CASHMERE MIRROR

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The monthly magazine devoted to cashmere goats and their fiber

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CASHMIRROR

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Boring (Yet Important) Technical Information

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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: Caitlan Allen
Farmington, Maine
"BLF Coppelia"

$100 First Prize!

New Photography Contest for Readers!

Deadline for Submission: September 1, 2001
Summary of Contest: You send us photographs—any size, black and white, color, digital, we don't care—with a caption, if you want (not required). Tell us in which of the three categories you would like your photograph entered, or you can even let us decide. We'll either judge the contest ourselves or possibly hire/bribe a qualified panel of judges, depending on how ~~lazy~~ busy we are at the end of the contest.

Categories:

Smartest Goat: Your photograph will need to illustrate the superior mental capacity of your goat—which shouldn't be difficult. We all know that our goats are smart, but can we capture this on film?

Cute Kid Contest: This category is like the "Cute Baby Contests" of olden days; we're sure that our goat kids must be at least as cute as human kids. Submit a photo of a cute kid or a whole passel of cute kids.

Other: This is the category for that incredible photo that just doesn't fit in the first two categories. Anything will fit here.

Prizes: Grand Prize (Best of Show) - $100 shopping spree at Caprine Supply! 1st prize for each category - One year subscription (or subscription extension) to CashMirror, 2nd prize for each category - CashMirror or MGM T-shirt (your choice), 3rd prize for each category - a copy of Linda Fink's new book, More Life in the Goat Lane. We're talking ten prizes up for grabs here! However, we're sure that, regardless of the prizes, you'll want to enter anyway just for the pure glory of winning.

Other Important Info: We'll return your photographs to you unharmed. So drag out those cameras, dust them off, buy some film and follow those goats around! Who knows what you'll manage to capture on film.

Go Forth and Photograph!

Smart goats: **"They make cool jungle gyms if you sneak up on them!"**

Cute Kids—
Snow White studies ankles (in her pre-Dwarf days).

Other— **"Yo! People! Let's think about weaning here!"**

Reflections

by Linda Fox

One Thing Leads to Another...

If you want to keep things under control, you should never do anything. Let me rephrase that. If you want to keep your project list under control, don't start the first project. I'm not sure that is right either; maybe we should just go on to an example.

Back in the olden days, when we just went to movies and ate out for entertainment, our list of uncompleted tasks was short. We had to keep up with what movies were out there so we didn't miss any good ones and vary our restaurant of choice so we didn't get bored, but overall, life was simple.

Then, along came the first goat, or first three, in our case. They needed things—like a shelter, improved fencing, breeding and owners that knew something about them. A longer, more involved project list was born. We built sheds, improved fences, found them mates and talked to other goat owners and attended workshops to learn about cashmere goats.

Like most goats, one goat leads to another. We bought more goats and our goats had babies. Our three became 42 in no time at all. The population and the chore list grew. They needed more land—we moved, they needed more pastures—we built and improved more fence, they needed a bigger barn—we built one. Our list of projects grew. It became hopeless to attempt to complete the list anymore; we just focused on priorities.

Now our herd number has stabilized—we don't want to move again and choose to let our land feed the herd during the growing season, so our maximum numbers are fixed by our available land. Our infrastructure is mostly built. Our barn is adequate for our animals and our fences are all in. There are, of course, always fences that could be better, but the fences we have keep the herd confined, so they will do until they become worse and hit priority level on our list.

So we're back to watching movies and eating out, right? Wrong. It seems like one project always creates another. Our barn is a good example.

When we built our first goat sheds, we were just concerned about keeping the rain and most of the wind out. We now have a large barn, way overkill for goats no doubt, but just what we wanted. We had a builder construct the outside shell and we completed the inside with pens, aisles and kidding stalls. Over the past few years, the barn has evolved. We've expanded pens, downsized pens, added gates, moved gates, added cement in a section and moved equipment, tools and hay around in order to accommodate the current plan.

No matter how much we do, it seems that there is always something more to be added or improved—some required addition that when we get that done, things will be just perfect. Each project seems to lead to another project on completion.

We're doing more on the barn this year as well. Last weekend, we moved everything out of the taller "hay end" of the barn in order to make room for cement in another portion and to build a hay loft. We've decided that the high end is too high—it's difficult to get heavy hay bales up the stack and then back down to feed.

We will divide the high end by building a floor halfway up—a hayloft. We can store our bedding straw on top as well as all those bulky things stored in the barn that are only used occasionally. Paul thinks a hayloft would be fun for the grandkids. We're also thinking of revising the drainage system around the barn, which will probably involve moving fences to get the digging equipment in.

It's not just the goats and their accessories that add to our project list. The chickens have done their fair share. In order to have fresh eggs for our table, we bought a few chickens and built a chicken house. Now things are perfect and simple and all we have to do is gather eggs and fill their feeder once in awhile. Wrong. They need nesting boxes. They need roosts. They need plastic over their window in the winter. They need their nesting box moved so that we can have access from outside the chicken house. One project leads to another.

There is an hour pause in the article here which you do not see. Paul and I have spent the last hour chasing a stray kitten in the woods. We ran out of light and energy and will have to resume the pursuit tomorrow morning. We left food and water by the patch of blackberries it seems to circle back to. I don't suppose this kitten will add to our project list, will it?

One goat leads to two others. Snow White teaches this year's kids about Oregon mud. Humans put out planks for smart goats to use. Kids prefer walking in the mud.

When Readers Talk...

Dear Paul and Linda,

First off I would like to let you know that I look forward to each and every issue and read it top to bottom as soon as I receive my copy. As to your last article on herding animals (March 2001), I would like to let you know that we purchased a 2 yr. old male llama last year as we have had some fatal problems with dogs. I wanted to get a guard dog but we live close to a busy freeway. I did some research and found that llamas seem to work well. I also spin and wanted an animal that I could use its fiber to spin. My first thought was maybe an alpaca would do the trick but alas they do not guard and the cost is way out of our range. So while we showed our goats at Estes Park Wool Market last year I talked to several llama people and looked at several llamas. The llama fiber on some of these animals is wonderful. So after talking to many llama and alpaca breeders we decided that a llama with fine fiber just might work for us. We purchased a nice male to do the job but if he didn't guard the goats well, at least I had a new fiber animal to play with. He has been working extremely well for us. We were told to have him castrated at 3 yr. as sheep breeders that use llamas say an intact male has been known to try and breed a doe and crush them to death. So we watched very closely and the goats are much smarter than sheep as they will not stay down when the llama comes near. He is very protective of his herd and even herds them in at night for us which makes it easy for us to have all the goats in at night. Also he is a wonderful kid sitter. He keeps them safe if they get lost. We had one runt born this year and could not keep up with his twin brother and mother so our llama took him under his wing and helped him stay safe and warm. I have some pictures that I will mail to you of our llama guarding the kids. Please let other cashmere goat owners know about this wonderful fiber guard animal.

We showed some of our goats at this year's Estes Park Wool Market and we had lots of people from all over the country looking for cashmere goats to purchase. I just thought you might like this information. If we can get someone to dehair our fiber at reasonable price I am having some interest form interested parties overseas looking for cashmere fiber to purchase. We also show at National Western Stock Show in January. I was wondering if I could get some old *CashMirror* issues to give out at the shows as we put up a small table to promote cashmere goats and some products they produce. I have been giving out my old issues but I am down to just this year's issues and I like to keep one year of issues for myself as they are wonderful to go back and read. There are a lot of people interested in cashmere goats in this part of the country.

My 4-H lease-a-goat program is still small but one new cashmere person is better than none. I had two lessees but one dropped out as the goat she wanted had been sold, and she did not want to use another goat even though I had told her all the spring kids are for sale as we have a business.

Hope all is going well with you and the goats. Keep up the good work informing new cashmere breeders about the wonderful fiber goat.

Sincerely,
Bob Marshall, Marshall's Organic Acres
Wellington, Colorado

Dave, at Goat Knoll, does an exemplary job of guarding these odd-looking goats. He's not what you'd call a fine-fibered llama, but he feels that there's no need to get insulting.

Instructions for Submitting Fleeces ECA's 2001 Fleece Competition at The State Fair of Virginia

Judge: Joe David Ross of Sonora, Texas

Competition groups: Kid fleeces, 2nd and 3rd fleeces (goats born in '98 and '99), 4th - 7th fleece (goats born in '94 through '97), and senior fleeces for goats born in 1993 or before. Age groups will be subdivided by sex and as combed or shorn. Cash prizes will be awarded. Please limit entries to three fleeces per class per farm. Only raw fleeces harvested in the 2000-2001 season are invited.

Fleece packaging: Pack each fleece in a plastic zipper bag if possible. Hefty One-Zip 2-1/2 gallon bags work well for most large fleeces. Do not write on the bags. Insert a 3x5 card in each fleece bag with the following information: your name and address, your social security number (required for receiving premiums), the goat's herd code, name, number, sex, and date of birth. Indicate whether the fleece was combed or shorn. Remember that the goat carries the herd code of the farm where it was born. Insert in each box of fleeces a self-addressed (BIG lettering) 3x5 card which will be used as a mailing label for returning fleeces that are not picked up at the fairgrounds. Fleeces will be returned by U.S. Postal Service, first class mail, unless another mail service is requested.

Entry fee: Include a check (payable to the Sate Fair of Virginia) for $1 for each competing fleece.

Mail to: Claudia McClung, 1398 Maidens Road, Maidens, VA 23102

Deadlines: Fleeces must reach Claudia by September 10, 2001. Absolutely no fleeces can be submitted at the fair.

ECA thanks you for participating.

NORTHWEST CASHMERE ASSOCIATION FLEECE COMPETION 2001

Contest to be held August 11, 2001 in conjunction with the 11th Annual Northwest Classic Double Point ALSA Show & Fiber Festival. Location is Evergreen State Fairgrounds, Equestrian Arena, and Monroe, WA.

Judge: Cynthia Heeren, Hokalani Farm, Oregon

Fleeces are to be mailed to:
Doug Maier, Breezy Meadow Cashmere Farm
810 Van Wyck Rd., Bellingham, WA 98226

Fleeces must be received by Doug no later than August 4th!

Package fleeces in plastic bags, ziplock if possible, with a 3x5 card that has your mailing address inside. Also include the herd code and number of the goat, name of goat, if any, sex, date of birth and whether shorn or combed. For return mailing, include another 3x5 card to be used for the mailing label, with all necessary information needed to get your fleece safely back to you! And postage!

The entry fee is $2 per fleece entered.

Contact Paul Johnson at 503-623-5194
Paul@cashmirror.com
or
Doug Maier, 360-733-6742
fibergoat@earthlink.net

Note: Fleeces entered will be promptly mailed back to participants after the event in case you are entering your prize fleece in both the NWCA and the ECA competition.

The Proceedings of the 6th (1996, China) and 7th (2000, France) International Conference on Goats are available for purchase. Cost is US$60 each year for the two volumes, plus postage.

To obtain, write to:
International Goat Association
1015 Louisiana Street
Little Rock, AR 72202

Advice from a cat: "Get 'em off the floor and in the mail!"

Drought Feeding of Goats

Agfact A7.5.3, second edition, January 2001
Ted Scarlett, Livestock Officer, Albury, NSW

Introduction

The effects of drought on goat and sheep enterprises using pasture are similar, but it is only rarely that conditions deteriorate to the stage where no grazing is available. Most commonly, goats need a ration to supplement limited grazing. Feed supply is critical when dry pasture is short (less than 2 cm), and when less than 1 tonne per hectare of dry matter is available. In such circumstances goats lose body weight and condition. On properties where there are scrub and other browse species, the effect of the drought on goats and stocking rates occurs much later, and management decisions are more difficult. It is advisable to monitor your goats' body weight and condition score.

Preparing for Drought

You must prepare for drought. For drought strategies to be successful, they need to be flexible. They need to be capable of being implemented at short notice and varied according to the severity and duration of the drought. You can choose some or all of the following options:

Sell all your stock;
Cull and sell some stock;
Find agistment for your stock;
Start feeding the stock on your property.

Before deciding what to do, calculate your costs and returns. A combination of strategies could be your best option.

Taking the Drought Feeding Option

After carefully costing the economics of a feeding program and deciding to take the drought feeding option, you must then decide what level of feeding is required. There are three basic levels of feeding: supplementary, survival and production.

Supplementary feeding is when goats are fed to overcome a deficiency in the fodder that is already available to them. An example would be where goats receive a supplement of lupins when grazing a dry grass stand to overcome a protein deficiency in their diet.

Survival feeding is when a minimum amount is fed with little or no other paddock feed available until the drought breaks. While feeding levels are not fully established for goats, extrapolation from sheep research is a simple exercise that allows costing of a full feeding program (see Table 1, next page).

Memorize This Table!
(You'll find it handy for this article)

Hectare: 2.471 acres
Centimeter (cm): .3937 inches
Lucerne: Alfalfa
Tonne: 2,204.6 pounds
Meter (m): 39.37 inches or 3.28 feet
Litre: 1.06 quart
Gram: .032 oz. (100 grams = about 1/5 pound
Kilogram (kg) 2.2 punds

Production feeding during drought can be profitable, and two avenues worth exploring are: Lotfeeding and feeding for increased reproduction rate.

LotFeeding. Kids and adult goats in poor condition have little value during drought, but well-finished stock of slaughter weight should realise higher prices. If appropriate facilities are available, lotfeeding may be an alternative way to reduce numbers, grazing pressure and total feeding costs. When calculating the profitability of lotfeeding, compare the total feeding cost with the estimated improvement in animal value on a live basis.

Feeding for increased reproduction rate. When there are good prospects of the drought breaking at or before the next kidding, consider feeding does in order to increase body weight and improve kid weaning percentages.

Basic Animal Requirements

As the drought develops and the pasture declines in quantity and quality, there is a deficiency in energy, which causes a decline in liveweight. Deficiencies of other components are insignificant in relation to energy, but in drought, where the aim is to feed the cheapest survival ration, all nutrients are important.

Energy.

In a drought, where feed is in short supply, energy is the main deficiency. Under such circumstances, high-energy feed such as cereal grain or high-quality hay is needed. Feeding low-quality feeds (such as cereal stubble) that have low metabolisable energy levels will not meet the goats' requirements. They will lose weight rapidly even if full access to such feed is given. Table 2 and Table 6 show the energy values of various feedstuffs.

Protein

Protein is present in all grazing material—even dry, drought-stricken pasture and cereal stubble contain some protein. The normal grazing behaviour of goats

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Drought Feeding

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is to select plant material that is highest in digestibility (such as seeds and green shoots) rather than stalks and leaves from perennial grasses.

Goats require protein both for their own metabolism and to feed the micro-organisms that digest fodder in their first stomach (rumen). Insufficient protein means poor digestion, loss of appetite, reduced feed consumption and reduced liveweight.

There are two ways to overcome this problem. The first is to supplement with a high-energy feed (such as a cereal grain) to make up the energy deficiency in paddock feed and to overcome any protein deficiency. The protein level of most grains is higher than an adult goat's basic requirement, and some of the surplus protein in grain may supplement the small amount of protein in the roughage and speed up its digestion.

Table 1. Minimum quantity of feed needed by 100 dry goats per week for survival.

Type of feed	Energy value	Small weaners 20 kg (kg)	Large weaners 25 kg (kg)	Small frame 30 kg (kg)	Medium frame 35 kg (kg)	Large frame 40 kg (kg)
Grain—						
Wheat, oats, barley, sorghum, maize	12.0	200	240	240	300	330
Lupins and beans	12.5	190	220	230	290	320
Hay—						
Lucerne	9.0	280	340	390	430	480
Good pasture (mostly clover)	8.5	300	360	410	460	510
Poor pasture (mostly grass)	7.0	*390	*460	*520	*580	*650
Good cereal hay & chaff	8.5	300	360	410	460	510
Poor cereal hay & chaff	6.0	*460	*550	*630	*700	*780
Straw—						
Cereal straw	5.0	*570	*680	*770	*870	*960
Silage—						
(30 per cent dry matter)	8.0	*1100	*1300	1500	1700	1800

**Goats will not be able to consume sufficient of these feeds to meet their requirements. These roughages should be supplemented with some grain.*

The second way to overcome a protein deficiency is to supplement the fodder with a protein-rich feed such as lupins, cottonseed meal or lucerne hay. These supplements may make low-protein roughage more digestible and increase the supply of energy. The role of supplements in droughts is to prevent goats losing weight, or to slow down the rate of weight loss when feeding poor-quality hay or paddock feed. Do not expect weight gain from this type of feeding. A high-energy grain supplement may be more economical and beneficial than a high-cost energy feed that contains extra protein.

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Figure 1. Although grain is usually the cheapest source of energy in a drought, hay is a valuable special-purpose feed and should always be on hand during a drought. Some dry feed is usually left in the paddock during drought. It is only later in the drought, or when goats are confined to yards, that no paddock roughage will be available.

Drought Feeding

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Roughage

Goats show more of a preference for high-roughage-content feeds than do sheep. This has led to the misunderstanding that all goats require hay, particularly for drought feeding. All energy feeds that form the basis of drought feeding (for example hay, grain and silage) contain considerable quantities of roughage.

Vitamins and Minerals

Vitamin A is usually the only vitamin that will become deficient in drought feeding, but it may not be a problem in all goats. Vitamin A is obtained from green pasture, scrub, lucerne and clover hay with a good green colour, and yellow maize. It is stored in the liver, and grown goats will have enough stored to last for at least 6 months.

Kids and weaners born in a drought will be the first to suffer a deficiency unless they are given green hay or a proprietary vitamin A supplement. Bucks could also become deficient, and this will impair their fertility. It is recommended that bucks which are joined during the drought, and those that are to be joined for the first time after drought, be supplemented.

Calcium will be deficient when the diet consists largely of cereal grains. Effects will show up (as hypocalcaemia) first in lactating does, then in suckling kids, weaners, pregnant does and dry goats. To prevent calcium deficiency, use 1.5 per cent finely ground limestone (calcium carbonate) with cereal grains (for every 100 kg of grain, use 1.5 kg limestone). Add the correct amount to the grain as it is being taken out of the storage bin or silo. Calcium is more readily available to the goats when the limestone is finely ground, therefore agricultural lime is less suitable than stock lime. Do **not** use builder's lime, burnt lime or slaked lime, as these are not calcium carbonate.

All surface and bore water contains **salt** in varying amounts. Some water supplies are too salty for use in some drought situations. There is always some salt in feedstuff, and drought rations contain adequate salt for dry goats.

Under certain conditions **other minerals** become deficient but these deficiencies are often very localised. It is wise to check with your district livestock adviser or veterinarian before embarking on a program of feeding mineral licks and supplements. Money spent on mineral licks may be better spent on additional grain.

Feed Types and Feeding Methods

Grains and pelleted rations. Grains can be categorised into cereal grains and leguminous grains.

Cereal grains, such as wheat, oats and maize, are high-energy grains, yet usually contain adequate amounts of protein for drought feeding. Cereal grain is easy to feed in drought and is the most concentrated source of energy for feeding. Due to its higher roughage content, oats is the least risky of the cereal grains for causing grain poisoning.

Leguminous grains, such as peas and lupins, are high-protein sources and are usually used to overcome a protein deficiency in remaining pasture or to complement low-quality hay. Feeding solely high-protein grains is usually not economical, since much of the protein is not utilised and such grains are expensive.

Proprietary feeds are available in the form of pellets, which usually contain moderate levels of cereal grains, plus various levels of protein or urea and minerals. Such feeds, which are fed in the same way as grains, are often expensive and are unlikely to be more beneficial than a good-quality cereal grain.

Feeding out in Trails

Where the ground is hard, grain or pellets can be fed out in trails (see Figure 2, next page). Allow sufficient length for all goats to feed at once. A feed trail 50 m long provides 100 m of feeding space, which is adequate for 500 goats fed twice weekly. It is advisable to lay a longer trail when feeding more frequently, so that all goats can eat their full ration, or where there is a problem with dominant goats. Dominance within the mob is more pronounced with goats than with sheep.

Thin trails of grain can be laid with a combine or super spreader. Goats accustomed to eating medic and clover burr, or grazing stubbles, have no trouble finding most grain spread in this way. However, there will be some waste.

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Drought Feeding

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Generally, troughing is not necessary when feeding grain. In fact, greedy feeders are more inclined to overeat from a trough. A thin trail on the ground slows down the rate of consumption, giving all goats a better chance of getting a full ration. Goats that are not feeding properly may need to be separated from the mob and fed in a small yard.

Feeding from the ground increases the risk of exposure to parasite larvae and coccidia oocysts, even though parasites are less of a concern in hot, dry conditions. However, numbers may accumulate on the feeding area and could have an impact on the thriftiness and survival of young stock. Ask your veterinarian to recommend a suitable drenching strategy.

Feeding in Troughs

If the ground is dusty, sandy or badly cracked, some form of troughing is needed. Keep grain off the ground and provide sufficient trough space. A good guide is 10-15 goats per metre of trough. Troughs can be constructed simply and cheaply. One method is to use plastic fertiliser bags with timber or steel along either edge. Old rails, sleepers, bush timber and piping are all suitable.

Kids and weaners are generally best fed from troughs, with a self-feeder being the most suitable feeder for grain. Large numbers can be confined to small areas, particularly in fine weather. However, during and immediately after wet weather, densely stocked areas become very boggy, even on relatively well-drained sites.

A stocking rate of 400 kids on 2000 m^2 will allow 5 m^2 for each kid, which is ample for all weather conditions.

When feeding daily, allow each kid up to 20 cm of feeding space. A trough 2 m long will feed at least 10 each side. With intermittent and ad lib feeding, less space is required, as kids will eat in rotation. However, if space is too limited you may get shy feeders that will require special attention.

Prevent kids walking in the feed by raising the trough and laying a rail along the top of it. A shallow trough, 15-20 cm off the ground and 20-30 cm wide, is satisfactory for grain. Hay is best placed in racks in the centre of the holding paddock.

Urea

In drought and semi-drought conditions, urea has been used to supplement poor-quality dry pasture and low-protein hay in order to speed up the rate of digestion, increase food consumption and stop animals losing weight. Such a strategy postpones the time when an energy supplement such as grain will be necessary.

Figure 2. Feeding (Angoras) out in trails.

Urea is a chemical compound containing a high percentage of nitrogen. Although it has often been referred to as a "protein supplement", this is not strictly correct—urea does not contain protein. Urea assists in the rumen digestion process, so in most drought feeding situations a supplement such as molasses must be fed with urea to ensure that the supplement is effective.

Consider a urea supplement only as a pre-drought strategy for use while ample dry feed is still available, and restrict it to adult dry goats that are still in strong condition. Even here, the chance of failure is high, and gains may not be adequate to cover labour and material costs.

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Drought Feeding
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When using urea as a supplement:

* Ensure that each adult goat consumes between 6 g and 8 g of urea per day;
* Supply some readily digestible energy such as molasses or grain to ensure efficient use of urea and to reduce toxicity-6 g of urea should be consumed with at least 25 g of molasses or 100 g of grain.

Caution: Ensure that urea is evenly mixed in any ration to avoid urea poisoning.

Blocks, licks, porridge mixes and commercial "nuts" are the most common methods of feeding urea to goats.

Hay
Hay is a good source of roughage for drought diets and is extremely variable in quality, ranging from good lucerne hay through to cereal stubble. Good-quality hay can substitute for grain in a drought ration, but, with drought feeding, there is no benefit in feeding hay unless it is a cheaper source of energy than other feeds.

However, hay is beneficial in the following circumstances:

* As a source of slow-release energy to help goats over a period of cold stress. Hay is digested more slowly and will supply some energy, and therefore heat, for a longer period than will grain.
* To combat grain poisoning when beginning a grain feeding program. The proportion of hay should be high when beginning to feed grain, and then should be slowly reduced over a 3-week period, thus reducing the risk of digestive upsets from grain.
* Where some goats in the mob may refuse to eat a 100 per cent grain diet.

When feeding baled hay daily, break bales open and scatter the biscuits over the feeding area. If hay is being fed once or twice weekly, do not break the bales open, unless they are very dense, tight, lucerne bales. An idea is to stack two or three bales on top of one another, and drive a steel post between the ties and the bale, and into the ground. This keeps the bales and ties together. With round bales, leave intact in the feeding paddock.

Hay needs no treatment before feeding, but sheathed hay needs to be chaffed before feeding to kids and weaners. When feeding high-quality lucerne or clover hay to kids and weaners, it is best to feed in racks with a tray underneath to catch the valuable leaf material.

Edible Scrub
Edible scrub is particularly important. Goats can consume a large variety of common trees and scrub which can maintain them during a drought. Lop only those scrub species that goats usually eat—if your goats are very hungry there is a risk that they could eat poisonous plants that they would usually ignore. Table 2 gives the energy values for various scrub feeds (also see the section "Energy value of various feeds").

Continued on next page

	Metabolisable energy (MJ/kg DM, or M/D)*	Crude protein (%)	Dry Matter (%)
Belah	8 (7.5-10.4)	9 (7-14)	48 (29-62)
Black wattle	7.5 (6.2-9)	9 (5-13)	?
Boonery	8.2 (7-9)	12 (10.5-13)	42 (30-55)
Gruie	9.7 (8.9-10.1)	12 (10-14)	38 (30-42)
Kurrajong	7.7 (6.7-8.7)	10 (8-12)	62 (56-66)
Mimosa bush	10.4	19 (15-25)	38 (16-57)
Myall	8.5	14.5 (13-16)	44 (27-54)
Mulga	7.5	8	77
Prickly wattle	10 (7.9-10.1)	14 (8-17)	43 (30-50)
Rosewood	7.3 (6.6-8.5)	11 (8-13)	76 (68-84)
Tree lucerne (Tagasaste)	8 (5-11.4)	13 (5-24)	27
Wild orange	9.3 (9-10.1)	13 (12-16)	47 (37-54)
Wilga	9.7 (8.2-10.5)	13 (8-16)	42 (28-72)

Table 2. Energy and protein content of some commonly used scrub feeds*

*** The figures given here for scrub feeds are optimistic. Because of the low digestibility of the fibre fraction, energy values are frequently lower. Crude protein is often bound up in the leaves and is unavailable to the animal.**

Drought Feeding
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Here are some tips that have worked for property owners who have fed scrub successfully to their goats during droughts. You may like to use some or all of them, depending on your circumstances:

* Start lopping branches early and train goats to eat a variety of scrub. Some owners claim that this is best done while goats are still kids.
* Provide scrub in steadily increasing quantities while grazing is still available and before goats lose too much condition. (Remember that fully fleeced goats, particularly pregnant does, are often in a poorer condition than they appear to be.)
* Start lopping scrub around watering points, camps and on tracks.
* To begin, lop only the best and most palatable scrub.
* Lop some fresh scrub each day and at the same time of day.
* At first, the consumption will be small, so don't lop too much. Limit the supply of scrub to the amount that is eaten each day; increase it when all of the daily supply has been eaten and goats are looking for more.
* Most goats will soon come to the daily sound of lopping, but ensure that all goats learn to come. Muster stragglers each day.
* Gradually move away from water while still cutting small amounts. When goats have learnt to depend on scrub for their feed, and readily come to the sound of lopping, move to the point furthest from water.
* When full-scale feeding is underway, concentrate on the least palatable species, but provide a mixture of these species. Retain the most palatable species for use when paddock feed is depleted.
* Completely clean up an area before moving closer to water-this will make maximum use of any grazing.
* Lop plenty of scrub with a good mixture of species for does and kids. Put some near water and some at several locations away from water up to a distance of 1.5 km.

You will need to give pregnant and kidding does an additional grain supplement.

Water Supplies

If you are to have a successful drought feeding program you will need a reliable water supply. In past droughts, many properties were affected by a shortage of water while ample grazing was still available.

Figure 3. Wethers and dry does can maintain their body weight if there is adequate palatable scrub.

Figure 4. It is essential to have an adequate supply of clean, quality water during any drought situation.

It is important to provide weaners with the best water available, preferably in troughs. If you have a reticulated supply, the rate of flow is more important than the length of your trough. The amount of water a goat will drink in one day depends on the temperature and the amount of shade available, the type of feed, the salinity of the water, and the class of goat. Table 3 is a guide to the maximum salinity that different classes of goats can tolerate and the quantity of maximum-salinity water needed each day.

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Table 3. Water consumption and maximum salinity for drought feeding with hay, grain or dry pasture.

Class of goat	Consumption per head per day* (litres)	Maximum salinity (total salts in parts per million)
Weaners	4-6	7,000
Adult dry goat	5-7	14,000
Doe with kid	5-10	10,000

*** This table relates to goats on a low-salt diet such as hay, grain or dry pasture. Goats that have diets which consist largely of salty plant material such as saltbush (*Atriplex* spp.), blue bush (*Maireana* spp.) or copper burrs (*Scerolaena* spp.) require water that contains less than 10,000 parts per million of dissolved salts. Other classes of goats require water with correspondingly lower salinity.**

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During summer, newly shorn goats without shade will drink more than the amounts of water shown in Table 3.

Ground-tank water could be polluted by manure if goats are allowed to camp on tank banks—one shower of rain could wash enough manure into a tank to make it useless. Large numbers of livestock around a tank can turn the tank bank into a quagmire, with weaker goats getting bogged. The only solution to these problems is to fence off the tank and install some form of temporary reticulated supply. For example, a fire-fighting unit, some plastic pipe and temporary troughing made from 200-litre drums would be cheap and effective, provided it can be kept full at all times.

When and What to Feed

It is important to start hand feeding your goats well before they reach their critical survival liveweight. Teach each new kid drop to accept hand feeding before you wean them. Use older animals with previous feeding experience to educate young, inexperienced ones.

When you are starting to feed inexperienced goats, use a palatable feed such as good-quality hay and scatter it over a large area so that all your goats get some at the same time. This is best done in a small paddock or large yard that has good shade and water but no available grazing. When your goats are used to eating the hay, pour grain over each new feed of hay and gradually increase the grain ration at each feed. You can delete hay from the ration when your goats are used to eating the grain.

While goats are being introduced to hand feeding they can lose more weight. It takes 3 weeks to introduce goats to a full grain ration such as wheat, so it is essential to commence while they are strong and in reasonable condition.

The critical survival weight varies between the type, breed, reproductive status and age of goats. Choosing the correct weight is made more difficult by some goats losing condition faster than others. The mob may require splitting up, since some animals may not require hand feeding, thus reducing feed costs. If scales are available, use them to determine liveweight loss by weighing a sample of the mob over time.

Precautions When Starting Grain Feeding

Take care when introducing goats to grain and pellets or nuts, as there is a risk of grain poisoning. Goats cannot be put straight onto a large ration of grain or pellets, as heavy losses may result. Time must be taken to build up to higher levels of grain feeding. The introductory program outlined in Table 4 should be used for all grain-based feedstuffs.

Table 4. Introducing a 35 kg goat to a whole-grain-based diet.

Days	Amount of grain per head (grams)	Frequency of feeding
1 and 2	50	Daily
3-5	100	Daily
6-8	200	Daily
9-12	300	Daily
13-15	370	Daily
16-19	430	Daily

Once the full ration of 430 g/head/day is reached, it is possible to feed every second or third day, but this is not something that has been widely practised with goats, and should only be undertaken with caution.

There is no necessity to treat the grain in any way. In fact, digestive upsets and poisoning are more likely with crushed or hammermilled grain, and, once treated, such grain can no longer be fed on the ground. However, where a large percentage of grain is fed, sodium bentonite should always be included to reduce the risk of grain poisoning.

Does

The number of kids weaned is largely determined by:
* the liveweight and condition of does at joining time;
* nutrition during pregnancy;
* nutrition from kidding to weaning.

Pre-joining Does

Conception rates are maximised if does are joined when they are in good condition and increasing in liveweight. By contrast, does in poor condition and losing weight have low conception rates. Any attempt to join does maintained at minimum survival weight will be disappointing. To achieve an "average" kidding, does should be at least in 3 score condition, and 5-10 kg heavier than minimum survival weight.

Pregnant Does

Pregnant does need particular care and special treatment. Start feeding them well before any other mob if you want to prevent losses of does and kids.

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"Liveweight" is not a useful guide for the condition of pregnant does because the foetus and associated fluids could weigh 10 kg or more if the does are close to kidding. To calculate the feed requirement of pregnant does, you can use, as a guide, the weights of dry does on the property that are of the same age and breeding. Pregnant does need only slightly more than a dry doe equivalent ration for the first 3 months after joining. During the fourth month of pregnancy they need a small increase in feed, but the big increase in demand is in the fifth month. This is because the unborn kid makes 80 per cent of its growth in those last few weeks and places a heavy demand on body reserves. The energy requirement in the fifth month of pregnancy is at least 50 per cent greater than that required by an equivalent dry doe. This figure is even higher for twin-bearing goats, which are common.

When feed consumption is insufficient to supply the full energy requirement of the doe and the foetus, pregnancy toxemia can occur. This condition is not confined to does in poor condition—fat does are also susceptible. Prompt, early treatment is necessary.

The mating period, and therefore kidding, is usually spread over 4-8 weeks. In practice it is not possible to increase the feeding level for every doe at precisely the right time, and there will always be a compromise between the ideal and the practical. In drought you should try to get the best return for each dollar you spend. The best time to increase the feed supply to pregnant does is 2-3 weeks before kidding starts.

Harnesses used at joining time are a valuable aid in drought management, making it easy to identify and draft off each group of does as kidding time approaches and feed them accordingly. Udder development can be detected 2-3 weeks before kidding starts, and this can be used to pick out early kidders. Ultrasound can also be used for this purpose, as well as for identifying twin-bearing does, which can also be given appropriately more feed.

The most favourable birthweight for single-drop kids is 2.9 kg. Poorly fed does will produce light kids and, providing these does are not in weak condition, they will have few kidding problems. However, light kids are more likely to die from exposure, starvation or predators.

Lactating Does

Milk production is related to the doe's energy intake. When the diet is low in energy, production declines, the doe loses weight, and kids do not thrive. The rapid growth rates expected in meat-type kids will require 1 litre of milk per day. Table 5 is a guide to the additional energy requirements of pregnant and kidding does, and lists the minimum amount required. Any cold weather will increase this requirement.

Table 5. Feed allowances for the liveweight maintenance of various classes of goat compared with a dry doe or wether on a full grain ration.

Class of goat	Correction (%)	Minimum crude protein (%)
Dry doe or wether (35 kg)	1.0	6
Doe in last 6 weeks of pregnancy	1.5	8
Doe with kids to 1 month old	3.2	10
Doe with kids from 1-3 months old	2.3	10
Weaner 10 kg	0.6	12
Weaner 20 kg	0.8	10-12

Kids

To ensure reasonable kid survival and suitable weaning weights, the ration for does and kids should contain some hay—preferably at least 20 per cent by weight of good pasture or lucerne hay. If rapid kid growth is required, as in meat production, feed an equal weight of hay and grain.

Mismothering of kids is common in does that are supplied with insufficient feed in late pregnancy. If the problem is one of normal-sized kids dying at about 1 week of age, the cause is most likely to be insufficient milk. Increase the feed ration or provide good-quality hay.

Weaners

Early weaning is occasionally practised in normal seasons and is of considerable value in times of drought. Survival of early weaned kids depends on:

* suitable body weight for age;
* adequate and suitable feed and water;
* disease control, including control of internal and external parasites.

Under field conditions there is always a difference in the age of kids, and some grow faster than others. Therefore, select an average age and weight, and wean kids when the average age is 7-8 weeks, provided their minimum weight is 7 kg (many will be 9-10 kg or heavier). At this stage some kids will already have been

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naturally weaned from their mothers in drought time. Any kids weaned younger and smaller than this will have a poor chance of survival. A second weaning 3-4 weeks later is necessary to allow the younger kids to reach a satisfactory weight.

Move any does that are obviously searching for weaned kids to a separate area, and gradually reduce their ration. But do not do this too rapidly. Aim to have them restricted to dry doe rations by 2 weeks after weaning. A rapid decrease in feed consumption may cause some deaths.

The ideal feed for weaned kids is some form of green pasture or crop—grazing lucerne is outstanding. Small areas of irrigated lucerne will feed large numbers of kids, particularly if you use some form of rationing as well. One paddock can be used for several mobs and will serve as an excellent supplement to dry feed—even 1 hour per day is beneficial.

If no palatable grazing is available, it is best to confine kids to small areas or yards and fully feed them on grain and some hay. Oats or lupins are the safest grains for newly weaned kids. Although it is expensive, lucerne or clover hay is better than grass or cereal hay because of its higher digestibility and because it provides a greater intake of digestible energy and protein.

Survival Feeding
When kids are 4 months old they can be introduced to a high percentage of grain in their diet, but it is advisable to continue to feed them hay. Leave a period of 2 weeks for the gradual increase in the grain ration.

Production Feeding
To achieve fast growth rates, kids must be fed ad lib with a nutritious feed. The best ration is a mix of cereal grain and legume hay. Growth is not vastly different on any ration of grain and hay provided it contains at least 30 per cent grain with a maximum of 70 per cent, and provided also that the hay is good-quality lucerne or similar.

The final choice of "hay to grain" ratios will depend on the cost and availability of each. Another possible ration is lupins and poor-quality hay at 70:30 ratio-this would be useful if lupins are readily available.

Shy and Dominant Feeders
During drought feeding, it is inevitable that some goats will become shy feeders and refuse to join the general rush for feed. Alternatively, dominant feeders will force out some of the weaker goats.

You will see shy feeders on the fringe of the general mob. They lose weight rapidly because they are not eating the ration provided; they will not survive for long unless you take remedial action. You can

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September 22, 2001 – NWCA Presents:

A seminar by Christopher J. Lupton, Ph.D.
Professor, Department of Animal Science, Texas A&M University

Chris Lupton is Project Leader for animal fiber research conducted at the Research and Extension Center in San Angelo. He is a member of the Animal Nutrition Section in the Department of Animal Science and of the Graduate Faculty of Texas A&M University, Angelo State University and Texas Tech University. He earned his bachelor's degree and doctorate at the University of Leeds, England, in the field of textile chemistry.

Dr. Lupton plans and conducts a research program dealing with wool, mohair and cashmere that provides information as an aid in improving fiber production, quality, value and marketing. Because the Wool and Mohair Research Laboratory in San Angelo has unique capabilities for evaluating animal fibers, his research addresses areas of high national priority and involves cooperation with USDA and scientists from universities across the United States.

Dr. Lupton will be speaking at the Oregon Flock and Fiber event in September for NWCA. This seminar will focus on fiber analysis (cashmere) as well as the recently concluded Latitude Study, where cashmere and angora goats were divided into three test herds, in Montana, south Texas, and Alaska. The three year project was designed to study the effects of climate differences on fiber growth. The seminar is offered free to NWCA members, $10 for nonmembers. Mark the date on the calendar – Saturday, September 22nd, 6:30pm - 8:30 pm, basement of Main Pavilion,Clackamas County Fairgrounds, Canby, Oregon.

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minimise the number of shy feeders by adopting the following management practices:

* Draft goats into groups of uniform size, weight and condition. Keep young goats separate.
* Limit the number in each mob, with full-grown goats in groups of 1000 or less, and kids and weaners in groups of 400 or less.
* Feed in small paddocks or large holding areas that have good shade and water. The feeding area should be visible to all goats-paddocks with hills, gullies and patches of dense timber are unsuitable.
* Make the feeding trail as long as possible. A circular trail is preferable to a straight trail. If you are using troughing, make sure there is enough space for all goats to eat at once.
* Intermittent feeding is preferable to daily feeding; however, newly weaned kids will need daily feeding. Daily feeding is also necessary during long periods of wet weather in order to replenish feed spoilt by rain.
* Remove shy feeders and feed them separately with good legume hay. As consumption increases, gradually introduce grain until they are on the same routine as the main mob. You can then return them to the main feeding area.

How Often to Feed

How often you feed your goats will depend on the type of goats, the type of feed, the availability and capacity of troughs and self-feeders, the number of goats to be fed, whether you are feeding your goats in distant paddocks or in yards, weather conditions, and possible feed loss to kangaroos, pigs and birds.

Figure 5. Allow sufficient feeding space for all goats to feed at once. Trails on the ground are usually sufficient; however, troughs may be necessary in special circumstances.

If you are giving your goats high-protein feeds to supplement low-protein roughage, do not let the interval between feeds be longer than 3 or 4 days.

Does and kids are sometimes difficult to feed without the mismothering of several kids occurring. One way to combat this is to put out the feed at night in an area that is well away from the camp but where the goats are known to traverse during the day. Alternatively, put out the feed in an adjoining paddock and open the gate next morning. When the goats leave at night to camp, shut the gate and put out the next day's ration.

Does and kids should be fed more frequently than dry stock, particularly when kids are a few weeks old and starting to eat with the does.

How Much to Feed

The most important thing to consider when you are drought feeding is energy. The amount of feed necessary to provide all the energy needed will depend on the energy value of the feed, the minimum shorn liveweight at which the goat will survive, and any special considerations, such as pregnancy, walking or cold stress, that require extra energy intake.

The relationship between weight and age also influences energy requirements. Larger and older goats need less feed in relation to liveweight than do smaller, younger goats. For example, a mob of dry goats with average liveweight of 40 kg do not require twice as much feed as a mob of 20 kg weaners.

All variables in feed quality and goat requirements have been included when calculating the tables. Feeding levels include an allowance for energy expended in normal walking, and will be sufficient to maintain goats at the selected liveweight. If more feed is provided, goats will stabilise at a higher weight. With less feed, goats will lose weight, and if this weight loss is too severe, they will die.

Energy Value of Various Feeds

The energy values of the various feeds shown in Table 6 (next page), and in Table 2 (page 11), are based on the metabolisable energy (ME) contained in each feed and are expressed in megajoules (MJ) of ME per kilogram of feed, corrected to 90 per cent dry matter. For example, grain with 90 per cent dry matter contains an average of 12 MJ of ME per kilogram.

This system is the most useful for drought-feeding calculations because it takes into account the digestibility of feed in relation to its total energy content,

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and gives an accurate assessment of the energy actually available to the goat. Feed that has a high-energy value, such as grain, is more digestible than low-energy feed such as poor hay. Therefore, a greater proportion of the total energy is available to goats from grain than from poor hay. For example, a 35 kg goat would require 430 g of grain per day or 1000 g of poor hay-more than twice as much feed with half the energy value.

The Cost of Feeding

The energy values of feed shown in Table 6 and Table 2 are expressed on a weight basis, and all cost calculations have to be done on weight, not volume. You can use Table 7 (page 19) to compare the value for money of different types of feed. Read downwards to compare relative costs; figures in the vertical column represent matching cost per unit of energy. Choose a feed from the right-hand column (for example wheat), then select the price per tonne for which you can purchase it (for example $140). Look down that column to see how much you have to pay for other feeds and compare on a "cost per unit of energy" basis.

When you are calculating the cost of a feeding program, it is the cost of each unit of energy that is important. Feed that has the lowest price per tonne may not prove to be the cheapest source of energy.

Cold Stress

Goats are more susceptible to cold stress than are sheep. Under cold stress conditions, goats will require additional feed to replace the energy used to maintain body heat.

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Table 6.
Most likely dry matter (DM), metabolisable energy and protein content of feeds.

		ME (MJ/kg DM)		Crude Protein %DM	
Foodstuff	Dry matter (%)*	Average*	Tested range	Average*	Tested range
Low protein dry roughages					
Oaten hay	90	9.3	(8.5-9.5)	5.8	
Wheaten hay	90	8.0		6.0	
Pasture hay (mostly grass)	85-90	8.3		6.0	
Oat, barley or wheat straw	90	5.0	(4.5-5.5)	3.0	
Sorghum stubble	90	7.0	(6.5-8.0)	3.6	
Cottonseed hulls	90	7.0		3.9-4.5	
Rice hulls	90	2.4		2.0-3.1	
Corn stubble	90	5.5	(4.5-6.5)	4.8	(2-7)
Soybean stubble	90	5.5	(4.0-6.5)	5.5	(4-6.5)
Peanut hulls	90	3.6		3.3	
Oat hulls	90	5.3	(5.3-5.4)	3.8	
Sorghum (failed crop)	90	9.0	(8.5-9.5)	7.4	
Peanut hay	90	8.5	(8.0-9.0)	9.3	(7.6-10.7)
Soybean hay (mature)	90	6.0	(5.5-6.5)	8.1	
Wheat stubble	90	5.1	(4.8-8.2)	-	
Barley stubble	90	5.5	(5.1-6.2)	-	
Rice stubble	90	5.7	(5.3-6.6)	-	
Oat stubble	90	4.6		-	
High-protein dry roughages					
Lucerne hay	90	8.5	(8-9.8)	15-20	
Clover hay	85-90	9.0	(8.3-10.9)	13	
Pasture hay (mostly clover)	85-90	8.3		11	
Cowpea and field pea	90	9.5		16	
Soybean hay (full pods)	90	9.5	(9-10) 13-14		
Soybean hay (75% pods)	90	8.5	(8-9) 17		
Low protein wet roughages					
Maize silage	25-30	8.5	(7.5-9.5)	6.9-9.0	
Sorghum silage	25-30	8.0	(8.0-8.5)	6.9-7.5	
Oat, wheat, barley or rye green fodder or silage (cut at flowering stage)	25-30	8.5	(8.3-8.7)	6.0-8.0	
High-protein wet roughages					
Lucerne green fodder	25	8.3		16	
Lucerne silage	25-30		8.4	15	
Pasture fodder (mixed grass & clover)	25	10.3		17.5	
Pasture silage (mixed grass & clover)	20	8.2		16	
Young oats, wheat, barley, rye, or millet grazing	25	9.3		10	
Grains					
Maize	90	13.5	(13-14)	9.5	(9.0-10)
Grain sorghum	90	13		9	(5-11)
Wheat	90	13	(12.5-13.5)	12	(11-13)
Barley	90	13	(12.5-13)	11	(10-12)

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The level of cold stress experienced will be determined by temperature, wind speed and the fibre length on the goat. Increasing fibre length has an insulating effect against the cold, while increasing wind speed considerably increases the chill factor. For example, a goat that is only 2 weeks off shears and is experiencing a minimum daily temperature of 0°C and a maximum of 10°C with a wind speed of 15 km/h would require an increase of 170 per cent on the normal ration.

Table 6. Continued from previous page

Foodstuff	Dry matter (%)*	ME (MJ/kg DM) Average*	ME (MJ/kg DM) Tested range	Crude Protein %DM Average*	Crude Protein %DM Tested range
Grains-continued					
Oats	90	12.5	(11-13)	10.5	(10-11)
Lupins		13		32	
Cereal grain by-products					
Wheat pollard	90	11		15	
Wheat bran	90	12		15	
Oat bran	90	9		8.0	
Hominy	90	12.6		11	(10-12)
Rice bran	90	11		14	
Protein-rich concentrates					
Soybean meal	90	12		50	
Safflower meal	90	11		40-55	
Peanut meal	90	11		42	
Cottonseed meal (decorticated)	90	10.5		41	
Linseed meal	90	11.5		30-35	
Sunflower meal	90	10.5		40-45	
Coconut meal (6% fat)	90	12.5		21	
Milk powder (cow's whole)	90	17		26.5	
Milk powder (cow's skimmed)	90	12.8	(12.6-13)	36	
Urea (46% nitrogen)	90	-		Equivalent to about 280	
Miscellaneous					
Brewers grains (dry)	90	9.5		20	
Molasses	75	13		3.5	
Sheep and cattle nuts	90	11	(9-13)	15	

Digestibility of Feed

The total amount of any feed a goat can eat and digest depends largely on the digestibility of that feed. Feed that is easily digested is consumed in greater quantities than feed that is hard to digest. Energy value and digestibility of feed are closely related, and the high-energy feeds (for example grain and lucerne hay) are generally more digestible than the low-energy feeds (for example poor pasture hay and cereal straw).

The amount of low-energy feed that goats eat is so severely restricted by poor digestibility that goats are unable to eat sufficient amounts of feed, such as cereal straw, to provide their basic energy requirement for maintenance. However, the amount of lucerne hay that dry goats can consume will provide more than sufficient energy for survival.

When the diet has an energy value of 7 or less, adult dry goats cannot eat enough to maintain their liveweight. Kids and weaners require better feed than that required by older goats, and their ration should have an energy value of at least 8.5. To prevent liveweight loss, and possibly death, supplement poor-quality roughage with a protein-rich feed or one with a high-energy content (see the section "Basic animal requirements" and Table 6.)

Hammermilling improves the digestibility, and therefore increases the consumption, of low-quality roughage, but it is a time-consuming and costly operation, and the degree of improvement is relatively small. A supplement of grain will produce better livestock performance in most situations, and will be more economical.

Calculation of Feed Quantities

The calculation of feed requirements must be precise if the objective of least cost feeding for survival is to be achieved. Some examples of how to calculate feed requirements are given below. These examples use Figure 6 (page 20). Place a ruler on the appropriate point which represents the shorn empty liveweight (kg) of the goats under assessment (the left-hand vertical scale of the figure), then run the ruler through the energy content of the feed (the centre angled scale). The point where the ruler cuts the right-hand scale indicates how much feed (in grams per day) needs to be fed to these goats to maintain liveweight.

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Example 1

Q: What amount of wheat is needed to feed Angora wethers that have 1 month's fleece, when the weather is fine and calm with a minimum temperature of 15°C?

A: The minimum liveweight for survival is 35 kg. The energy value of wheat is 13 (from Table 6). A line drawn from 35 on the left-hand scale of Figure 6 (next page) through 13 on the centre scale will give you the answer on the right-hand scale: 385 g per goat per day. Include limestone in this ration. Because these are dry goats, you will not need to refer to Table 5 for the correction factor, and you will not need any additional feed for cold weather.

Example 2

Q: What amount of oats is needed to feed Angora does that will kid in 4 weeks? The mohair length is 50 mm, the normal temperature range is between 5°C minimum and 15°C maximum, and there is no wind.

A: The minimum liveweight for survival is 30 kg. The energy value of oats is 12.5 (from Table 6). The feed required for a dry goat is 360 g per goat per day (from Figure 6). The feed requirement for these pregnant does is 1.5 times the requirement for dry goats (Table 5) or (360 × 1.5). The total is 540 g per doe per day. No additional feed is required for normal weather conditions. Include limestone in this ration. If you are using lucerne hay, calculate as follows: The energy value of lucerne hay is 8.5 (from Table 6). The quantity required by a 30 kg dry doe is 590 g (from Figure 6).

Table 7. Feed price equivalents for drought feeding, based on energy values of feed.

ME* (MJ/kg)	$ per tonne									Examples of Feeds
13	100	140	180	220	260	300	340	380	420	Maize, wheat, triticale, sorghum, lupins, peas
12	92	129	166	203	240	277	314	351	388	Barley, good quality oats, sorghum
11	85	118	152	186	220	254	288	322	355	Medium quality oats, most nuts
10	77	108	138	169	200	231	262	292	323	Poor quality oats, good legume hay
9	69	97	125	152	180	208	235	263	291	Good pasture and cereal hay
8	62	86	111	135	160	185	209	234	258	Medium quality hays
7	54	75	97	118	140	162	183	205	226	Poor quality hay
6	46	65	83	102	120	138	157	175	194	Stubbles, cottonseed hulls
5	38	54	69	85	100	115	131	146	162	Rice hulls, sunflower hulls, rice straw

*** This is the energy value of the feed; ME = metabolisable energy, MJ = megajoules per kilogram of dry matter (see Table 6). Most grains and hays contain about 10 per cent moisture, a component which has no feed value. When buying feeds with a higher moisture content than this (for example molasses, silage or turnips), try to ensure that the price is discounted to relate to dry matter content only.**

Mixtures

When feeding a mixture of hay and grain, work out the average energy value in the following way:

Example 3

Ration: 50 per cent poor hay, and 50 per cent wheat

Energy value of poor hay: 50/100 × 7 = 3.5
Energy value of wheat: 50/100 × 13 = 6.5
Total = 10 MJ/kg DM

The 50:50 mixture will have an energy value of 10. Figure 6 shows that 35 kg wethers will need approximately 540 g per head per day of this mixture (270 g wheat and 270 g hay). Limestone should be included in this ration.

Example 4

Ration: 30 per cent good hay, and 70 per cent oats

Energy value of good hay: 30/100 × 8.5 = 2.6
Energy value of oats: 70/100 × 12.5 = 8.8
Total = 11.4 MJ/kg DM

The 30:70 mixture has an energy value of 11.4. Figure 6 shows that the same 35 kg wethers as in example 3 will need approximately 460 g per day composed of:

30/100 × 460 = 138 g good hay, and
70/100 × 460 = 322 g oats

Note: Does close to kidding and does that are lactating may require more than 4 kg of grain per head per week "on paper", but there is a risk of digestive disorders if more than 3 kg is fed. The balance of their needs is best supplied by roughage such as good hay.

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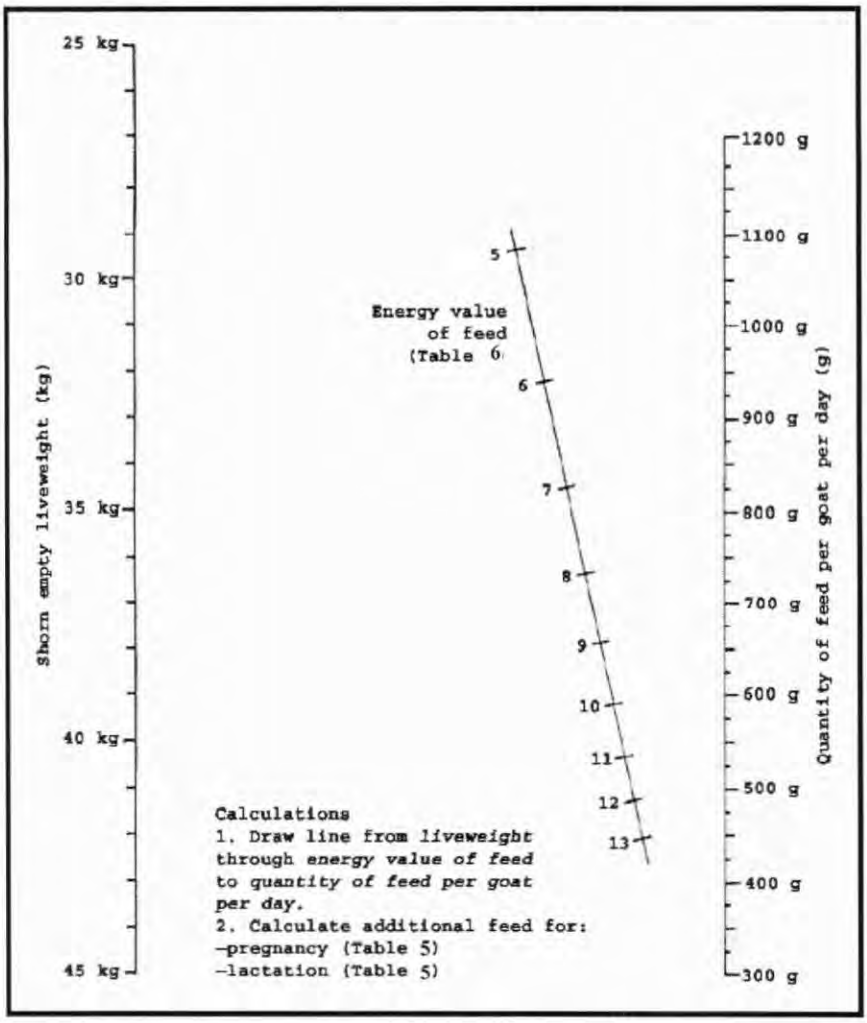
Continued from previous page

Figure 6. Maintenance feed requirement of goats. *(Not to be confused with Table 6. on pages 17 and 18)*



Editor's Note: This is an awesome chart! This chart will enable you to calculate the amount of a particular feed required to maintain a goat of a certain weight. You will need to use Tables 1, 5 and 6 in conjunction with this chart.

Shearing

Mohair grown under drought feeding conditions will be finer in fibre diameter and shorter than in normal seasons. It may also be tender and will almost certainly carry more dust. For these reasons it may be advisable to shear, so that fleece grown before the drought can be kept separate from any fibre produced under drought conditions.

Seasonal conditions must be fully considered before deciding whether to shear. Angoras carrying less than 40 mm of fibre (1-2 months' growth) are very susceptible to cold stress, so shearing must be completed well before the start of winter. This is particularly so if goats are in low condition score.

Increased energy requirements must be met with an increased ration of feed. As this will increase the total cost of feeding, it is preferable to delay shearing of Angoras until warmer weather, and to make special arrangements for Cashmere goats. Goats take 4-6 weeks to acclimatise after shearing; therefore extra feed (pre-shearing and post-shearing), shelter and coats may be necessary for several weeks.

Off-shears losses in cold weather are influenced by the rate of liveweight loss immediately before shearing, the actual liveweight at the time of shearing, and body condition. Because the rate of liveweight loss is the most important of these factors, every effort should be made to stabilise liveweight before shearing by feeding an increased ration. Store-conditioned goats that are maintaining their weight can withstand more cold stress after shearing than can better conditioned goats that are losing weight rapidly before shearing. During late spring and summer, shear Angora kids being introduced to a feedlot for production feeding in order to prevent dust contamination of the fibre.

When the Drought Breaks

For goats that have survived dry weather and feed shortages, the period during and immediately after drought-breaking rains can be critical. In previous droughts, many

Continued on next page

Goat food—Black Gold's favorite subject (after sex, of course).

Drought Feeding
Continued from previous page

properties have experienced their heaviest stock losses at this time. The immediate problem is prolonged wet weather in which goats eat little or none of their rain-sodden ration, particularly when grain is fed on the ground. Their energy intake is well below the additional quantity needed, and goats in poor condition can die before the rain stops. Boggy conditions and local flooding can prevent vehicle access to the feeding area, and weak goats have real difficulty moving in such conditions. It is essential, therefore, to confine goats to feeding sites that are accessible by vehicle after rain. The alternative is to establish an emergency feed dump at the feeding site, preferably including hay, so that goats survive the rain period. Feeding areas should be well drained, and located where floodwater will not isolate any of the mob.

As soon as the first green pick emerges, goats will leave their drought rations and expend a lot of energy attempting to graze. For preference, all goats should be kept in confined areas until new pasture is well established and can provide worthwhile grazing. At that point they can be gradually weaned off drought rations and allowed some grazing.

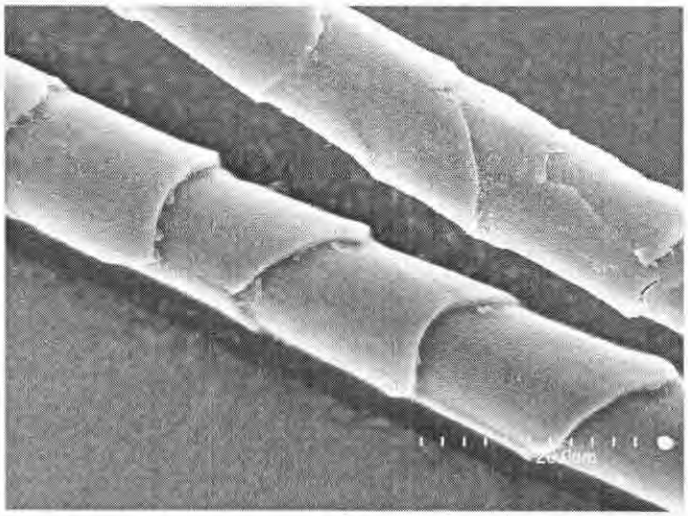
When goats change from one feed type to another, such as from drought feeding rations to green pasture at the break of the drought, there is increased risk of enterotoxaemia (pulpy kidney). Vaccinations should be up to date, and a booster vaccine could be beneficial at the break of the drought.

Acknowledgments
The contributions of Trevor May (Former Program Leader (Goats), Dubbo), Peter Semple (Former Livestock Officer, Nyngan) and Brent Turner (Former Livestock Research Officer, Orange) are gratefully acknowledged. Parts of this Agfact were adapted from an earlier publication, Agfact A3.5.4 Drought feeding of sheep.

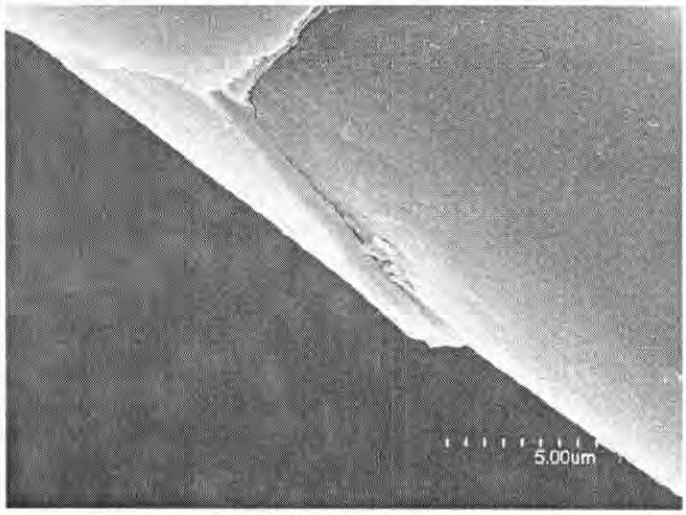
The information contained in this article is based on knowledge and understanding at the time of writing (January 18, 2001). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Agriculture or the user's independent adviser.

CashMirror thanks the New South Wales Department of Agriculture and Ted Scarlett, the author, for their generous permission to reprint this information. There is a much valuable information contained here. You can access this article and other good information from their web site: http:/www.agri.nsw.gov.au

Snow White's (First) Fleece



Cashmere fibers—from a fleece averaging under 14 microns, magnified a bazillion times. Photographs by Adam Varley, Vartest, New York City, New York. Notice the scales on the cashmere. The small white line markings on the lower right section represent a distance of 20 μ (microns).



Cashmere fiber—magnified even more. The scale on the lower right represents a distance of 5 μ.

Remember Snow White, the goat with a fondness for human ankles as a kid? (page 3, this issue) These SEM photographs are taken of her cashmere, from her first fleece.

Cashmere fibers have about 6-7 scales per 100 μ length. The scales are smoother-edged, but more prominent than mohair scales.

Adam Varley is an owner of a lab that specializes in testing blends of cashmere and other fibers such as wool and nylon as well as in the general testing of fiber, yarn, fabric and apparel—for things like colorfastness, shrinkage and flammability.

I'm sure Snow White, who is now age 3, will want to show these photographs to her kids.

Goat Standing Orientation and Behavior
(Why Did They Want to Know This?)

A recent Small Ruminant Research Journal (Vol 41 (1), 2001, pp. 91-94) printed a paper about research conducted by K. S. Das and B. B. Srivastava, Indian Veterinary Research Institute, India.

The researchers explained the project as a field study to observe the standing orientation and behavior of meat goats during transit by road. They observed 10 (randomly selected) goats during a 50 minute road trip, for a total of 10 trips—different goats each trip. To do this, two observers (they did not say whether the two observers were Das and Srivastava or two carefully selected and trained graduate students) rode with the goats on the deck of the truck and noted goat behavior—each observer observed 5 goats.

They observed in which direction the goats pointed themselves during the trip and noted the occurrence of other goaty activities. Goat orientation and the average time for each direction were as follows:

Parallel to truck's direction of travel	24.7±2.1 minutes
Diagonal orientation	11.9±1.6 minutes
Perpendicular orientation	9.1±1.4 minutes

The goats generally did not like to face opposite the direction of travel and they showed a "clear bias" against the perpendicular and diagonal orientations. The animals changed their orientation frequently, apparently to maintain their balance.

Other behaviors noted (and the average number of times each goat did it during each trip):

Bleating	1.3	Jumping	.7
Pushing	.9	Fighting	.7
Falling	3.1	Urination	.5
Defecation	.3	Rumination	.1

Sorry there are no standard deviations here for you. It was noted by the observers, that jumping and bleating occurred mostly at the beginning of the journey. Falling was associated with the driver's changing of speed, braking, cornering, hitting speed bumps and acceleration.

Researchers' Conclusions
The falls, which hamper the well being of animals in transit and cause bruising, can be prevented by careful driving and by adjusting vehicle speed gradually.

CashMirror Conclusions
Are we missing something here?

Goats Difficult to Catch? Don't Feel Bad
It Took Wildlife Biologists 7 Days to Capture 16 Goats

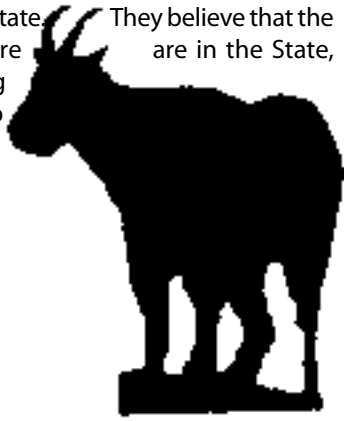
Wildlife biologists in Oregon recently captured wild Rocky Mountain goats in the Elkhorn Mountains in northeastern Oregon. The goats were being captured to transplant to Hells Canyon, a prior native habitat of this goat. Biologists used salt blocks to lure them into their trap—an overhead net activated by a radio signal sent by humans hiding in the nearby huckleberry brush.

Once the goats were captured, they were blind folded, hobbled and short pieces of rubber hose were placed over their horn tips. The goats were given an antibiotic for minor wounds, ivermetctin for parasites, and selenium to prevent capture myopathy. Capture myopathy is a disease of wild animals caused by the stress of capture; their body temperature rises and if not treated, the animal can die from the stress. Blood was drawn to screen for diseases, goats were ear-tagged, and seven older goats received radio collars, in order to be tracked after their release to determine if the transplant was successful.

Much earlier, in 1950, wild goats were transplanted from Washington to Joseph Mountain in the Wallowas in Oregon. Hunting for these animals began in the mid 1960's and continued for four years, when the population began to decline. It was learned that even though only males are generally targeted for hunting, nannies were often killed due to their similar appearance. The removal of "key" nannies from a herd (perhaps the herd leader?) seemed to have a detrimental effect on younger animals in the herd. It was also thought that the decline might be due to inbreeding.

In the late 1980's, goats were again introduced to the Wallowa and Elkhorn Mountains. These later releases were deemed successful and the goats thrive in the two areas today. Both populations currently show signs of healthy, productive and expanding populations. The Elkorn herd, excluding the animals trapped and moved, numbers 92 and the Wallowa herd has about 150 goats. Annual hunting permits for the wild goats have been limited. Per Pat Mathews, Assistant District Biologist from Enterprise, Oregon , "The Wallowa Mountains have so much more unoccupied goat habitat, that crowding them a bit will force them into these other ranges and thereby greatly increasing hunting opportunities in the future."

Another goal of the Wildlife Department is to start new goat herds in other areas of the State. They believe that the more separate wild herds there are in the State, the less chance there is of losing Oregon's goat population to disease or other disaster.



Herd Liquidation

Take advantage of the liquidation of one of America's premier cashmere studs to add to or augment your existing herd of cashmere-producing animals. All animals, with the exception of the Spanish does and their cross-bred offspring, are pedigreed. Fleece tests (from TX A&M) are available for many of the superior bucks. This sale is in effect until the end of October, 2001.

Cashmere Does

Cashmere Bucks

Fleece-tested bucks	**$750**
3 year old and older cashmere bucks	**500**
2 year old cashmere bucks	**350**
2 year old and older cashmere does	**250**
2001 cashmere kids—before 8/31	**75**
2001 cashmere kids—after 8/31	**90**
Yearling cashmere bucks	**250**
Yearling cashmere does	**200**
2001 Sp/cashmere X kids	**15**
2001 Sp/cashmere X kids, bottle fed	**25**
Spanish (Texas) does	**100**

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Discounts for multiple purchases—10% off for 10, 20% off for 20, 25% off for 30, 30% off for 40, 35% off for 50 or more.

PRESIDENT BUSH'S SUPPLEMENTAL SPENDING REQUEST INCLUDES *$35 MILLION* TO GUARD AGAINST FOREIGN ANIMAL DISEASES

WASHINGTON, June 1, 2001. The President's FY2001 supplemental appropriations request to Congress will include an additional $35 million for the United States Department of Agriculture (USDA) to enhance activities designed to protect U.S. agriculture from serious animal disease threats such as foot and mouth disease (FMD) and bovine spongiform encephalopathy (BSE).

"Given the various foreign animal disease outbreaks in other parts of the world this year, USDA has been conducting a top-to-bottom review of its core programs to ensure we have the necessary resources to protect American agriculture from devastating animal diseases," said USDA Secretary Ann M. Veneman. "These additional funds will help strengthen these important programs."

Components of the FY 2001 supplemental request include:

$4.5 million for inspections at U.S. borders and ports of entry for passengers and cargo arriving from other countries, with a special emphasis on those countries affected by FMD and BSE;

$24.6 million for additional veterinarians and animal health assessments to ensure that foreign animal diseases would be detected quickly should they ever penetrate U.S. borders. This includes $13.5 million to strengthen state surveillance and infrastructure programs.

$1.9 million for contingency planning for immediate control and eradication in the event of a foreign animal disease outbreak;

$1.7 million for technical assistance worldwide to monitor diseases and help those trying to control and eradicate them; and

$2.3 million for continuous improvement of tools and technologies through research.

"While we have been vigilant for years and have successfully prevented many foreign animal diseases from entering our country, recent outbreaks of foot and mouth disease across the world and ongoing concerns about BSE underscore the need to strengthen our safeguarding system," Veneman said.

Earlier this year, in the wake of FMD outbreaks in Europe and other countries, Secretary Veneman authorized $32 million in spending for the hiring of 350 new inspection personnel and the doubling of USDA's canine inspection teams. This was in addition to nearly 400 inspectors already being hired during 2001 and another 200 being reassigned from other program areas.

USDA has taken an integrated approach to protecting the United States from FMD and other diseases. This has included prohibiting shipments of products from high risk countries; increasing personnel at ports of entry; tightening regulatory enforcement; increasing surveillance of incoming passengers and cargo; enhancing monitoring and surveillance of domestic livestock; strengthening federal, state and industry coordination; implementing public education campaigns; and dispatching experts to other countries to assist in containment efforts. USDA continues a top-to-bottom review of these core animal and plant health programs to ensure it has the necessary resources to prevent foreign animal diseases from entering the U.S. and has the ability to eradicate such diseases should they ever enter the country.

FMD is a highly contagious and economically devastating disease of ruminants and swine. The United States has been free of FMD since 1929. FMD is one of the animal diseases that livestock owners dread most because it spreads widely and rapidly and because it has grave economic consequences. The disease is not a human health concern.

BSE—which is not related to FMD—is a chronic degenerative disease affecting the central nervous system of cattle. It has been linked to new-variant Creutzfeldt-Jakob disease in humans. USDA has conducted an aggressive exclusion and surveillance program for a decade. BSE has never been detected in the United States.

Current information on FMD and BSE are available on the Internet at www.usda.gov or for recorded FMD traveler information call 1-866-SAFGUARD.

Inquiring Minds Know the Answers!

"In answer to your (Paul's) query about why goats' eyes appear blue or green (in photographs), it is because they are herbivores and not carnivores, like humans are. Deer, cows, sheep and other animals that eat only plants also have the blue or green color. You can see it at night when a deer is on the side of the road, for example. Dogs, cats, people and other carnivores will have the red reflection."

...Ann Dooling, Dillon, Montana

Calendar of Events

July 24 - 26, 2001
Goat Producers Gathering, YO Ranch Resort Hotel, San Antonio, Texas. Organized by the Texas Agricultural Extension Service. Presentations, demonstrations, trade show, concurrent session on basic management procedures, Cabrito Cuisine cook camps, live animal evaluation, goat showmanship, update on goat meat industry, health management and predator control. More information: Dr Rick Machen 830-278-9151, email: r-machen@tamu.edu

August 11-12, 2001
NWCA Fleece competition (11th), Llama Show and Fiber Arts Show, Evergreen State Fairgrounds, Monroe, WA. Featuring sheep, goats, llamas, alpacas and rabbits. Animals and fleece for sale, fiber judging, classes, seminars, demonstrations, gift and craft vendors. Info: Sandi Cash, ALSA Show Chair 360-659-9551, casharosa@mindspring.com, Pat Skelton, Fiber Chair 360-445-5262 hbskeltn@gte.net. More information about NWCA fleece competition, contact NWCA.

September 22 - 23,2001
Oregon Flock & Fiber Festival, Clackamas County Fairgrounds, Canby, Oregon.Workshops, classes, animal shows, animal exhibits, vendor booths, contests, lamb and cabrito cookoff. Your one-stop shopping center for the fiber enthusiast. *Cashmere goat show - 10 AM, Saturday, 9/23.* http://www.flockand fiberfestival.com

October 2-3, 2001
ECA Fleece Competition (2nd) and Goat Show (3rd) at the State Fair of Virginia, State Fairgrounds, Richmond, Virginia. Judge, Joe David Ross, Texas.

Association Contacts

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Joe David Ross, Manager, 915-387-6052, fax: 915-387-2642, Email: goat@sonoratx.net
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)
Website: http://www.nwcacashmere.org, Paul Johnson, President, 503-623-5194, paul@cashmirror.com
Diana Mullins, Membership Coordinator, 509-997-2204, dmullins@methow.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, 925-625-7869, email: Igonozo@goldstate.net

Texas Cashmere Association (TCA)
William (Bill) Nagel, President, 4625 Sandy Fork Rd., Harwood, TX 78632, 830-540-4707,
email: bnagel@bvtc.com

"What do you say we finish up here and head into town to get our hooves done?" (City goats)

"I don't know. Do you think we should eat all this or take some to the barn to dry for the winter?" (Country goats)

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Internet listing of these breeders and a link to their email addresses and homepages, if they have one, can be found on the net at:

http://www.cashmirror.com/breeders.htm

Wrong species, boys!

Let's try this one again! This is a photograph of goat shearing in Kurdistan, printed on page 30 in last issue. It was a dark photograph and we didn't improve it in the printing process. We thought it was such a great photo, we're trying it again—hopefully improved by our new equipment.

Cashmere

Information from the Food and Agriculture Organization of the United Nations, FAO AGRICULTURAL SERVICES BULLETIN No. 122 from their internet site at: http://www.fao.org/docrep/v9384e/v9384e04.htm

Introduction to Cashmere

The appeal of cashmere and its unrivalled status as a luxury fibre hinges on three key factors:

Visual appeal and extreme softness,
Scarcity, and
Image or mystique.

As a luxury fibre, cashmere commands some of the highest prices in the world of textiles. Only vicuna and musk ox—neither of which is available in anything approaching commercial quantities—achieve higher prices than cashmere. Another key feature of its attraction is its scarcity in comparison with other well known fibres, both natural and man-made. The uncertainty and speculation which surround the production and availability of cashmere have increased its appeal, sometimes sending prices soaring upwards. Also, the geographical remoteness of cashmere production, the dependence on manual skills in the early stages of processing and the fibre's association with exotic peoples following a traditional rural way of life add to the attraction of cashmere fibre in highly industrialised western urban markets.

Cashmere is one of the alternative—and lesser used— spellings of Kashmir, a region, partly in India and partly in Pakistan, in the western Himalayas. This wild and mountainous area gave its name to the fine soft goat's wool, or down, which first came to the West in the form of intricately woven cashmere shawls. In fact the fibre came not from Kashmir but from Tibet where it was gathered by herdsmen from their goats during the animals' spring moult. Cashmere fibre took its name from Kashmir as it was there that it was spun, woven and sold as a finished item. Today in Kashmir and Tibet— where the fibre is still produced and processed by hand—it is known locally as pashmina.

Production of Cashmere

Detailed information on cashmere production, particularly that in China, is not easy to obtain. Accurate figures on national cashmere production are difficult—if not impossible—to acquire. One source of information is the IWS China Branch which estimates that in 1988 there were 67 million goats in China, of which 40 million were producing cashmere.

However, in 1988, world production of cashmere was estimated at about 5,000 tonnes. This compares with an annual availability of wool in the same year of 1.8 million tonnes. World cashmere production is thought to have declined since then.

Estimates of the volume of cashmere produced in China, Mongolia, Iran and Afghanistan vary considerably. An estimate of current world production of cashmere raw material is 4,500 tonnes, which represents a 10 per cent decline from a figure quoted in 1987 of 5,000 tonnes.

China itself produces roughly 60 per cent of the total volume of raw cashmere, with Inner Mongolia contributing up to 70 per cent of this amount. The remainder is thought to be split roughly equally between Mongolia (20-25 per cent) and Iran and Afghanistan (20-25 per cent). Iranian and Afghan cashmere is of a lower quality to the cashmere from China and is spun into yarn principally for woven cloth.

As well as being by far the world's largest supplier, China produces the best quality cashmere. The Chinese claim that the very finest cashmere is produced north of the 40th parallel in Inner Mongolia (north of the Yangtse River).

Fibre Characteristics of Cashmere

Chinese cashmere has a fibre diameter of between 12.5 and 16.0 microns. A diameter of 15.5 microns is considered a standard for cashmere. The longer the fibre the better the quality. The Chinese Commodity Inspection Bureau (CCIB) specifies that the hair should be longer than 32 mm (1-1/4"). A fibre length of 46 mm (1.8") is considered long.

White breeds are most desirable, as white down commands the best prices. White fibre is preferred since it is easiest to dye, producing the purest colours. This is particularly important for cashmere knitwear where soft pastel shades are perennial favourites. Cross-breeding can result in undesirable coloured fibre.

Cashmere produced in Mongolia is generally slightly coarser, between 16.0 and 17.5 microns, but longer. It is used in knitwear and weaving. Cashmere produced in Iran and Afghanistan has a diameter of 17-21 microns and is chiefly used for weaving.

End Uses of Cashmere

The knitwear industry is the largest consumer of cashmere. Traditionally, Scotland has been the home of the cashmere knitwear industry, producing collections known to prestigious markets all over the world. Many knitwear producers use cashmere from time to time, often using blended yarns. Few specialise in 100 per cent cashmere knitwear, however. The Scottish knitters still constitute one of the biggest markets for cashmere fibre outside China.

The weaving sector is a smaller consumer of cashmere than is the knitwear industry. Nevertheless, significant amounts of cashmere go into accessories (scarves, shawls, stoles), rugs (especially travel rugs and "throws") and cloth for luxury coats, jackets and suits for the menswear trade.

The hair which is removed from the down in the dehairing

Continued on next page

Cashmere
Continued from previous page

process is used in carpets, underfelts, and interlinings for men's suits and jackets.

Planning your Vacation? How about Swaziland?

You might want to plan your vacation to Swaziland at a time other than late January through March.

At this time of year, per the experts at www.salon.com, the nation is gripped by an insatiable lust for having sex and stealing goats. An annual local festival which lasts for two months, is celebrated by consuming a traditional buganu, a drink fermented from maganu tree fruit by women of the low veld. In addition to the drink being a powerful aphrodisiac, it also causes an insatiable desire to eat meat. So, those that aren't pursuing the "company" of people of the opposite sex are often found stealing the local livestock.

The local police spend time chasing down wild-eyed livestock thieves and local health officials would like to monitor or even outlaw the annual festival, but their view isn't popular among festival revelers.

It is thought that the appeal of the festival is a nostalgia for the country life that many have left behind. Drums of buganu drink are hoisted to the top of buses en route to urban areas like Johannesburg. In the populated areas, buganu is consumed during traditional dancing. In rural areas, preceding the beginning of the party, buganu is sprinkled on the ground as an offering in recollection of ancestors.

The taste of buganu is described as piquant and sweet with an aftertaste that tingles the tongue, and other body parts.

Maybe you will want to visit Swaziland in February or March—just remember to leave your goats behind.

Classified Advertising

CashMirror Back issues, $3 each or a dozen for $30. 10/89 - 6/01. About half of old issues still available. Index available. Order specific issues or give us subjects you need and we'll peruse our computer-sortable index and select back issues for you. Great reference material. Order from CashMirror Publications. Price includes shipping.

Children's Book: Buster the Cashmere Goat, Children's book by Paul G. Johnson, CM Ace Reporter. 66 pages, includes photographs, good goat fun. Suitable for reading aloud for young children, 3rd to 4th grade reading level, or for brightening the lives of bored adults. Guaranteed only happy endings. $7.50. Order from CashMirror Publications. http://buster.cashmeregoat.net

Early Computer Logic—"On two occasions I have been asked (by members of Parliament), 'Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?' I am not able rightly to apprehend the kind of confusion of ideas that could provoke such a question." (Charles Babbage)

Maremma Sheepdog Club of America, Maremma Livestock Guarding dogs, PO Box 546, Lake Odessa, MI 48849, 616-374-7209. Free information and Breeder Directory.

T-Shirts: CashMirror and Mild Goat Men, Heavy-duty cotton T's still available in Large and XLarge sizes only. All the Small and Medium people already have theirs. Suitable for "downtown" wear, yet sturdy enough for barn chores. CashMirror T's are natural-colored. MGM T's come in choice of burgundy or dark green. $17.50@. All prices include shipping. Order from CashMirror Publications.

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

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

Classified ads 50 cents/word.

Notable Quotes

"Most minerals can be toxic if given in amounts in excess of requirements. Play safe. Do not provide anything that is not absolutely necessary."

...NWS Agfact A7.5.3, second edition, 1/01

"The most favourable birthweight for single-drop kids is 2.9 kg. (6.38 lb.)."

...NWS Agfact A7.5.3, second edition, 1/01

"In theory, there is no difference between theory and practice. But, in practice, there is."

...Jan L. A. van de Snepscheut

"If a turtle doesn't have a shell, is he homeless or naked?"

...George Carlin

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.

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Blue Ribbon Breeder's Herd
Pictured on cover of CashMirror—November, 2000

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