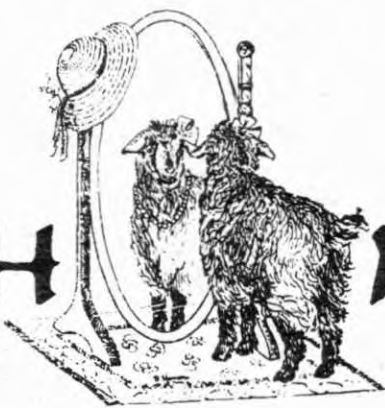




CASH MIRROR

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CASHMIRROR

CASHMIRROR REFLECTING THE CASHMERE INDUSTRY

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The CASHMIRROR welcomes contributions of articles and photographs. If possible type articles in double spacing on one side of the paper.

No responsibility will be taken for material while in transit or in this office, although it will receive maximum care.

On the Cover: Goat from the Russian steppes near Orenburg, Russia which is the grazing ground for the herd in summer.

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Lap Goats

by Miriam Jeswine

Friendly goats that are easy to catch are nice to have around. Yes, they tend to be pesky sometimes. They nibble on your pockets and jump on you with muddy hooves. On the other hand, they don't run you around in circles when you want to catch them, and they don't leap in the air and twist your hand when you finally nab them. People who want just a few goats for a hobby, really do not want wild goats. They want the sensuous pleasure of petting a Cashmere goat. The way to have friendly, pettable goats is to raise them that way. That usually means bottle feeding. Sometimes we have to bottle feed anyway, because something happened to mama goat, or maybe there are too many babies. Then we have to be surrogate mother, and persuade the babies that rubber mamas taste good.

The time to start bottle feeding is as soon as the kid is born. Shortly after birth, the kid will get up on wobbly little legs and start bumbling around, mouthing and hunting for the teat. That is the time

to start bottle feeding, although it is fine, too, if the kid gets the colostrum right from the source. I start by milking the mother, or somebody, right into the bottle I am going to feed from, putting the nipple on, and putting it into the kid's mouth. If the kid has been hunting for the teat, it will take the nipple and start to suck, simple as that. I find that I can stimulate nursing behavior by imitating what happens naturally. That is, the kid will look underneath warm things, like your free hand, or your thigh as you hunker down in the pen. I take advantage of that and put my hand over the top of the kid's head and nose, or slip the kid under my leg. I also imitate the doe's behavior while a kid nurses. She will turn around and lick the kid's rump, so rubbing the rump seems to stimulate suckling. (If we are going to be surrogate mothers, we have to act like mama goats.)

New babies don't drink very much at a time,

so I am happy if they take an ounce or two at first. They sleep a lot and drink a little, but often, for the first week or so. If you can, offer milk every very few hours for the first few days. Here's where a box with a towel in the bottom comes in handy. It's easier to go out to the kitchen than out to the barn in the middle of the night, or in

The time to start bottle feeding is as soon as the kid is born. Shortly after birth, the kid will get up on wobbly little legs and start bumbling around, mouthing and hunting for the teat.

the driving rain. I know a woman who takes kids to work in boxes. They spend her working hours in the back of her pickup, and she feeds them during her breaks. I think that's a bit much, but, in the case of a weak or sickly kid, it is necessary sometimes.

If a kid is too weak or reluctant to suck, I use a flexible bottle, like a plastic pop bottle, and squeeze milk into the mouth. That tactic works for a kid that spent enough time nursing

its mother to refuse to consider a rubber nipple. It's amazing how tightly they can button their little lips. The taste of milk changes their minds pretty fast, especially if you have the patience to let them get a little hungry first.

After the kids have the idea about bottles and they come running for their food, you can save yourself some time by transferring them to a mommy bucket. (Officially they are Lambars.) These are available through a number of catalogs including United Caprine Supply. They consist of a bucket with flexible tubes which insert into rubber nipples stuck into holes in the bucket. The kids learn to use those with lightning speed. I find that those buckets are too big for just one or two kids, so I make smaller versions. I buy the tubes and nipples, drill appropriate holes in a smaller plastic container, a gallon jug is perfect. It's a good way to teach the kids to use the mommy bucket, too. I fill with milk until it's almost running out of the nipples, so the kids get the taste of milk right away. Pretty soon they are sucking the thing dry and looking for more.

The kids will not be

quite as tame as if you, personally, fed them, but if you are pressed for time or have a lot to feed, it can be a real time saver. In fact, the milk doesn't even need to be warmed, and that is a good thing. A mommy bucket of cold milk will keep fresh longer in hot weather than a warm one.

Three tips for healthier kids:

1) Don't overfeed. Kids are greedy, and they'll drink as much as you'll give them. They really don't need more than about two quarts a day. If you give them more, the omasum (one of the four stomachs) becomes over-distended and the rumen fails to develop adequately.

2) To prevent scours, be meticulous in cleaning and



Sassafras

16.6 MFD, 68.6% yield, age 1

Glacier Cashmere

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*Miriam Jeswine
81811 Lost Creek Road
Dexter, Oregon 97431
(503) 937-2253*

*Cashmere Breeding Stock
Maremma Guardian Dogs
U.S.D.A. - S. B. I. R. Research Test Farm*

sanitizing your equipment. Wash everything thoroughly and rinse in a disinfecting solution (a tablespoon of chlorine bleach in a gallon of water will work).

3. Add some *Lactobacillus acidophilus* to their milk the first or second day, and about once a week for scours prevention. You can get this at health food stores. Good quality yogurt could be another good additive. Nancy's is excellent. Avoid the type that's full of sweeteners and additives which suppress the vitality of the friendly bacteria. *Lactobacillus* is a group of bacteria which are desirable in the gut of any creature, even poultry, according to research at OSU. These friendly bacteria enhance food utilization and suppress the development of bad organisms like *E. coli*, a major cause of scours.

I prefer to use goats' milk to raise kids because it is more natural and it's easier to keep the kids from scouring. If goats' milk isn't available, there are milk replacers on the market. It's important not to use too much of the powder when mixing replacer. If a kid develops diarrhea, thin the fluid down for a day or so, and

very gradually come up to strength.

You can wean the kids whenever they are eating a lot of solid food, usually after six to eight weeks, but some people like to feed longer. I notice that the does wean between eight and twelve weeks. They just step on the kid's head, or jump over it when it kneels to nurse. Sometimes they even bite the kid. You don't need to be so drastic. Just reduce the amount of milk you give the kid and be sure there is plenty of feed and water available.

Feeding kids is fun and results in lap goats. These friendly goats will follow you around and let you pet their luxuriously soft coats. You don't have to trap them to handle

them. They'll even try to climb in your lap, especially when they have muddy feet.

RUSSIA RECEIVES CASHMIRROR!!

Dear CashMirror we have just received the first copies of CashMirror here in St. Petersburg. Thank you very much for sending them. They will be very interesting not only for us, but also for the goat breeders and shawl-makers here. An example of whose shawls you can see in this photo.

Sincerely,

Ingrid Bengis
& Galina Khmeleva



Effects of Diet On the Behavior of Young Livestock Guardian Dogs

By Gail Langeloh

Reprinted from DogLog
the official publication of
the first all-breed livestock
guarding dog association.

Editor's Introductions:

It is not unusual for a good working livestock guarding dog to show playful behavior with its livestock at some point in its early life. Chasing, pulling wool, or nipping at tails occurs most often during a dog's first year, when it is young and boisterous. The behavior is usually playful and not predatory, although damage to the sheep can be just as serious.

When Ray Coppinger and his students, Jay Lorenz, John Glendinning and Peter Pinardi, went to Italy in 1982 to study the Italians' methods of managing their dogs, they found this playfulness to occur at much lower frequencies than in the United States. Since the U.S. dogs were the children and grandchildren of dogs imported directly from Italian sheep pastures, the

difference in behavior was most likely not inherited but environmental. One of the environmental variables postulated as a factor was diet. If U.S. dogs were being fed more than they needed, perhaps they were using up the extra energy by playing.

Gail Langeloh, who succeeded Jay Lorenz as Livestock Dog Project assistant (Jay left for Oregon where he set up a "western branch" of the dog project), studied diet and guarding dogs for her master's degree in nutrition at the University of Massachusetts. It was hoped that the study would provide a tool for managing the playful, disruptive behaviors sometimes seen in guarding dogs. This article is based on Gail's thesis.

Introduction

The diets of guardian dogs in Italy and those in the U.S. are quite different from each other. In Italy, the main components are

whey and oats. These are reasonable sources of nutrients and amino acids, but are difficult for dogs to eat and digest in quantities sufficient to provide a surplus of food energy. Whey has a high water content (90+%), and unmilled oats have high bulk and low digestibility. The water and bulk make a dog feel full before it has eaten enough calories to have extra energy to burn. In the U.S., the carefully balanced commercial dog chow provide more than enough energy for growth and activity. The main question of this thesis is: "Could this nutritionally rich diet be responsible for the differences in behavior between these two genetically similar but environmentally different groups?"

Many scientific studies show that nutrition affects behavior. Especially during the prenatal and postnatal periods, inadequate nutrition can result in irreversible abnormalities in the biochemistry and

physical morphology of an animal. Overnutrition, too, can lead to skeletal abnormalities. All of these can easily affect behavior.

Nutrition provides the energy that keeps an organism functioning. When energy intake is low, a normal response is a decrease in activity and/or a decrease in growth. If excess energy is ingested, organisms can turn it into growth and, possibly, into high activity levels-although extra feed is not always

at Hampshire College by student Steve Boval indicated the playful behavior of young livestock guarding dogs could be reduced by taking the dogs off their commercial dog food and feeding them cooked grains.

Methods

Ten Maremma pups from one litter were the subjects of this study, from 74 to 118 days of age. The diets were: 1) Blue Seal pig and

A profile of the nutrients common to both pig pellets and puppy food appears in Chart 1. Besides these nutrients, the puppy chow also contained more vitamins and minerals than the pig pellets.

Apparent digestibility of the three diets was estimated by comparing the kcal needed by the dogs to achieve their final weight, to the food energy they ate. Figures for digestibility were based on the estimates of the food manufacturers. The dogs were weighed biweekly; fecal samples were collected for content analysis. During the last week of the experiment; behavioral data was collected on: 1) feeding activity; 2) individual activity; 3) group activity. Activity was measured in seconds, and consisted of any behavior that required voluntary motion, such as walking or running. Behaviors such as scratching, elimination or drinking were not included, nor were non-active behaviors like sitting or standing. Data was analyzed using the one-way analysis of variance treatment.

Scientists have suggested since the last century that one of the functions of play is to regulate and balance energy in the system.

responsible for extra activity. In humans, hyperactivity seems to be caused by more than diet. Inheritance is also a factor.

Scientists have suggested since the last century that one of the functions of play is to regulate and balance energy in the system. Researches have not been able to prove this, although one study with deer fawns showed that a 33% reduction in milk resulted in an almost even reduction in play. A pilot study done

sow pellets, uncooked; 2) Blue Seal pig and sow pellets, cooked; 3) Blue Seal puppy chow. Pig pellets are nutritionally similar to dog chow, but are not cooked and thereby less readily digestible (which, theoretically, affects the energy available to the dog.) The reason the pellets were cooked for diet 2 was to alter the digestibility, and therefore to determine if the energetic value also changed.

Results and Discussion:

No differences between the diet groups appeared in feeding activity, food intake, or weight gain.

Significant differences did appear in behavior between pups measured in seconds, according to diet. It is somewhat surprising that the most activity was associated with the uncooked pup pellets and puppy food.

Analysis of energy, protein, fat, and fiber in the pups' feces showed how well the nutrients were being used. Energy content was lower, but protein higher for the puppy food group. Fat was different in all three diets, with feces from pig pellets showing the largest amount of fat, then uncooked pellets and puppy food. Fiber, too, differed in all

groups, with uncooked pellets having the most, followed by cooked pellets and then puppy chow.

Sample size for this experiment was low: one group had only two dogs, a male and a female, and the other two groups each had one male and three females. However any variability among the dogs that might be magnified due to the small sample size was minimized by using littermates, and by testing for anomalies. Other problems with the methodology, involving lack of fecal weights and food digestibility data, were minimized by estimating the metabolizable energy on the basis of weight gain and energy intake, based on the food manufacturers' estimates of digestibility. These problems indicate that conclusions cannot be firm, but give an idea what effect diet has on growing sheepdogs.

The National Research Council's Subcommittee on Dog Nutrition (1985) has calculated the energy requirement of adult dogs that weigh between 32 and 45 kg to be 66 kcal/k. Two researchers, Arnold and Elvehjem (1939) found that puppies required twice the

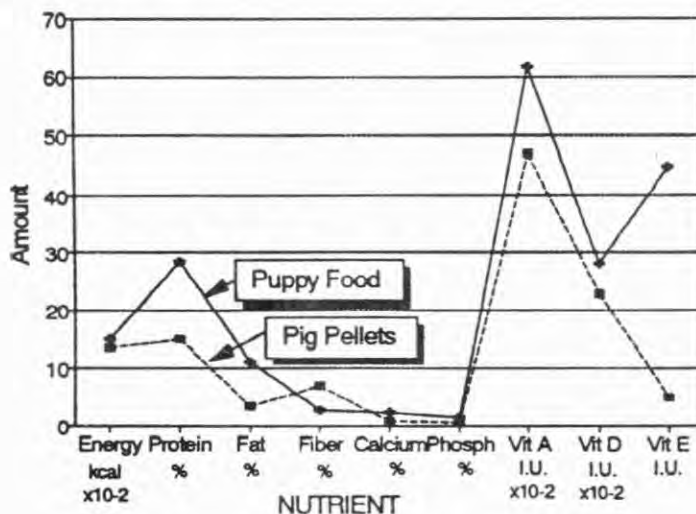
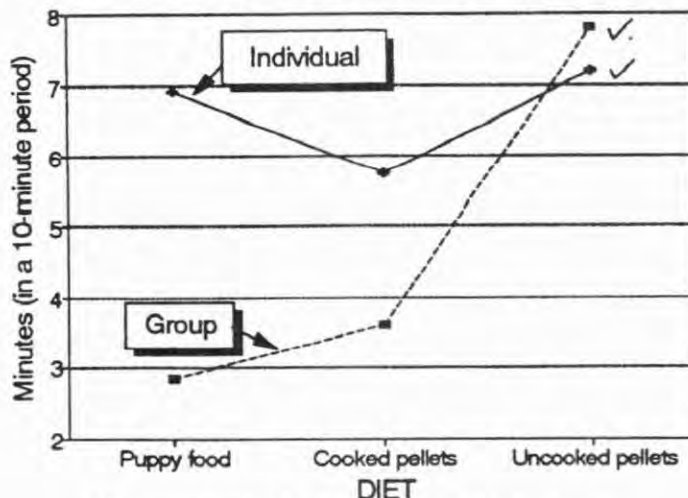


Chart 1. Profiles of common nutrients in the two diets



✓ The uncooked pellet diet was associated with significantly higher activity during tests with both individuals and groups

Chart 2. Average duration of general activity at four months of age

amount of energy (132 kcal/kg for guarding dogs) per unit of body weight as an adult of the same breed. When pups reach 40% of their adult body weight, they need only 1.6% times as much energy (106 kcal/kg) for growth. Chart 3 compares actual intake and NRC requirements for metabolizable energy. Although actual intake figures are higher, no significant difference between the groups appeared.

An analysis of variance showed no significant difference between the actual intake and the NRC requirement. This indicates that the pups all received adequate energy, and also that because the energy in all diets was essentially the same after consumption, any observed behavioral differences were probably not due to the energy value of the diet, in this experiment.

Some interesting conclusions can, however, be made. 1) Dogs appear to have the ability to regulate energy needs through digestibility. 2) Activity levels were significantly different among groups, which may be attributed to differences

in food composition rather than actual caloric intake. 3) The protein requirements of growing puppies should be re-evaluated.

1) The puppy food group received more energy than the pig pellet groups, but secreted less energy. Yet their apparent growth did not vary, nor did the puppy food group use the energy for activity any differently. It seems, then, that dogs can regulate what and how much is digested, and use it accordingly. It also seems that the "regulation" may be influenced by the composition of the diet.

2) Although no differences in energy were found AFTER consumption, behavioral differences were found between the diet groups. However, except for diet and group size, all other parameters were similar (environment, time of sampling, breed). Group size was probably not the cause of differences, because the two groups that differed were the same size. That leaves diet as a probable cause of behavioral differences. Diets differed BEFORE consumption in energy content, protein, fat and fiber. Other researchers agree that diet composition

has different effects on behavior. Rats, for instance, showed different activity patterns when given diets that varied in protein to carbohydrate ration. As that ratio increased, the rats became more active. In our experiments, the puppy food had a 29:58 percent protein to carbohydrate ratio. Cooked and uncooked pig pellets were 15:75 and 17:74 percent, respectively. It is plausible that the higher ratio was responsible for the increased activity found in the pups that ate uncooked pellets. Or, perhaps these pups were hungry and spent more time searching for food. But why a similar response was not found in the cooked pellet group is unclear.

Further analysis of reports in the scientific literature about the thermic effect of food (energy expenditure associated with digestion), which is affected by diet composition and energy content of food as well as nutritional state of the animal, and about how this affects minimum protein requirements for pups at a critical stage of development, indicates that the pig pellet groups may have been right on the line

of their protein requirements. The 15:75 percent cooked group may have been below the line and the 17:74 uncooked group above the line, resulting in the extra activity of the uncooked group.

3) Protein requirements for growing pups have been suggested by the NRC, based on research reports which give varying figures that range from 9.5% to 20%. Also varying in these studies were the breeds used, the types of protein, and the total amount consumed. In our experiments, pups were all fed adequate amounts of protein (29%, 15%, and 17%). It is interesting that the same growth was achieved on just half the protein intake (29 vs 15%). It appears that pups can adjust their protein needs to the protein available. It also seems that this adjustment may vary with breed, and that guardian dogs from high mountain pastures of the Old World, although large, are adapted to grow well on diets low in protein.

Summary

The relationship between play and diet in guarding

dogs was not confirmed in this experiment. However, several interesting findings did result.

Dogs appear to physiologically control how much energy is digested and excreted, regardless of the original energetic content of the diet. This may be influenced by diet composition.

Dogs consuming diets similar in calorie content but with different protein to carbohydrate ratio showed different behavior patterns. As the ratio increased, they became more active. The effect seems to have a threshold, whereby once a ratio maximum (or protein minimum) is reached, activity decreases. Further analysis into the protein to carbohydrate ratio of European guarding dog diets, as well as additional behavior studies that include diets that vary in

protein to carbohydrate ratio, would bring us closer to understanding the diet-play relationship evident in U.S. Guarding dogs.

Protein requirements established by the NRC seem too high, especially for livestock guarding dogs of recent Old World origin. It could well be that nutrient requirements vary not only with body weight but also with breed. In the case of large Old World guarding dogs, it makes sense to monitor their diets and not feed them too much, not only when they are young but even after they mature.

FOOD	ACTUAL INTAKE		NRC REQUIREMENT	
	Puppy	Sub-adult	Puppy	Sub-adult
Puppy food	222	144	132	106
Cooked pellets	195	154	132	106
Uncooked pellets	209	174	132	196

Chart 3. Comparison of actual intake vs NRC requirement for metabolizable energy (in kcal/kg/day) for guarding dogs

Cashmere America!!

The ACGMC has a new logo, and their name looks slightly different.

According to Russ Nelson, president of the Colorado Co-op "it was just too hard for people to say ACGMC all the time" - so they made it easier by shortening the name.

Cashmere America will still be the Colorado based American Cashmere Marketing Cooperative we have come to know. It will just be a little easier to talk about.

And Cashmere America has lots to talk about.

Currently they are working hard to class and market

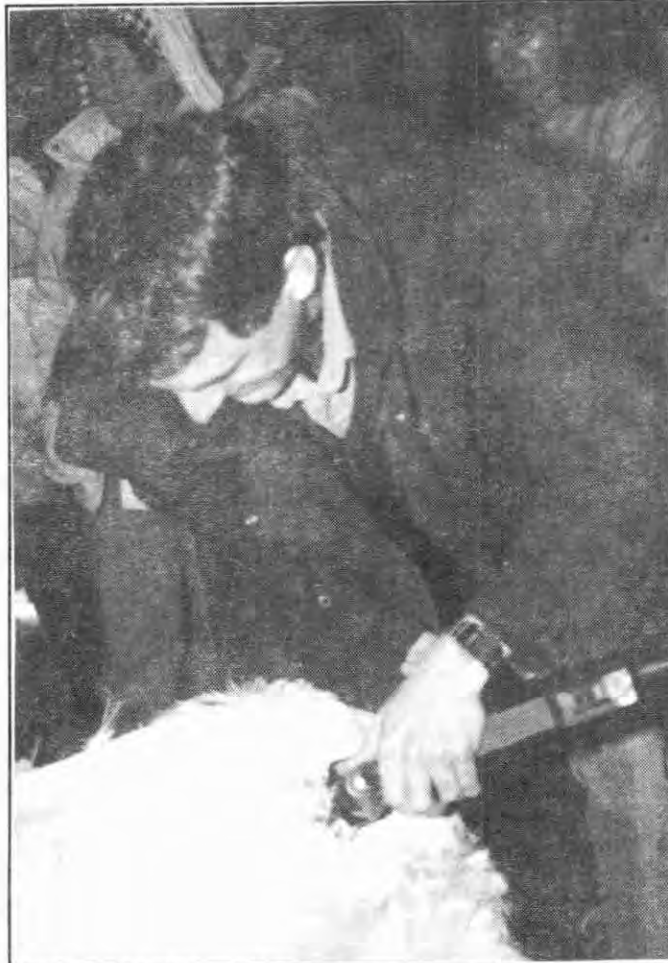
the approximately 800 lbs of fiber they received this year. It is projected that most fleeces will be sold to the hand-spinners and weaving market rather than commercial processors.

The co-op intends to market the fleece wholesale to retail fiber outlets. Sample cards of all colors

the up-coming sale.

The co-operative has also been busy trying to keep

track of Terry Sim, manager of ACGMC. Not only has he done a fiber clinic in the Northwest in April, he will present the results of the fleece contest at the Estes Park Wool Festival in Colorado, Junw 11 - 14. In addition, he is scheduled to do a clinic for the Texas Cashmere Association in May and another for Eastern Cashmere Association later the same month. Anyone who has attended his workshops knows how valuable his instruction can be.



Terry Sim demonstrates shearing to the Northwest Cashmere Association

and grades of fleece will be made available to wholesale buyers from the Cooperative for \$11.00. Advertisements and direct mail marketing for the fiber is already in the works for

The ACGMC also reported its involvement in a weed eradication project in Cherry Creek, Colorado. The project involves the Colorado State University, Colorado State Parks and

Recreation, ACGMC and about 50 goats. The goats will be monitored as they munch on 10 acre plots over 5000 acres on the Cherry Creek spread. Their eating habits and its effect on the weeds will be monitored from April to October by University researchers. The Colorado ACGMC members are providing the goats for the research project.

For more information about Terry Sim's schedule or what's happening in the ACGMC please contact:

Russ Nelson
1762 W Fox Farm Rd
Larkspur, Co 80118



CONCERNING CASHMERE...

The Newsletter for the
Cashmere Producers of America
(CaPrA)

FEATURING:

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- ✧ Readable and Easily Understood Articles on Fiber, Breeding, Selection, Genetics, Spinning and Husbandry
- ✧ Photos and Full-Color Advertising in the Breeder's Directory Issue
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BREEDING FOR FINE CASHMERE OF SUPERIOR STYLE AND CHARACTER

Classic Cashmere Breeders' initial foundation stock was imported in 1990 from Lismore Cashmere Breeders, winner of the 1990 Sandhurst Cashmere Herd of the year award given by the Australian Cashmere Growers Association, Ltd. Additional foundation stock was purchased from Pioneer Mountain Farm, whose original herd was from Karakan Cashmere Stud, winner of the 1989 Sandhurst Cashmere Herd of the year.

QUALITY CASHMERE GOATS AT QUALITY PRICES

Does with kids at side	\$900 - \$1,700
Lismore-bred buck prospects	\$400 - \$800
(born 9/1990)	
Open 1991 does	\$400 - \$600
1992 kids	Does, \$400 - Bucks, \$100

In 1991, Classic Cashmere Breeders imported two bucks from Lismore Cashmere Breeders which placed first and second in the Hamilton Three Year Fleece Competition held in Victoria, Australia. First place winner, LCB Foster's 0454, cut 384 grams of down at 16.7 mfd. Second place LCB Boomerang 0109 produced 439 grams of down at 16.9 mfd. We are expecting kids from both bucks this Spring.

*All Adult Animals Accompanied By A Fleece Sample
and/or A Certified Fleece Test*

Farm visits are always welcome!



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Northwest Cashmere Association Sponsors Fiber Workshop

Thirty Cashmere growers from Oregon, Washington, Idaho, Nevada and California attended a fiber workshop in Newberg, Oregon on April 4 and 5.

The Northwest Cashmere Association arranged for Terry Sim of Cashmere America to come out from Colorado to teach the workshop. Judith Richardson-Haralson also instructed. Sim is one of two certified classers from Australia and has come to the U.S. to help get the new marketing co-op off the ground in Colorado.

Cashmere America, also known as American Cashmere Goat Marketing Cooperative, is hoping to enable producers to class their own fleeces before shipping them for sale.

The first day of the workshop students learned to class fleeces into color and diameter lines, and to prepare their fleeces for sale by skirting and packaging correctly. The second day the group

traveled to Joyce Peterson's, Oregon Cashmere Company, for a shearing demonstration and hands-on (goat) work. Then the group returned to the classroom for experience classing their own fleeces.

People who take such workshops receive certificates of participation which may count toward their becoming classers one day

The Northwest Cashmere Association intends to sponsor such educational opportunities on a regular basis.

Northwest growers have been meeting informally for about a year and a half. Currently there are about 15 members scattered throughout the region.

President: Miriam Jeswine speaks to the members.



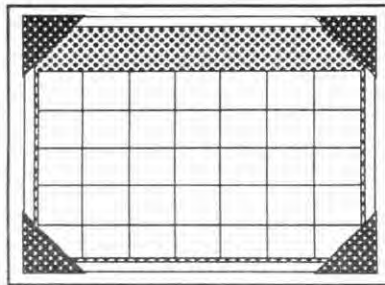
Officers of the association are: **President**, Miriam Jeswine, **Vice President**, Linda Pardon, **Secretary**, Marty Wall.

Membership in the NCA is \$25.00 a year. Members plan to meet formally four times a year and will benefit from discounts on all educational seminars sponsored by the association.

The next seminar sponsored by the group will be held over labor day at The Farm in Toledo. John Fitzgerald, General Manager of WhataWhata, New Zealand will present a fiber demonstration & workshop. Other activities will be planned.

The group is also in the process of making informational brochures available to its members to hand-out. The brochure gives a brief history of cashmere and some purchasing and management tips. Inside is inserted a list of members of the organization that will be updated regularly.

For more information about the association please contact - Marty Wall, 1667 Beaver March Road, Mt Vernon, Wa 98273 206-424-7935.



CALENDAR

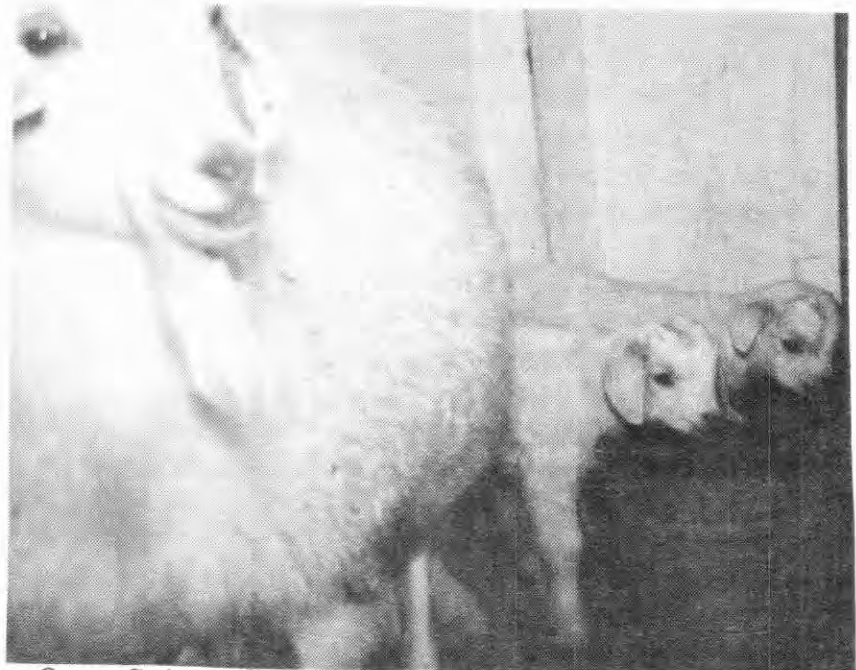
June 11-14, 1992 - Estes Park Wool Market, Workshops, Shows, Contests, Commercial Vendor Booths and Educational Booths and Displays. For more information contact Estes Park Fairgrounds 303-586-6104.

June 17 - July 5th, 1992 - Southern California Exposition. Jimmy Durante Blvd. Del Mar, Ca. For more information contact: Office 619-755-1161, Ext 353.

August: Northwest Fair held in Lynden Washington. Contact Linda Pardon 206-724-5371

August 5-8, 1992 Fiberfest 92-Kalamazoo, MI - Angora Goat, Wool Sheep, Llama, Angora Rabbit, Kalamazoo Fairgrounds, Kalamazoo, MI. Contact: Lyn Briel (616) 765-3047.

September 7, 1992: Whatawhata Fiber workshop, The Farm, Toledo, Wa. 206-864-4200



Oregon Cashmere Company twins await mom to be sheared.

Veterinary Notes
By Dr. Kay Orlando
Reprinted from "Pygmy Goat Memo" Winter 1991

Q. I realize it's not as easy as disbudding a young kid, but just how difficult is it to remove the horns from an adult goat? How would this be done? What are the chances of scur growth, as sometimes happens on goats which have had the horn buds burned? How dangerous is it to the goats?

A. Removing the horns from an adult goat is quite a bit more involved than disbudding a kid. This procedure is best done under a general anesthetic. 1 cut is made at the base of the horn, well into the skin. a saw or gigli wire is used to cut through the bone. The adult horn is hollow, and communicates with the frontal sinus. When the horn is removed, this sinus is exposed. This "hole" in the skull must be covered after surgery until it closes (in 1 to 3 weeks), to keep dirt, hay, flies, and other foreign debris from entering the sinus.

Once the surgery is performed, bleeding stopped, and the animal recovered from anesthesia,

my experience has been that these animals do quite well. But the owner can expect a period of nursing care after surgery.

The horn-producing cells are actually an adaption of the cells that produce hair. When disbudding kids or removing horns from an adult animal, a ring of hair-producing skin should be removed or burned around the base of the horn. The hair-producing cells at the base of the horn are capable of changing to horn producing tissue. This may be a source of scur production.

Q. We've never had equines of any sort on our farm, and our goats never leave the farm. Is it still necessary to administer annual tetanus shots.

A. Tetanus is caused by the toxin of a bacterium, Clostridium tetani, that has infected a wound. The bacteria is found in the soil almost world-wide. All mammals are susceptible to the disease although horses and man are the least

resistant. Because horses are so susceptible to tetanus, the disease has been associated with their presence. The organism does not multiply in the soil: only in tissue that has been damaged by an injury. The symptoms of tetanus are caused by the toxin produced by the tetanus organism present in the wound. By all means, vaccinate your goats for tetanus. Areas where horses have pastured are no more at risk for the presence of the tetanus bacteria than any other.

Q. Should a tetanus booster be given EVERY time a goat is injured, or only if the injury is a puncture wound?

A. The usual schedule for administering tetanus toxoid is once a year. There is no way you can know of every injury that occurs. But if you are aware of an injury or puncture wound, and it has been over 9 months since the last tetanus vaccine, it is wise to go ahead and booster the goat. While puncture wounds are the

most susceptible to developing a tetanus infection, the organism has been known to colonize bruises or other injuries. In some clinical cases of tetanus, the actual site of the infection is unknown. The injury or puncture was not severe enough to be noticeable.

Q. I have a doe who miscarried a single kid. The would-be mother seems to have recovered quickly. Is it likely she would have problems conceiving again? or if she is bred, is it likely she will abort? None of my other does have had any problems.

A. This is a question that I probably cannot answer fully. A lot depends on the actual cause of the abortion. There are infectious agents which can cause abortion in the goat. Injury to the doe (such as getting butted by a pen mate) can cause abortion. The corpus luteum on the ovary of the doe maintains the entire pregnancy. Anything that would cause dissolution of the corpus luteum will terminate a pregnancy.

You did not mention if this goat had maintained previous pregnancies. She

herself may be incapable of caring to term. There are also nutritional and toxic factors which may cause abortion. The ideal procedure if a doe aborts is to save the fetus and the placenta (afterbirth). Take them to your veterinarian for examination. (They can be refrigerated for a day or two.)

Lesions on the fetus and/or placenta, along with the age of the fetus when aborted, may yield the answer to why the abortion occurred. Many does that abort conceive on the next breeding and carry kids to full term.

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Salt and Trace Minerals for Goats

By Dr. Helen Schwartz
Lincoln University
Extension

The Salt Institute of Alexandria, Virginia (Cunha, 1987) reports that goats develop deficiency symptoms in 4 to 6 weeks after being fed a low-sodium diet (Shellner, 1972). These deficiency symptoms included persistent licking, restlessness, dull shaggy hair, poor growth and intake of feed and marked emaciation during lactation (milking). After 224 days, the deficient goats weighed 80% as much as those supplemented with salt. They ate an average of 6% less fat per day and required 18.5% more feed per unit of grain.

It is estimated that milking goats consume about 18 lbs of salt yearly whereas meat goats consume 9 lbs and kids 4.5 lbs. Heavy milkers would require higher levels of salt since milk contains considerable salt. Salt is sold in plain form or with additions.

Most companies add six of the trace minerals. These

are iron, copper, zinc, manganese, cobalt, and iodine.

Research conducted by Dr. Sandra Solomon on Nubian goats at Tuskegee University showed the requirement for copper was as high if not higher than for cattle.

An experiment conducted at Lincoln University with Angora Goats feeding plain salt to the late gestating does resulted in high mortality, goiters and abnormalities in the kids at birth. Look at the salt tag to see if there is iodine or other minerals added to the salt.

An increasing amount of information is accumulating to show that many nutrients are needed at higher levels to improve the ability of the animals' immune system to cope with infection. These include sodium, chloride, zinc, copper, iron, selenium, phosphorous and magnesium. Recent studies by Dr. M.E. Cook and co-workers at the University of Wisconsin have revealed that sodium and chloride

appear to influence antibody production.

As soils decline in fertility and are used for longer periods of time, there eventually will be a need for additional trace elements in diets. Molybdenum, nickel, fluorine, chromium, vanadium, tin and silicone are some trace elements that may become deficient in the future.

How soon will these trace elements become a problem in practical diets? Some scientists feel there is little or no possibility of their becoming deficient. This was also the same thinking in the case of selenium, where a deficiency may cause "white-muscle disease" where research information on goats is not in abundance. Research scientists in France and Nigeria recommend the use of 0.1 ppm of selenium in goat's diets.

Pastures for Goats

By Dr. Helen Schwartz,
Lincoln University
Extension

A yearly grazing program can be developed by selecting the following list of those forages adapted to the soil and climatic conditions of any farm.

* Early spring: Wheat or oats grazed before joining

* Spring: Kentucky bluegrass or orchard grass.

* Early Summer: Brome grass and timothy grazed 1 week and rested 3 weeks.

* Summer: Birdsfoot trefoil or lespedeza. (Depending on where you are in the state).

* Mid-Summer: Sudangrass in 14 inch rows as a temporary pasture.

* Early fall: Kentucky bluegrass or wheat during the breeding season.

* Late fall and winter: Tall fescue with excess spring growth, round baled or stacked and left in the pasture for winter feed.

The excess growth of tall grasses in May and June can be harvested for silage, halage or hay.

Better utilization of pastures by goats include:

* The division of large pastures into smaller areas for rotational grazing at a high stocking rate through the use of an electric fence.

* Varying the stocking rate to coincide with the productivity of the pasture.

* Restricting the grazing time of non-lactating does to 50 percent of the grazing time per week.

* Goat producers with 100 does or less normally should make maximum use of pasture unless land is limited.

* Tall fescue used as a winter pasture reduced the number of days necessary for feeding harvested forages by 50 percent at a stocking rate of 10 does per acre.

* Thirty acres of land should be adequate to supply the pasture and forage needs of 100 does

and 150 kids during the year. A stocking rate of 10 does and 15 kids per acre. The 30 acres should be divided into three fields of 10 acres each and managed as temporary pasture crops, legume-grass mixture for permanent pasture or harvested forage and tall fescue spring and winter pasture.

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EASTERN CASHMERE ASSOCIATION HOLDS FIRST MEETING

The Eastern Cashmere Association will hold its first annual general membership meeting and fleece competition at the Massachusetts Sheep and Woolcraft Fair, Cummingon, Massachusetts on May 23rd and 24th.

The general membership meeting will be held Saturday night followed by a board-of-directors meeting to elect officers.

Temporary officers for the organization are:

President: Becka Wright, Lemon Fair Cashmere, Shoreham Vermont;

Vice President: David Frank, North American Cashmere Company, Spencer, New York;

Secretary: Carol McComiskey, Classic Cashmere Breeders, Lebanon Connecticut;

Treasurer: Tia Rosengarten, Mountain Pond Farm, Weston, Vermont.

The new Eastern Cashmere Association plans to

develop methods for progeny testing, fleece marketing, product development and goat management.

The new association already has 50 members, located all the way from Main to Florida, including Indiana and Illinois.

Also at the Woolcraft Fair will be a cashmere a classing school and demonstration, tutored by Terry Sim, American Cashmere Growers Cooperative General Manager.

Eastern Cashmere Association have also organized a cashmere display booth, fiber sale, animal display area, goat meat products display, and cashmere raffle. The raffle prizes are designed to introduce participants to cashmere products such as yarn, scarves and fiber while raising money for the organization.

Also being organized by the group are about 4 more events for the year including a show of live animals at the Virginia State Fair.

Hooray! for the Eastern Cashmere Association for

keeping the word out about cashmere!

For More Information on the ECA Contact:

Treasurer, Tia Rosengarten, Mountain Pond Farm, Box 37, 3 Obed Moore Road, Weston Vermont 05161. 802-824-8190

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Eastern Cashmere Association Annual Fleece Competition

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Terry Sim, ACGMC General Manager

Entries are due May 15, 1992. If you are interested in entering both this competition and the ACGMC competition in June, please include a post-paid package and your fleece(s) will be sent to the ACGMC on May 26th in order to meet the ACGMC deadline. Please note this on your entry.

Each fleece should be accompanied by an identifying card/tag which states the name (ID number), age of the animal at the time of shearing, owner's name, address and telephone number. Upon receipt of a fleece, the identifying tag and fleece will be assigned a number. Only the fleece's number and the animal's age will be included with the fleece for judging.

Prizes will include \$50.00 to each overall champion fleece in the shorn and combed categories.

Mail Fleece to: Ellen Reker, RD 3 Box 3378, New Tripoli, PA 18066 or call 215 767-2629

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