when daylight is decreasing, with highest ovulation by late September and October. Out of season breeding is genetic and these goats will breed year round but will not have as high a percentage breeding in the non-breeding season. Goats that are too thin or too fat will have problems breeding in any season. Research has shown that does too fat or thin will have failure reproducing and low twinning and weaning rates. Does too fat will have a higher percentage of ketosis (pregnancy toxemia) at kidding time.

The definition of body condition refers to the fleshing of goat. Just before the breeding season a score of 5-6 is desirable. If goats are on pasture at breeding time and condition scores are too high or low, conditioning to remedy the situation is advisable. If goats are too fat and being fed grain, slowly decrease the grain. If goats are too thin, slowly increase grain or turn them on a lush pasture high in protein and energy. Avoid all red clover or alfalfa pastures at breeding time because the potential phyto-estrogen compound sometimes found in these legumes will act as a "birth control pill" and inhibit estrus. Mixed grass and legume pastures should not be a problem. The grass percentage should dilute the potential problem with a phyto-estrogen compound sometimes identified in legumes. Legumes that are threatened, because of weather or insects, seem to produce the compound that is negative toward breeding. Lespedeza is a legume that has not been found to have the compound that inhibits cycling in does.

Flushing is a term used to describe an increasing level of feed offered to breeding does about one month prior to breeding. Flushing can also be observed (increasing body weight) on lush pastures such as lespedeza or annual forages planted for this occasion. Cottonseed is a low cost high energy supplement to consider using for flushing. More twins should result from flushing. Dairy does that are being well fed to produce milk may not need flushing to result in twinning or multiple births. If necessary, does may need grouping to feed according to their body scores to maximize production. Below is a chart for body condition scoring.

BODY CONDITION SCORING

BCS 1 Extremely thin and weak.
BCS 2 Extremely thin to the touch but not weak.
BCS 3 Very thin with ribs visible, especially to the touch with no fat cover over the ribs or spinous processes (backbone).
BCS 4 Slightly thin but with visible ribs, sharp spinous processes (backbone)
BCS 5 Moderately thin with some fat cover felt over the ribs and backbone.
BCS 6 Good condition and visibly smooth over the ribs and spinous processes.
BCS 7 Goat feels fat with no visible ribs or spinous process, sharp to the feel but smooth and round.
BCS 8 Very fat to obese with spinous processes and ribs difficult to feel.
BCS 9 Extremely fat or obese with possible deep patchy fat over the entire body.

SUMMARY

Recommendations for the start of the breeding season is a score of 5-6, end of pregnancy, 5-6. Goats of any breed should never have a body score of 1-3 or 7-9. Healthy goats should be maintained in the middle range by adjusting feed to accommodate a middle range score.

Goat Meat Recipes

Recipes and chevon cooking tips from the Master Chefs at the Alberta Goat Breeders Association

Chevon Cooking Tips

Chevon should be cooked slowly in moist heat. Many dishes may be simmered in a slow cooker. Meat can be browned over medium heat before adding liquid. Cover roasts tightly or wrap in tin foil. While chevon may be substituted for beef and lamb in many recipes, its unique qualities of leanness and mild flavor demand special treatment in cooking.

Kadjemoula (Arabian Goat Stew)

4 pounds chevon cut into 1-1/2 inch squares
1/2 tsp. freshly ground black pepper
2 medium onions, chopped
1/2 cup flour
4 carrots, peeled and quartered
2 tablespoons butter
2 medium turnips, peeled and diced
2 tablespoons olive oil
3 cloves garlic, chopped
1tsp. salt
2/3 cup dried apricots*
1/4 tsp. ground cinnamon
2/3 cup pitted prunes
1/4 tsp. ground ginger
3 to 4 cups stock or water
blanched almonds to garnish

Trim all fat from meat and flour pieces lightly. Heat the butter and oil in a pan and add the meat cubes a few at a time. Brown quickly over fairly high heat. Remove as cooked.

Put all the browned meat back in the pan and sprinkle with salt, cinnamon, ginger and pepper. Add the vegetables and dried fruits. Pour in enough stock to cover the meat and bring to a boil.

Lower the heat to a simmer, cover and simmer gently for 2 hours or until tender.

The vegetables and fruits should have blended into a thick sauce. Add a small amount of almonds to garnish, also a few extra apricot halves can be added. Cook through.

Remove the stew to a hot platter and surround with mounds of rice pilaf, couscous or cracked wheat.

**A can of apricots can be substituted for the dried ones. Add whole to meat and vegetables, but adjust the liquid accordingly.*

Moroccan Chevon

1/4 cup olive oil
1 tsp. ginger
2-1/2 lbs. chevon (goat meat) cut in cubes
2 chopped tomatoes
1 clove garlic, minced
1/2 cup water
1 onion, chopped
1 cup seedless raisins
2 tsp. salt
1 tablespoon butter
1/2 tsp. pepper
1/3 cup blanched almonds
1 bay leaf
2 onions, cut into large pieces
1 whole clove

Heat oil in a deep pan. Add meat, garlic and onion. Brown lightly. Add salt, pepper, bay leaf, clove, ginger and tomatoes. Stir over high heat 3 to 4 minutes.

Add water, cover and simmer 1-1/4 hours. Stir occasionally.

Saute cut onions until golden. Soak raisins in warm water 1/2 hour, drain. Brown almonds in butter. Add to cooked meat.

Bake in 350 degree oven for 15 minutes.

Garnish with parsley and serve with rice.

For information about the
Alberta Goat Breeders Association
Contact them at:
Box 229, Hay Lakes
Alberta, Canada, TOB 1WO
phone/fax 780-878-3814
email: agba@edmc.net
internet: http://www.edmc.net/agba

The Goatkeeper's Closet

By Linda Cortright
Grumble Goat Farm

Here's an interesting question: Do you find yourself reaching for the vacuum cleaner or the barn shovel when company comes to visit? Would you rather impress them with sparkling floors or clean stalls? Since I loathe making decisions of this magnitude, I reach for both—but I start with the shovel.

This past summer brought an unusually large parade of folks to the vicinity of my back door and so my good housekeeping skills were perpetually being honed. It's not that I harbor illusions of sanitary grandeur, I just don't want to send people reeling from the sight or the smell.

One thing I've noticed about suburbanites is they seem to assume that since their summer is for vacationing, yours must be too. In fact you probably have nothing better to do than spend your days baking bread in the woodstove and entertaining on the verandah while sipping lemonade and eating crudite while some secret troop of barn elves cuts the hay, repairs the fences, patches leaks, trims hooves, and oh yes, keeps the bucks away from those broads. I have lived in this house for two years and either the previous owner took the elves with them or they packed their bags and returned to the Keebler factory.

Friends and family came and went and by all outward appearance no one seemed particularly horrified by the condition of the farm or the nature of my animals. In fact I think some thought that raising goats was a rather polite existence.

But then my aunt and uncle arrived. I love my aunt and uncle. I would do anything for them. I would give them a style 3, condition 4, 13-micron goat if I had one to give. Really. However, they choose to stay at the motel down the road—they're from the suburbs. We spent three wonderful days catching up on childhood stories that are fortunately now regarded as charmingly juvenile as opposed to intolerably recalcitrant. I was able to share my most treasured companions, the girls, with them and they seemed genuinely interested in the goats and even asked questions beyond the point of familial politeness.

It was a marvelous visit and as the hour of the departure drew near, my aunt turned to me and said, "You know what really impresses me the most about your place?" Pause ... pause. "Your coat closet."

"My WHAT? My coat closet?" Surely I couldn't have heard her correctly. Perhaps she said goat closet (a place for sexually confused goats?).

"I just can't believe all the different coats you have. Why I've never seen so many. Do you really wear them all?"

At this point I'm still reeling from her remark and not able to answer intelligibly. "Uh-huh."

"But you have two identical red flannel shirts."

"Oh, they only look identical Aunt Betty. They're very different. One of them is clearly faded and the bottom is terribly frayed. If the truth be known, I save that one for when I clean out the barn in the spring. I don't have a tractor so I have to lift about 8 tons of urine-soaked hay that's been fermenting like yeast over the wintertime out by hand, so I really don't like wearing anything good for that job. The other shirt is my in-town shirt. That one only has a few rips from the fencing along the bottom and doesn't smell too bad either."

"Oh," came the polite response. "Well what about that great big blue thing that looks like something the car mechanic would wear?"

"You mean my puff suit? I couldn't survive without it. Do you know I can put that thing on right over my pajamas, slip on a pair of boots, feed the girls and be back in bed in less than 10 minutes? In fact it's so roomy I can even put it on over my bathrobe."

At that moment I realized I had just revealed one of those horrible intimate secrets better left for the therapist's office. Yes, I do farm in my pajamas and now my aunt and uncle knew it too.

"Oh," came the polite response yet again.

Why do I have to be so honest? Why couldn't I have just told her that it gets so cold up here you need one of those suits for mere survival— which is initially why I bought it. These people are from the suburbs. They run leaf blowers and shovel sidewalks. They don't get farming in your jammies. (They don't get the concept of waking at 5:00 every morning either.)

"I don't know Linda. I've just never seen so many coats."

Now I was beginning to feel as if my parsimonious Scottish nature was somehow being directly impugned. "Aunt Betty I really do wear them all, I promise."

With that the conversation was promptly dropped and we made our good-byes and the taillights trailed down the driveway. I turned on my heel and immediately marched into the coat closet. Which is also the laundry room/dog room/water heater and purifier room—and where all 63 rolls of toilet paper that were on sale at Sam's Club are stored—you might have thought she would have mentioned those?

I began counting coats. I have 28 coats. Which averages out to 2.33 coats per month. Imelda had 3,400 shoes. That's 283 shoes per month—I wonder what she did with the odd one? Imelda had a problem; I just raise goats. But now I have this lingering paranoia that I will always be defined by the contents of my closet versus the craftsmanship of my hay feeders or the plumbness of my fence line. I am doomed.

But then again, the only coats that really matter are the ones that belong to my girls. There are none finer.

Business of Cashmere Conference V

By Paul G. Johnson

The annual PCMA 2-1/2 day event was held in Missoula, Montana. It was marked by enthusiasm with a strong undercurrent of optimism. This year's event was well attended, with more than forty participants. The sessions were geared for both experienced and new cashmere goat folk.

Keynote speaker was Dr. Christopher Lupton, the noted fiber research scientist from Texas A&M University. Dr. Lupton gave several talks which included fiber testing, objective testing for style, and the on-going latitude study, which has completed its first year of the projected three years of the study. (See separate article beginning on page 19.)

Diana Hachenberger, from Hamilton, Montana, gave a talk about fiber comparisons, which included a test to identify several types of yarn. Yarn types included cashmere, cashgora, flax, cotton, dog hair, wool, llama and mohair. Tough test!

Steve Hachenberger discussed dehairing and gave a presentation on both his large dehairing machine and the smaller machine which has recently been completed and is currently being tested by Paul Johnson. Steve also had the test results from Dr. Lupton on the fiber processed by the smaller machine, which was very impressive. Steve also served as Master of Ceremonies for the event with considerable help from Diana.

One surprise was the luncheon report by Joe Dooling who had recently returned from Australia and South Africa. While in Australia, he visited a small test herd of "guard-hairless" cashmere goats. Apparently long term viability of the animal is still in question.

The topics of guardian animals and basic goat care were well covered by Julie Becker from Mitchell, Nebraska. Dan Edens (Helena, Montana), whose research on goats for weed control is attracting quite a bit of attention in Montana and nationally, gave talks on weed control and fencing. Ann Dooling (Dillon, Montana) spoke on marketing your products, as well as fiber classing. Many fleeces were available for hands-on learning. Dr. Linda Kauffman presented a workshop on basic veterinary care for goats.

Tom Dooling talked about and showed slides of their China/Mongolia trips, which included slides

Continued on next page

Diana Hachenberger conducts a workshop on fiber identification.

Jerry Shea demonstrates his solution to goat restraint—a canvas and leather sling used to raise a goat from ground level to your level.

Steve Hachenberger (left) talks about dehairing with Ron Gerrity from Kanarraville, Utah.

Tom Dooling and Pat Fuhr (Giant Stride Farm, Onoway, Canada).

Diana and Steve Hachenberger were presented with their Certified Fiber Classing certificates. These certificates were issued by the PCMA under their adopted guidelines.

Ann Dooling (left) and Diana Hachenberger either saying "hello" or hamming it up for the camera.

BOCC V

Continued from previous page

of goats being combed Mongolian style.

Paul Johnson, *CashMirror* Publisher, Dallas, Oregon, gave a talk on resources for goat owners which included lists of books, catelogs and internet resources for obtaining information about goats and supplies.

Breaks between sessions were long enough for many informal discussions on a wide variety of goat topics, with experienced goat folk sharing information with new and prospective goat owners. Networking between goat folks pays big dividends, and sharing experiences is always informative and useful.

The hosts and chief planners of the conference, Steve and Diana Hachenberger did a great job, and the time passed too quickly for participants.

The conference concluded with a trip to the Castle Crags Ranch in Hamilton, Montana and a demonstration of cashmere dehairing on Steve's larger dehairing machine, which he has developed and patented.

One of this year's attendees at the conference was Sujit Acharya, Partner and Vice President of Royal Pashmina, Kathmandu, Nepal. Another conference vendor was noted artist C. A. Grende. She displayed a wax replica of a soon-to-be-released bronze sculpture of a North American cashmere buck. The sculptures will be limited to 25, with some spoken for already.

A real delight was an inexpensive alternative to an Australian "downunder goat handling device" for hoof trimming, designed by Jerry Shea from Washington. It is a sling made of leather and canvas that, with the aid of a block and tackle, is used to raise a goat to facilitate hoof trimming and other maintenance chores.

Next year's BOCC conference will be held in Helena, Montana in September or October, with the exact dates to be announced later.

For information on obtaining a (large) notebook containing the past five years' BOCC Conference proceedings, contact Steve or Diana at Castle Crags Ranch, 894 Pheasant Run, Hamilton, MT 59840, telephone 406-961-3058, email: cashmere@bitterroot.net. The cost of the book is $65, plus $5 for shipping and handling.

Steve Hachenberger, MGM member, on the (Budweiser) patch. He may have been one of the founding members of MGM, but he can't find his membership card to confirm this.

TCA Rejects Referendum to Disband

At a meeting of the Texas Cashmere Association (TCA) held in San Angelo, Texas on November 30th, a referendum to disband the organization was defeated by vote of the members present. After the vote was counted, the majority of the current Board of Directors resigned. The remaining Directors are Kim Sinclair, Robert Stone and A. J. Pepper. James Barton has been nominated as Interim President. A new Board will be voted on at the next general membership meeting scheduled for February 19th in Brownwood, Texas.

The nominations committee is Kim Sinclair, Pat Reed, Bill Nagel and James Barton. It is requested that if you are interested in being on the new TCA Board and are a member in good standing with dues paid and you are willing to put in some "elbow grease," you should contact the nominating committee.

James Barton, Interim President, requests that current members call old members and prospective members and tell them of changes in the organization. He says that new ideas are being discussed and it will take dedication from everyone to make things work. He also noted that members are looking forward to the next State Fair of Texas, the Ft. Worth Stock Show and possibly the San Antonio Stock show.

A newsletter will be sent to members asking for nominations and informing members of changes. Results of nominations will be announced February 19th in Brownwood. Members and interested parties are asked to contact James Barton (915-387-5284, email: bar-y@sonoratx.net) or Kim Sinclair (512-272-5750, email: bsinc42000@aol.com) for further information.

MGM Meet and....?

By Linda Fox

(Retrieved from the cloudy head of Head Herder Johnson)

Members of the Mild Goat Men met October 29, 1999, in Missoula, Montana at the Joker's Wild or Wild Jokers or something like that Bar and Grill at around 10 PM. Nobody bothered to count who was there and nobody cared if there was a quorum—probably because nobody was sure how many members there are or how many a quorum was anyway.

The main item of business (besides ordering drinks) was to discuss the purported overthrow of Head Herder Johnson at the last annual meeting. No one seemed to remember a whole lot about the incident, so it was finally established that if the Head Herder would send the members new (laminated) membership cards, they'd just pretty much forget the whole event.

Under New Business, they brought up, discussed and resolved all of the world's problems. Unfortunately, no secretary (because there is none) took minutes and all was forgotten by the end of the meeting.

Under Old Business (or was is no business?) a member bought a round of drinks with funds sent by an absent member who had some flimsy excuse about why he wasn't there. Another member bought the second round of drinks to repay the member who bought the first round, who still wasn't there to drink it, but heh! that's his problem. A brief attempt was made to sing the MGM theme song (Born to Be Mild), but no one could remember any of the verses and the establishment got real tired of hearing the group belt out the chorus after about the third time and asked them to either leave or knock it off.

They think there might have been a new member there (from New Hampshire or Utah or somewhere around there), but when everyone tried to find their membership cards to determine who the new member was, no one could find them. It was felt that the new laminated cards might help as they would not disintegrate so quickly when left in jeans pockets through the laundry process.

By this time, it was getting late and things were getting quiet and there didn't seem to be any more world problems to take care of. The waitress, noticing how pathetic and lost the group seemed to be, bought a third round of drinks for the membership.

The group adjourned their meeting at around midnight (or was it earlier) after reaffirming the three principles on which they were founded: 1.) They are men! 2.) They have (and like) goats! 3.) And what was that third thing?

The Effects of Location on Fiber Production By Cashmere Goats: The Latitude Study—One Year In

C.J. Lupton[1], A. R. Dooling[2] and K. Lankford[3]

[1]Texas Agricultural Experiment Station
7887 U.S. Highway 87 N., San Angelo, TX 76901, U.S.A.
[2]Pioneer Mountain Farm, Inc.
3299 Anderson Lane, Dillon, MT 59725, U.S.A.
[3]Susitna Ranch, HC 89 Box 668, Willow, AK 99688, U.S.A.

Dr. Chris Lupton

Summary

Cashmere and selected Spanish goats were maintained on research sites in Alaska (AK), Montana (MT), and Texas (TX) to study the effects of location on cashmere production. The following report is based on one year of production only, the animals being shorn at approximately 24 mo. of age.

For Cashmere goats, location had no effect on cashmere production expressed as grams of down per animal. However, when production is expressed as cashmere/lb. of liveweight, goats in AK and MT produced more cashmere than those in TX. Unfortunately, the effect of location was probably confounded in 1999 by a liveweight effect since we were unable to maintain similar weights at the 3 locations. The Cashmere goats in TX produced coarser down than those in MT and AK but as with production, this could be ascribed to liveweight differences among locations. Staple lengths of guard hair were greater for the AK versus the MT and TX goats but cashmere down staple lengths were similar among locations.

For the selected Spanish goats, location appears to have affected cashmere yield and production, both of these being greater in MT versus TX, despite a location liveweight difference that would be expected to produce an opposite effect on fiber production.

Though producing less cashmere down, goats in TX grew coarser cashmere than their MT counterparts. Staple length of guard hair was greater in MT but down staple lengths were not statistically different.

For the first year of our experiment, location appears to have had a greater effect on cashmere production by Spanish goats (relatively low producers) compared to that of Cashmere goats. However, differences in liveweight (and other variables) among locations may have confounded the results making our conclusions very tentative at this point in the experiment.

Background

Development of the cashmere producing industry in the USA has been described by Dooling and Dooling (1996) and corresponded with partial disruption of supplies of raw material from traditional sources such as China, Iran, and Afghanistan in the mid to late 1980's. A desire to create a new fiber production industry in the USA led potential producers to seek information concerning all aspects of cashmere production. Much of this information was available from Australia and New Zealand, from both scientists (e.g., as referenced by McGregor, 1996; Walkden-Brown and Restall, 1996; and Pattie and Restall, 1996) and breeders who were actively attempting to establish cashmere production in their own countries. More recently, excellent information has been made available from China (many Chinese authors, 1996). Between 1988 and the present-time, some useful cashmere information has also been generated by U.S. scientists (e.g., Teh, 1990 and Lupton, 1999). Despite the initial optimism of new breeders and some scientists, cashmere production has not grown at the originally anticipated fast rate. In fact, in 1997, the fledgling industry produced only about 1,000 lb. of down. One possible reason contributing to the slow growth of cashmere production in the U.S. may be that potential producers were exposed to the "conventional wisdom" that cashmere can only be successfully produced in high, or/and cold, dry locations. The effects of latitude and possibly altitude on initiation of cashmere fiber growth and onset of shedding are known in general terms. In many cashmere producing goats, down production is initiated close to the time of the longest summer day, whatever the location (see Figure 1). However, shedding begins in midwinter in southern USA (i.e., late January in Texas) but not until March in northern parts of the country (e.g., in Montana). If the rate of fiber production were constant at these two locations, it follows that more fiber would be produced in a northern location because of the longer growing season. In fact, this claim has been made by *inter alia*, cashmere breeders based in the northern

Continued on next page

Latitude Study

Continued from previous page

USA. Since numerous authors (as cited by McGregor, 1996; Litherland 1996) have reported that cashmere follicle activity ceases altogether in late fall or early winter, this hypothesis seems highly unlikely. However, the reported data were usually generated in the S. hemisphere in relatively warm climates. It is possible that goats maintained in much colder climates grow more cashmere by either producing it at a faster rate during the "traditional" growing period or by growing down for a longer period. To the best of our knowledge, an experiment has not been conducted to substantiate such a possibility either in the USA or elsewhere. Consequently, the current experiment was conceived and designed to partially fill this void in our knowledge. The results will be of national and international interest.

Unfortunately in an experiment like this, it is virtually impossible to control all the variables that contribute to fiber quality and quantity of production while attempting to generate the data on a fairly restricted budget. Thus, in the planned experiment numerous effects will be confounded (e.g., latitude, altitude, longitude, nutrition, and animal health). Nevertheless, some major variables will be fixed (e.g., genetics, health program, and fleece testing procedures) so that ultimately the major effect on cashmere production and quality will be location which conceptually includes local customary management.

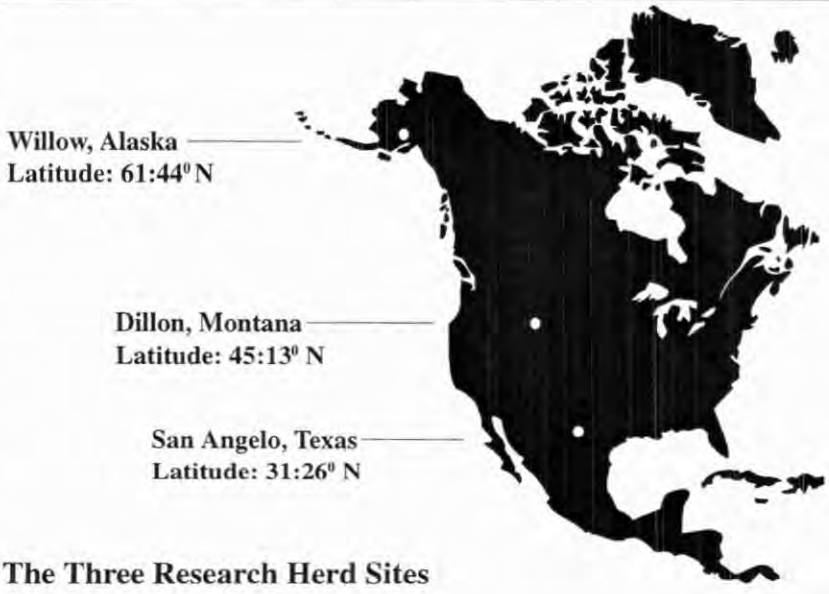
Method

Approximately 60 each of Cashmere (C) and selected Spanish (S) yearling castrate goats were selected from populations of contemporary animals in flocks being

Table 1.
Geographical and climate data for the three research sites

	Research Sites		
	Susitna Ranch Willow, Alaska	Pioneer Mountain Farm Dillon, Montana	Texas Agricultural Experiment Station San Angelo, Texas
	(Talkeetna weather station)	(Helena weather station)	(San Angelo weather station)
Latitude, °	61:44N	45:13N	31:26N
Longitude, °	150:03W	112:38W	100:27W
Elevation, ft.	350	5,096	1,848
Average annual temperature, °F	33	44	64
Average summer temperature, °F (J,J,A)	56	66	81
Average winter temperature, °F (D,J,F)	12	22	46
Annual extremes of temperature, °F	-48 to 91	-42 to 105	-4 to 111
Average annual rainfall, in.	29	12	20
Average annual snowfall, in.	115	47	3
Average annual wind speed, mph	4	7	10

Sources: The National Climatic Data Center, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, and http://www.indo.com/distance/



The Three Research Herd Sites

Continued on next page

Latitude Study
Continued from previous page

maintained in Montana (MT) and Texas (TX), respectively. The flocks belonged to Tom and Ann Dooling, Pioneer Mountain Farm, Dillon, MT and Tom Syfan, Three Mill Ranch, Mountain Home, TX. Criteria for original selection were subjectively assessed body size, fiber production, and fiber quality (fineness and style). We attempted to select animals that appeared uniform in size, appearance, and fiber production. Genetics in the Dooling flock originated from the Karakan stud in Australia and selection pressure for the past 10 yr. had been for increased cashmere production and quality. In contrast, the Syfan goats resulted from a 15-yr. selection program for increased cashmere and meat production in a closed flock of black Spanish goats.

Following acquisition, all goats were shorn (prior to initiation of shedding) and subsequently weighed. Raw fleeces were packaged individually and sent to the Wool and Mohair Research Lab, Texas Agricultural Experiment Station for weighing and analysis. The following data were obtained for each fleece: grease fleece weight; lab scoured yield (ASTM, 1998a); guard hair and down staple lengths (ASTM, 1998b); theoretical cashmere down yield using the Optical Fibre Diameter Analyser (Lupton et al., 1995); and average fiber diameter of down, also using the Optical Fibre Diameter Analyser (IWTO, 1995).

Twenty goats of each type were then assigned and subsequently transported to the three research sites (Table 1) in June, 1998. Within type, the animals were "blocked" on yearling liveweight and raw fleece weight, cashmere yield, down fiber diameter and guard hair and down staple lengths of their first fleeces. In this way, the mean values of all measured variables of each group of goats at each location (within type) were not different (P> .05, Table 3) at the beginning of the experiment.

Table 2.
Target weights for growing goats

Age, mo.	Date	Liveweight, lb.	
		Cashmere	Spanish
12	5/98	36	47 (actual)
18	8/98	85	
24	2/99	100	
30	8/99	115	
36	2/00	135	
42	8/00	135	
48	2/01	135	
54	8/01	135	
60	2/02	135	

Since maintenance requirements and available feed resources were expected to be substantially different among locations, the goats were fed according to local customs with locally common types of hay (and other supplements) to achieve and subsequently maintain the target weights listed in Table 2.

Goats were weighed twice a year, immediately after shearing and six months later. In this way, recommendations were made to increase or decrease feed levels to better approach the target weights. A comprehensive drenching and health maintenance program was installed at each location to attempt to ensure good health in the goats. Since year effects are expected to be substantial, the experiment will be continued for at least three years.

Results and Discussion

Liveweight, fleece and cashmere fiber data for the yearling goats are summarized in Table 3. At one year of age, S goats (n =64) were heavier than the C goats (n =63; 46.7 versus 36.0 lb, P <.05) but produced less grease fleece (145 versus 228 g, P <.05) and less cashmere down both in terms of actual g of cashmere/animal and when expressed as fiber production per unit of liveweight (.5 g versus 1.1 g/lb liveweight). Actual cashmere yields from the raw fleeces were comparable (15.6%), as were cashmere average fiber diameters (AFD, 15.7 µm), standard deviations (SD, 3.7 µm) and coefficients of variation (CV, 23.6%). Guard hair and cashmere from the C goats were longer (P <.05) than from the S goats (3.6 versus 2.5 in. and 1.7 versus 1.3 in., respectively). Variability among staples (CV, %) was not different between the two breeds.

Based on these yearling liveweights, fleece and fiber properties, the goats were assigned and transported to the three research sites. One cashmere goat died, en route to AK from MT. Because of a potential health problem, we were not allowed to transport S goats from TX to AK in 1998. The S goats that were originally destined for AK were instead transported to MT where they were maintained for one year prior to going to AK in June, 1999. During the first full year of this experiment, 2 other C goats and 4 S goats died due to accidents (2), internal parasites, and/or exposure to excessively cold weather. Throughout the year, goats were fed

Continued on next page

Latitude Study
Continued from previous page

somewhat differently at each location with a view to attaining the indicated target weights. In TX, goats were maintained either in dry lot, in a small trap, or on native range. Rations fed in dry lot contained 15% CP and 65% TDN (4 months) and 13-1/2% CP and 58% TDN (approximately 6 months). Thereafter, the goats were fed large round bales of sorghum hay (approximately 8% CP and 52% TDN) in a small trap with a limited amount of native forage, then finally, were moved to native rangeland having ample forage of medium quality. Salt and clean water were available free choice. In MT, the goats were maintained on irrigated pastures and supplemented with native grass hay. In AK, native pasture was supplemented with Timothy/wild grass hay plus some corn and alfalfa through the winter.

The target weight for all the goats was set at 100 lb. for 2 yr. of age. In their "native" environment of MT, the C goats averaged 61.1 lb. (Table 4) suggesting that the growth potential of these goats was overestimated. In Texas, the C goats averaged 84.7 lb. while in Alaska growth was much slower and the goats averaged only 48.5 lb. Herein lies a potentially very serious problem that will affect the outcome and validity of the experiment. We are currently attempting to remedy this by further adjusting nutrition so that bodyweights at each location will become more similar. In contrast, we appear to have underestimated the growth potential of the S goats. In Texas, average shorn bodyweight was 118.6 lb. (Table 5) while in MT the goats weighed 81.8 lb. Again, we are attempting to rectify this situation.

With a few possible exceptions, goats were shorn prior to the onset of shedding. Shearing in TX occurred on 1/26/99 and in MT on 3/29/99. In AK, the C goats were shorn from 4/19/99 to 5/3/99. Results of the analyses of 60 C and 60 S fleeces are summarized in Tables 4 and 5.

Table 3.
Initial liveweights, fleece (first) and fiber properties for Cashmere (C) and Spanish (S) goats, age ~12 months

	Assigned research site					
	Alaska		Montana		Texas	
Goat type	C	S	C	S	C	S
Number of goats	21	21	21	21	21	22
Liveweight, lb.	35.1	46.4	37.0	46.3	35.9	47.3
Grease fleece weight, g	227.2	137.7	228.1	145.9	229.1	150.8
Lab scoured yield, %	-	-	-	-	-	-
Cashmere yield, %	18.1	15.0	16.2	15.9	14.6	13.7
Cashmere production, g/animal	40.3	20.4	36.7	23.4	32.4	20.9
Cashmere production, g/lb. liveweight	1.17	.44	1.05	.51	.93	.45
Down fiber diameter, µm	15.6	15.4	15.8	15.7	15.9	15.7
SD[a], µm	3.6	3.8	3.8	3.8	3.6	3.7
CV[b], %	22.8	24.4	24.1	23.7	22.8	23.6
Guard hair staple length, in.	3.6	2.5	3.5	2.6	3.6	2.5
SD, in.	.5	.5	.7	.5	.6	.6
CV, %	15.0	20.9	20.0	18.8	18.4	21.9
Down staple length , in.	1.8	1.3	1.7	1.4	1.7	1.3
SD, in.	.4	.3	.4	.3	.4	.3
CV, %	22.2	26.6	25.0	24.1	24.3	22.6

[a]Standard deviation
[b]Coefficent of variation

Cashmere Goats (~24 months)

Grease fleece weight
Although weights were arithmetically larger in TX than in MT, the means were not statistically different (P> .05). Goats in AK produced less raw fleece than those in the other states.

Lab scoured yield
The TX goats produced slightly cleaner fleeces than the AK goats. MT fleeces were intermediate.

Cashmere yield
No statistical differences among states but arithmetically, AK > MT > TX.

Cashmere production
In terms of clean cashmere down production per animal, no difference among location. However, when expressed in terms of cashmere production per unit of liveweight, AK and MT goats produced more cashmere than those maintained in TX. Drawing conclusions from this observation at this point is difficult due to the substantial differences in bodyweight at the 3 locations. Within species and breed, smaller fiber bearing animals normally grow more fiber/unit of bodyweight than larger animals.

Cashmere fiber diameter
Goats maintained in TX produced coarser fibers than those in MT. Similarly, the MT cashmere was coarser than that produced in AK.

Continued on next page

Latitude Study

Continued from previous page

All these differences are significant (P < .05). Again, within species and breed, larger animals generally grow coarser fibers than smaller animals, so this effect was not surprising.

Staple length

Guard hair of AK goats was longer than MT and TX goats. Down staple lengths and variabilities were not different among locations.

In summary, it is important that we feed the animals to obtain more similar liveweights at each location. Otherwise, the effects of location on cashmere production cannot be clearly separated from the effects of liveweight.

Spanish goats (~24 months Table 5)

Grease fleece weight

These weights were similar (P> .05) for the TX and MT locations.

Lab scoured yield

Scoured yields were not different (P> .05) between locations.

Cashmere yield

Fleeces produced in MT were higher (P <.05) yielding than those produced in TX.

Cashmere production

Expressed as production/animal and g of cashmere/lb. of liveweight, the goats in MT outproduced their TX counterparts. This is an important observation, particularly since the TX goats were 36 lb. heavier (on average) than the MT goats at the time they were sheared. For this first year of data collection, it appears that this type of goat is capable of producing more cashmere in MT than in its native TX. It will be very interesting to see if

Continued on next page

Table 4.
Liveweights, fleece (second) and fiber properties for Cashmere goats at three locations, age ~24 months

	Research site		
	Alaska	Montana	Texas
Number of goats	18	21	21
Liveweight, lb.	48.5[c]	61.1[b]	84.7[a]
Grease fleece weight, g	377.4[b]	481.4[a]	507.2[a]
Lab scoured yield, %	92.6[b]	94.8[a,b]	95.9[a]
Cashmere yield, %	28.4	25.5	22.9
Cashmere production, g/animal	101.1	122.2	112.3
Cashmere production, g/lb liveweight	2.2[a]	2.0[a]	1.3[b]
Down fiber diameter, µm	16.1[c]	16.8[b]	17.9[a]
Sd[d], µm	3.6	3.7	3.8
CV[e], %	22.6[a]	21.8[a,b]	21.3[b]
Guard hair staple length, in.	4.0[a]	3.6[b]	3.4[b]
SD, in.	.7	.6	.6
CV, %	19.5	16.9	19.0
Down staple length, in.	3.4	3.2	3.3
SD, in.	.7	.5	.5
CV, %	22.1	18.6	16.2

[a,b,c] Within a row, means having different superscripts differ (P < .05)
[d] Standard deviation
[e] Coefficient of variation.

Table 5.
Liveweights, fleece (second) and fiber properties for Spanish goats at three locations, age ~24 months

	Research site		
	Alaska	Montana	Texas
Number of goats	0	39	21
Liveweight, lb.	-	81.8[b]	118.6[a]
Grease fleece weight, g	-	406.4	418.3
Lab scoured yield, %	-	96.0	95.2
Cashmere yield, %	-	20.2[a]	15.9[b]
Cashmere production, g/animal	-	78.1[a]	63.8[b]
Cashmere production, g/lb liveweight	-	.98[a]	.55[b]
Down fiber diameter, µm	-	17.0[b]	18.3[a]
SD[c], µm	-	3.5[b]	3.8[a]
CV[d], %	-	21.0	21.0
Guard hair staple length, in.	-	2.9[a]	2.4[b]
SD, in.	-	.5	.4
CV, %	-	18.1	18.1
Down staple length, in	-	2.6	2.2
SD, in.	-	.4	.5
CV, %	-	16.9	20.8

[a,b] Within a row, means having different superscripts differ (P <.05)
[c] Standard deviation
[d] Coefficient of variation

Latitude Study
Continued from previous page

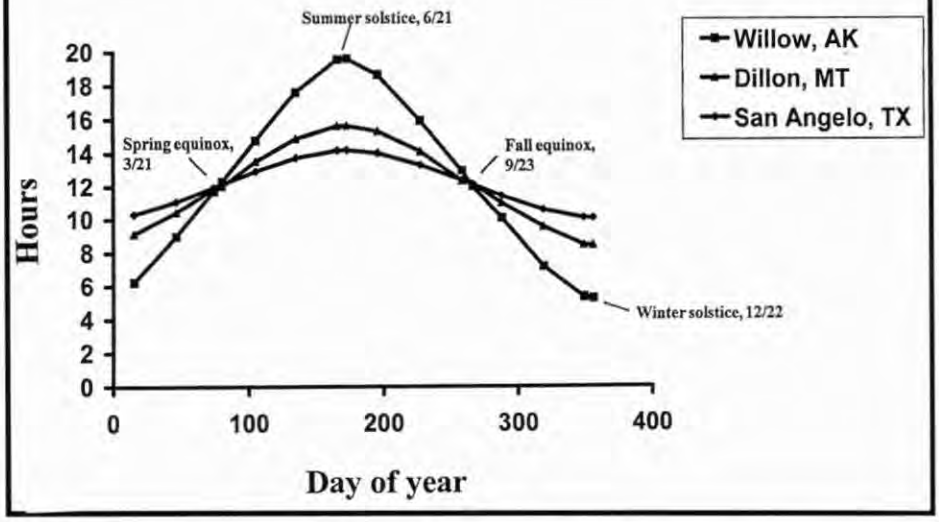
this difference persists in subsequent years of the study.

Cashmere fiber diameter
Goats in TX produced coarser (P <.05) cashmere than those in MT.

Staple lengths
Guard hair on the MT goats was longer (P <.05) than that on the TX goats. Although not statistically different, down staple length of MT goats was greater than that in TX goats.

In summary, location does appear to have affected cashmere production of these Spanish goats. Although considerably smaller in MT, these goats grew more and finer cashmere than their TX counterparts. Again, data collected in future years when animal liveweights are more similar will help us decide if this year's observed differences are indeed real.

Figure 1. Annual changes in day length (sunrise to sunset) at the three research sites (1999)



References

ASTM. 1998a. Standard test method D 584 for wool content of raw wool - laboratory scale. Annual Book of ASTM Standards. Sec. 7, Vol.07.01: 201-205. ASTM, West Conshohocken, PA.

ASTM. 1998b. Standard test method D 1234 for sampling and testing staple length of grease wool. Annual Book of ASTM Standards. Sec. 7, VoL 07.01: 300-303. ASTM, West Conshohocken, PA.

Dooling, T.A. and A.R. Dooling. 1996. An overview of the status of the cashmere industry in the United States of America. Proc. VI lnt, Conf. on Goats, Beijing. Vol 1: 317-320.

IWTO. 1995. Measurement of mean and distribution of fiber diameter of wool using an Optical Fibre Diameter Analyser (OFDA). IWT0 47-95. International Wool Secretariat, Ilkley, U.K.

Litherland, A. 1996. Physiological factors affecting fiber growth in cashmere goats. Proc. 6th Ann. Cashmere Prod. America Conf. Laramie, WY: 68-71.

Lupton, C.J., D.L. Minikhiem, F.A. Pfeiffer, and J.R. Marschall. 1995. Concurrent estimation of cashmere down yield and average fiber diameter using the Optical Fibre Diameter Analyser. Proc. 9th Int. Wool Text. Res. Conf. Biella, Italy. Vol II: 545-554.

Lupton, C.J., F.A Pfeiffer, and A.R. Dooling. 1999. Prediction of cashmere style using objective fiber measurements. Sheep and Goat Res. J. 15,1: 1-4.

Many Chinese authors. 1996. Proc. VI Int. Conf. on Goats, Beijing. Vol 1 and 2.

McGregor, B.A. 1996. Environmental, nutritional, and management influences on quality and production of mohair and cashmere, Beijing. Proc. VI Int. Conf. on Goats. Vol 1: 285-299.

Pattie, W.A. and B.J. Restall. 1996. Selection responses in cashmere goats - results from the Wollongbar selection lines. Proc. 6th Cashmere Prod. America Conf,, Laramie, WY: 47-63.

Teh, T.H. 1990. The feasibility and potential of a cashmere producing industry. Proc. 3rd. Cashmere Prod. America Conf., Tulsa, OK: 1-15.

Walkden-Brown, S.W. and B.J. Restall. 1996. Environmental and social factors affecting reproduction. Proc. VI Int. Conf. on Goats. Beijing. Vol 2: 762-775.

Dr. Lupton presented this paper in Missoula, Montana during the October 29 - 30, 1999, PCMA BOCC V Conference.

Calendar of Events

January 13, 2000
Cashmere Goat Show,
National Western Stock Show & Rodeo, 4655 Humboldt St, Denver, Colorado, 80216-2818, phone 303-297-1166, Website for detailed calendar of events: http://www.nationalwestern.com
Entry deadline December 15, 1999, entry fee $20/goat, stalls provided. CaPrA sanctioned show held under the rules, bylaws and point system approved by CaPrA.

January 14 - 16, 2000
Fiber Arts 2000, exhibit and sale at Sutter Creek Auditorium, Sutter Creek. Info: Sutter Creek Business & Professional Assoc, PO Box 1234, Sutter Creek, CA 95686, phone 800-400-0305.

January 15, 2000
Pygora Goat Show & Fiber Frenzy (6th annual)
Fiber, fleeces, vendors, goat show, demonstrations, free admission, 10 AM to 4 PM, Washington County Fairgrounds, The Armory Building, Hillsboro, Oregon.
Info: Lisa Roskopf, 503-985-3331, email: lisa@hmrpygoras.com

January 21 - 22, 2000
Roe Day Celebration of Spinners, Sam Houston Memorial Museum, Huntsville, TX. Info: Tamara Chasteen, 175 Scott Rd., Huntsville, TX 77320

March 23 - 26, 2000
Fibers Through Time, state conference, Central Arizona College, Coolidge. Info: Lynn Silberschlag, 6481 Avenida de Posada, Tucson, AZ 85718, phone 520-299-1418, email: ruslyn@aol.com

May 15 - 20, 2000
Conference internationale sur les caprins (7th International Conference on Goats), Tours, France. Sponsored by the International Goat Association. Official working languages of the Conference: French and English.
Diversified scientific program of worldwide interest including round tables, conventions on special topics, technical visits and tourist excursions. Registration deadline January 31, 2000. Info: IGA, 1015 Louisiana St., Little Rock, AR 72202.

June 22 - 25, 2000
Convergence 2000, biennial conference of Hand-

Association Contacts

American Meat Goat Association
W. E. Banker, President, 512-384-2829

Cashmere America Co-operative
Joe David Ross, Manager, 915-387-6052
fax: 915-387-2642
Wes Ackley (Maine) 207-336-2948
Marti Wall (Washington) 360-424-7935

Cashmere Producers of America (CaPrA)
Kris McGuire, President, 970-493-6015
email: krisvadale@aol.com
Membership info: Marilyn Burbank, PO Box 2067, Rogue River, OR 97537, email: burbank@cdsnet.net

Colorado Cashmere and Angora Goat Association (CCAGA)
Carol Kromer, Club Contact, 719-347-2329

Eastern Cashmere Association (ECA)
Gloria Rubino, President, 570-629-6946
Toadhaven@aol.com

North West Cashmere Association (NWCA)
Guy Triplett, President, 541-388-1988
harvest@empnet.com

Professional Cashmere Marketers' Association (PCMA), Tom and Ann Dooling
406-683-5445
ann@MontanaKnits.com

Pygora Breeders Association (PBA)
Inga Gonzales, Secretary
PO Box 565, Knightsen, CA 94548
phone: 925-625-7869
email: Igonozo@goldstate.net

Texas Cashmere Association (TCA)
Dee Broyles, President
806-489-7645 office
806-489-7959 home

Wild Goat Women
Debbie Walstead, Chairperson, 719-495-2962

Breeders

CANADA

GIANT STRIDE FARM
Pat Fuhr
RR #3
Onoway, Alberta, Canada,
TOE IVO
403-967-4843
email:
giantstride@compuserve.com

LLONE PINE FARM
Myrna Coombs
PO Box 863
Onoway, Alberta, Canada
TOE-1VO
780-967-4583

UNITED STATES

CALIFORNIA

HENRY LOWMAN
PO Box 2556
El Granada, CA 94018
650-225-1171
email: hlowman@
compuserve.com

COLORADO

MARSHALL'S ORGANIC ACRES
9217 N. County Rd. 7
Wellington, CO 80549-1521
970-568-7941
email: PLCMARSHAL@aol.
com

ROLIG GOAT RANCH
Cashmere Producing Goats
Steven or Ellen Rolig
8435 CR 600
Pagosa Springs, CO 81147
970-731-9083
email:
roliggoatranch@
pagosasprings.net

IDAHO

SHREFFLER TARGHEE & CASHMERE
Ken & Loyce Shreffler
589 Center Valley Road
Sandpoint, ID 83864
phone & fax: 208-263-5038
email: loyce@micron.net

MAINE

BESSEY PLACE CASHMERE
Wes and Marilyn Ackley
319 Brock School Road
Buckfield, ME 04220
207-336-2948
email: ackley@megalink.net

BLACK LOCUST FARM
Yvonne Taylor
PO Box 378
Washington, ME 04574
207-845-2722
email: Lance@airs.com

GRUMBLE GOAT FARM
Linda N. Cortright
574 Davis Rd.
Union, ME 04862
207-785-3350
fax: 207-785-5633
email: grumble@midcoast.
com

HARDSCRABBLE FARM
Hattie Clingerman
PO Box 682
Winterport, ME 04496
207-223-4211

MARYLAND

MIDDLETOWN FARM
George and Barbara Little
8123 Old Hagerstown Rd
Middletown, MD 21769
phone & fax: 301-371-8743
email: glittle640@aol.com

RED HOLLOW FARM
Lynda and Brian Bell
4806 Porterstown Rd.
Keedysville, MD 21756
301-432-7292
email: bell@intrepid.net

MONTANA

CASTLE CRAGS RANCH
Steve and Diana Hachenberger
894 Pheasant Run
Hamilton, MT 59840
phone & fax:
406-961-3058
email: cashmere@bitterroot.net

DOUBLE OUGHT RANCH
Frank and Sally Zito
HC 60, Box 21
Brusett, MT 59318
email: dblought@midrivers.
com

**EDENS,
DAN AND SHERYL**
1825 Sierra Rd E.
Helena, MT 59602
406-458-5317
email: edensdan@initco.net

J & K CASHMERES
Jim Haman
Kathy Sumter-Haman
604 2nd St. S.W.
Park City, MT 59063
406-633-2210
fax: 406-633-9157
email: JKCashmere@yahoo.
com

SMOKERIDGE CASHMERE
Craig Tucker
Yvonne Zweede-Tucker
2870 Eighth Lane NW
Choteau, MT 59422
406-466-5952
Fax: 406-466-5951
email: smokeridge@marsweb.
com

NEBRASKA

AIRY KNOLL FARMS, INC.
Richard & Harriet Jensen
76460 Road 424
Cozad, NE 69310
308-784-3312

HI-PLAINS CASHMERE
Julie and Alex Becker
160482 County Road C
Mitchell, NE 69357
308-623-2627
email:
ajbecker@PrairieWeb.COM

NEVADA

ROYAL CASHMERE
Eileen Cornwell
Byron Higgins
5455 Reno Highway
Fallon, NV 89406
phone & fax: 775-423-3335
email:cashmere@phonewave.
net

NEW JERSEY

BLACK FEN FARM
Virginia Hinchman
Kevin Weber
117 RD 2, Rt. 46
Hackettstown, NJ 07840
908-852-7493
fax:908-852-1336 (call first)
email:blackfen@juno.com

NEW YORK

TROWBRIDGE RUN FARM
Christy A. Winton
80 East Hill Rd.
Middleburgh, NY 12122
518-827-4431
email: atworth@telenet.net

Directory

OHIO

TAMARACK RANCH
Bob and Ann Wood
12000 Old Osborne Road
PO Box 567
South Vienna, OH 45369-0567
937-568-4994
email: tamarack@erinet.com

OKLAHOMA

TEXOMA KIDS & CASHMERE
J. D. and Karen Chandler
Rt 1, Box 37
Mannsville, OK 73447
580-371-3167
fax: 580-371-9589
email: jkc@flash.net

OREGON

ABORIGINAL FIBRE
razberi kyan (Pat Almond)
PO Box 899
Mulino, OR 97042-0899
503-632-3615
razberi@teleport.com

CASHMERE GROVES
Pat Groves
16925 S. Beckman Rd.
Oregon City, OR 97045
503-631-7806
email: pgroves@europa.com

DUKES VALLEY FIBER FARM
Fran and Joe Mazzara
4207 Sylvester Drive
Hood River, OR 97031
541-354-6186
email: FMAZZARA@gorge.net

FOXMOOR FARM
Carol and Carrie Spencer
1178 N.E. Victor Point Road
Silverton, OR 97381
Phone: 503-873-5474
Message: 503-873-5430
email: foxmoorfarm@juno.com

GOAT KNOLL
Paul Johnson/Linda Fox
2280 S. Church Rd.
Dallas, OR 97338
503-623-5194
email: goatknol@teleport.com

HARVEST MOON FARM
Guy and Karen Triplett
63300 Silvis Road
Bend, OR 97701
541-388-8992
email: harvest@empnet.com

HAWKS MOUNTAIN PYGORA'S
Lisa Roskopf & George DeGeer
51920 SW Dundee Rd.
Gaston, OR 97119
503-985-3331
Fax: 503-985-3321
email:lisa@hmrpygoras.com

HOKULANI FARMS
Cynthia and Karl Heeren
22260 East Highway 20
Bend, OR 97701
541-388-1988
email: hokulani@bendnet.com

MCTIMMONDS VALLEY FARM
Janet and Joe Hanus
11440 Kings Valley Hwy.
Monmouth, OR 97361
503-838-4113
email: janhanus@open.org

NORTHWEST CASHMERES
Carole Laughlin
21935 SW Lebeau Rd.
Sherwood, OR 97140
503-625-8816
email: carolenwcash@integrityonline.com

OVER THE RAINBOW FARM
Deb Miller
95150 Turbow Ln.
Junction City, OR 97448
541-998-3965

ROARING CREEK FARMS
Arlen and Cathy Emmert
27652 Fern Ridge Road
Sweet Home, OR 97386
503-367-6698
email:cashmere@proaxis.com

SOMERSET CASHMERE
Julie and Jim Brimble
12377 Blackwell Rd.
Central Point, OR 97502
541-855-7378
email: brimble@cdsnet.net

SUNSET VIEW FARM
Jean Ferguson/Carolyn Bowser
4890 Sunset View Ln. So.
Salem, OR 97302
503-581-9452
email: carolbow@open.org

WILD FLOWER FARM
Michele and Perry Lowe
4295 Perrydale Rd.
Dallas, OR 97338
503-831-3732
email: mlowe@navicom.com

TEXAS

FOSSIL CREEK FARM
Norman and Carol Self
1077 Cardinal Drive
Bartonville, TX 76226-2620
940-240-0520
fax: 940-240-7024
email: NTSELF@MSN.COM

WILDBERRIES FARM
Barry Steinberg
171 CR 153
Whitesboro, TX 76273
903-564-9776
fax: 903-564-9152
eamil: Wldbarry@aol.com

UTAH

KANARRA KASHMERE
Ron and Jan Gerrity
PO Box 420186
Kanarraville, UT 84742
435-559-9472
fax: 702-242-9436
email:
GerrityGroup@Msn.com

VIRGINIA

FOGGY BOTTOM FARM
Marilee and John Williamson
990 Old Hollow Rd.
Buchanan, VA 24066
540-254-1628
email: mhwabc@juno.com

RANEY DAY KIDS
Craig and Lucy Raney
3627 Va. Ave.
Goshen, VA 24439
540-997-1121
Fax: 540-997-1124

STONEY CREST FARM
Anne and Roy Repaske
570 Paddy's Cove Lane
Star Tannery, VA 22654
Phone/fax: 540-436-3546
email:cashmere@shentel.net

WASHINGTON

BREEZY MEADOW CASHMERE FARM
Douglas and Roberta Maier
810 Van Wyck Rd.
Bellingham, WA 98226
360-733-6742
email: fibergoat@earthlink.net

Continued on next page

Breeders Directory

Continued from previous page

MORE WASHINGTON

BROOKFIELD FARM
Ian Balsillie/Karen Bean
PO Box 443
Maple Falls, WA 98266
360-599-1469 or
360-715-1604

KELLERS KRITTERS
Kay Keller
11030 Grandview Rd.
Arlington, WA 98223
360-435-6123

LIBERTY FARM (NLF)
Cliff and Mickey Nielsen
5252 Hwy 12
Yakima, WA 98908
509-965-3708
email: Cnielnlf@aol.com

RAINFLOWER FARM
Sue Lasswell
37003 Mann Rd.
Sultan, WA 98294
360-793-9590
email: Rainflower@compuserve.com

STILL WATERS CASHMERE
Moon and Diana Mullins
PO Box 1265
Twisp, WA 98856
509-997-2204/509-429-0778
email: dmullins@methow.com

WALLFLOWER FARM
Dan and Marti Wall
16663 Beaver Marsh Road
Mt. Vernon, WA 98273
360-424-7935
Fax: 360-428-4946
email: cashmere@sos.net

WINDRIDGE FARM
Becki and Jim Belcher
11810 272nd St. E.
Graham, WA 98338
360-893-7893

Internet listing of these breeders can be found on the net at: http://www.teleport.com/~goatknol/breeders.htm

1999 Canadian Goat Gala

Goat Gala livestock exhibit pens and vendor displays. Several goat associations and farms had displays around the edges of the pen area.

Judge Connie Ross inspects the line up of does in a cashmere goat class.

Fairgoers inspect a display of fleeces, skeins and completed garments, helping them to connect the goats in the pens with the sweaters on their backs.

1999 Canadian Goat Gala

By Roving Reporter, Linda Fox

The 4th annual Goat Gala was held in Edmonton, Alberta, Canada at the Northlands Park AgriCom and Sportex on November 5 - 7, 1999, in conjunction with the Farmfair International Stock Show and Rodeo . Goat Gala events included cashmere, Angora, dairy, Boer, percentage Boer and meat goats on exhibition, goat shows, a fleece, skein and finished garment competition and display, an obstacle contest and an educational workshop. This was the first year featuring a commercial meat goat show.

For you east coast food ~~junkies~~ aficionados, the fair offered a culinary delight known as "Little Rascals," which is a bag full of a dozen tiny little (delicious) donuts for only CN $1.50. Also, you must remember when showing goats in Canada, that their ribbon colors are reversed from the standard US awards. Don't get too excited about that blue ribbon as it is only a second place award. The red ribbons count here.

Austin, Texas goat judge, Connie Ross was brought in to judge the Boer, percentage Boer, Angora, Cashmere and commercial meat goat shows. This was her second year as judge for the event and it was noted that Ms. Ross is one of only two judges in the US qualified to judge all of these classes: Angora, cashmere, Boer and meat goats. She arrived suitably dressed for the goat show in a cashmere turtleneck sweater worn underneath a mohair sweater. She may have been the only person in the building who was warm. It was extremely cold in Edmonton during the show and it is difficult to keep alarge exhibit building at a comfortable temperature. There were eight breeders exhibiting cashmere goats (and trying to stay warm) at the Gala.

Ms. Ross noted that she found a great improvement in the cashmere classes this year over last year. She noted that in the US, young adult market goat shows are bigger now than market lamb or swine shows. Children are finding that goats are more fun to care for than sheep or pigs. She explained to the show audience that a cashmere goat is a meat goat with icing on the cake. Their warm cashmere coat makes them ideal foragers in the colder climates. For judging cashmere goats, Ms. Ross places 50% of her scoring on the body of the goat and 50% on the cashmere on the goat. Since the show was held at the beginning of November, the goats were probably not fully fleeced, but most looked very fuzzy to me.

For judging, Ms. Ross inspected the goat and then pulled cashmere from neck, side and rump of each goat. She explained that she is looking for length, character, fineness, coverage and uniformity of fleece. She explained that long guard hair takes away from the cashmere yield, but that she doesn't pay as much attention to yield as the other fleece characteristics. A kid's fleece should be fine. The goat's coarsest fleece will usually be found on the sides of the neck and the britch. She said she would tolerate coarser neck fiber on an older buck as long as it maintains its character. She explained that she would never give a championship to a younger animal unless there are no older animals in the show as she just doesn't know if their fleece will hold through the next year.

Ms. Ross explained that it was often difficult to judge a cashmere goat's body. Since they are a feral goat, they don't often stand well in the ring. The goat's body is judged on the total volume of meat and the amount of the prime meat cuts. She noted that loin cuts (behind the second rib) retail at $9.50/lb. and leg cuts bring $7.50/lb., while stew and shoulder cuts retail for only $2.50/lb. On a goat, there is not much meat on the rib. A goat should be wide and smooth, from the shoulder to the pin bones and a wide back leg at the stifle (the joint above the hock— corresponding to a human knee) is important.

Goat shows for the Angoras, Boers and percentage Boers were held November 6th. Shows for cashmere and the commercial meat goat classes were held November 7th. Shows for the cashmere and commercial meat categories were alternated, giving handlers time between classes to retrieve and put away goats, snack and try to stay warm.

On exhibit near the goat show arenas were a small display of fleeces, handspun skeins, finished garments and crafts, and a couple of spinners demonstrating how you get from that bag of fleece at one end of the table to the gorgeous sweater on the other. It was a great way for fairgoers to connect the goats in the ring to the fiber and the resulting consumer products.

Additional photos and the results of the cashmere goat show will be in the next issue.

Judge, Connie Ross, inspects fiber from cashmere buck, SMR Great Northern, adult buck being shown by Dan Workman.

Classified Advertising

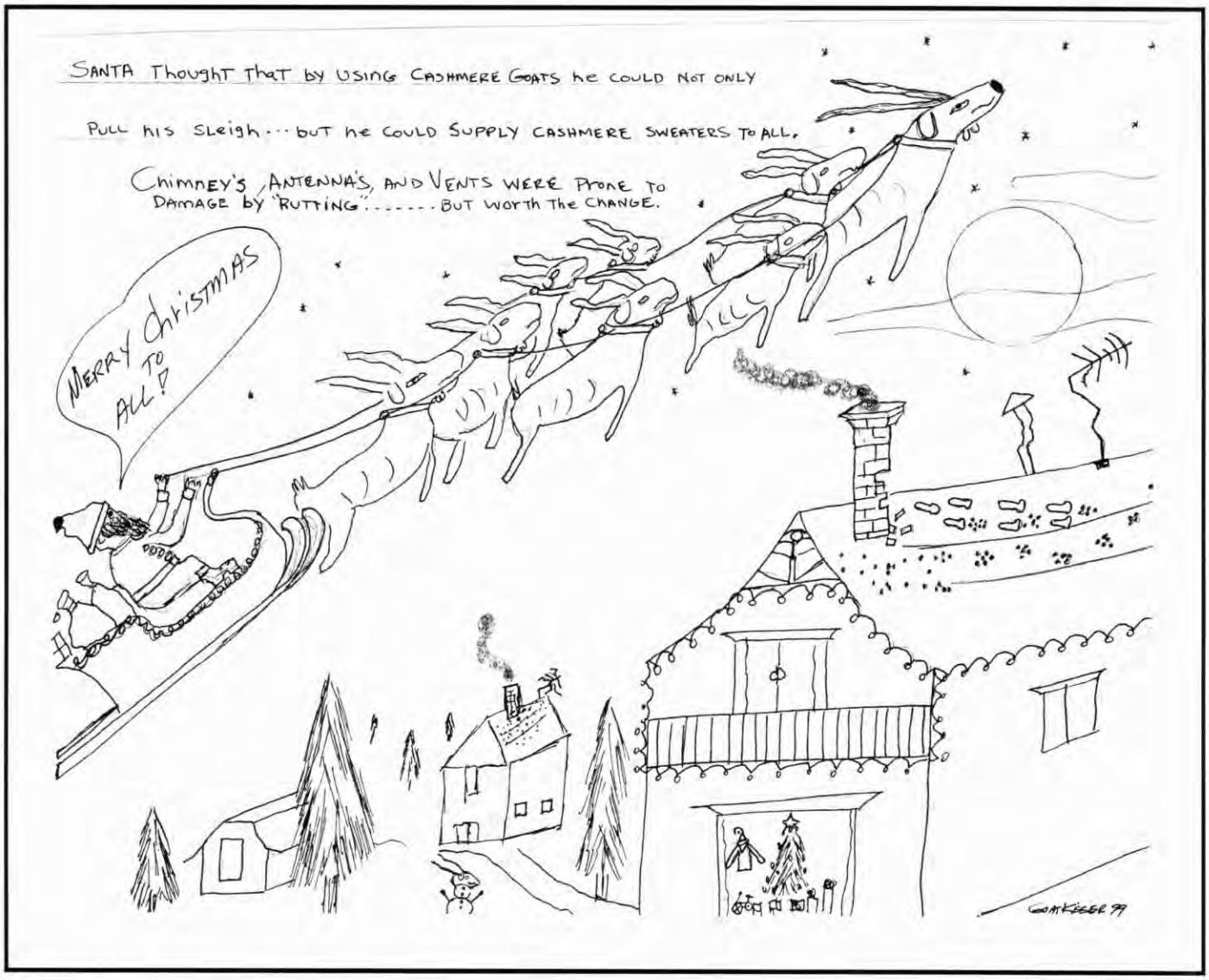
Buster the Cashmere Goat
Children's book by Paul G. Johnson, CM Ace Reporter. 66 pages, includes photographs. Suitable for read-aloud for young children, 3rd to 4th grade reading level, or for brightening the lives of bored adults. Great Christmas gifts. Guaranteed only happy endings. To order, send $7.50 (includes shipping) to CashMirror Publications.

Cashmere 2000, Inc., Limited number of superb bucks available. Tom or Ann Dooling, 406-683-5445.

Cashmere goats—does, doelings, bucks for sale. Healthy vigorous stock. Goats of many colors to choose from. Individual goats or starter herds. Goat Knoll, 2280 S. Church Rd., Dallas, OR 97338, phone 503-623-5194, email: goatknol@teleport.com

Maremma Guardian Puppy - born and raised with goats, already guarding well at 7 mos. Healthy, great personality - registered parents. $400. Seattle area, Ph: (360) 758-2927 or email: sunnyhill@nas.com

Yocom-McColl Testing Laboratories, Inc. for individual animal and core testing. Ph: (303) 294-0582
Fax: (303) 295-6944
Email: ymccoll@ix.netcom.com
Website: http://www.ymcoll.com



Display Advertising Rates:

Ad Size	Price (Issue / 4 mos. / 1 yr.)
Business Card	$25 / 100 / 150
1/4 page	$45 / 165 / 410
1/3 page	$65 / 240 / 600
Half Page	$80 / 300 / 730
Full Page	$150 / 550 / 1,370
Other sizes, options	Ask us

Extensive layout or photo screening may be extra.
Payment must accompany ad order.

Classified ads 50 cents/word.

CashMirror Subscription Information

To subscribe

Send: Name
Farm Name (if applicable)
Address with zip code

To: CashMirror Publications
2280 S. Church Rd.
Dallas, OR 97338

Annual Subscription is only $25 for 12 monthly issues! ($35 Canada, $40 Mexico, $50 overseas).

Breeders Directory listing for full year $30.

Notable Quotes

"...Mongolian goat herds are made up of 40% wethers."
...Kris McGuire

"If you name your sheep, they're too fat."
...Dr. Frank Craddock

"I never give a Grand Championship to a younger animal unless there are no older animals in the show; we just don't know if their fileece will hold through the next year."

...Connie Ross, Goat Judge, Austin, Texas

"Cashmere goats are meat goats with a little icing on the cake."

...Connie Ross (11/7/99)

The Deadlines:

Articles, photographs, advertising and other information submitted must be received by the 25th of the month prior to magazine issue date.

If you need assistance designing or laying out a display ad, or fine-tuning an article, earlier is appreciated.

Hawks Mt. ad

Serving northern California, Idaho, Nevada, Oregon, Washington and western Canada

Membership includes NWCA Quarterly Newsletter

Northwest Cashmere Association

NWCA Annual Dues only $25
Cynthia Heeren, *Membership Coodinator*
22260 East Hwy 20, Bend, OR 97701
541-388-1988, email: hokulani@bendnet.com

CASH MIRROR

2280 S. Church Rd.
Dallas, OR 97338

Bulk Rate
U.S. Postage
Paid
Permit #011
Dallas, OR
97338