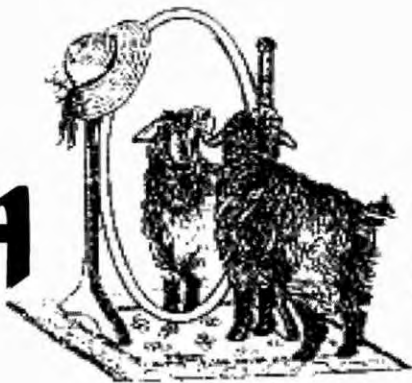
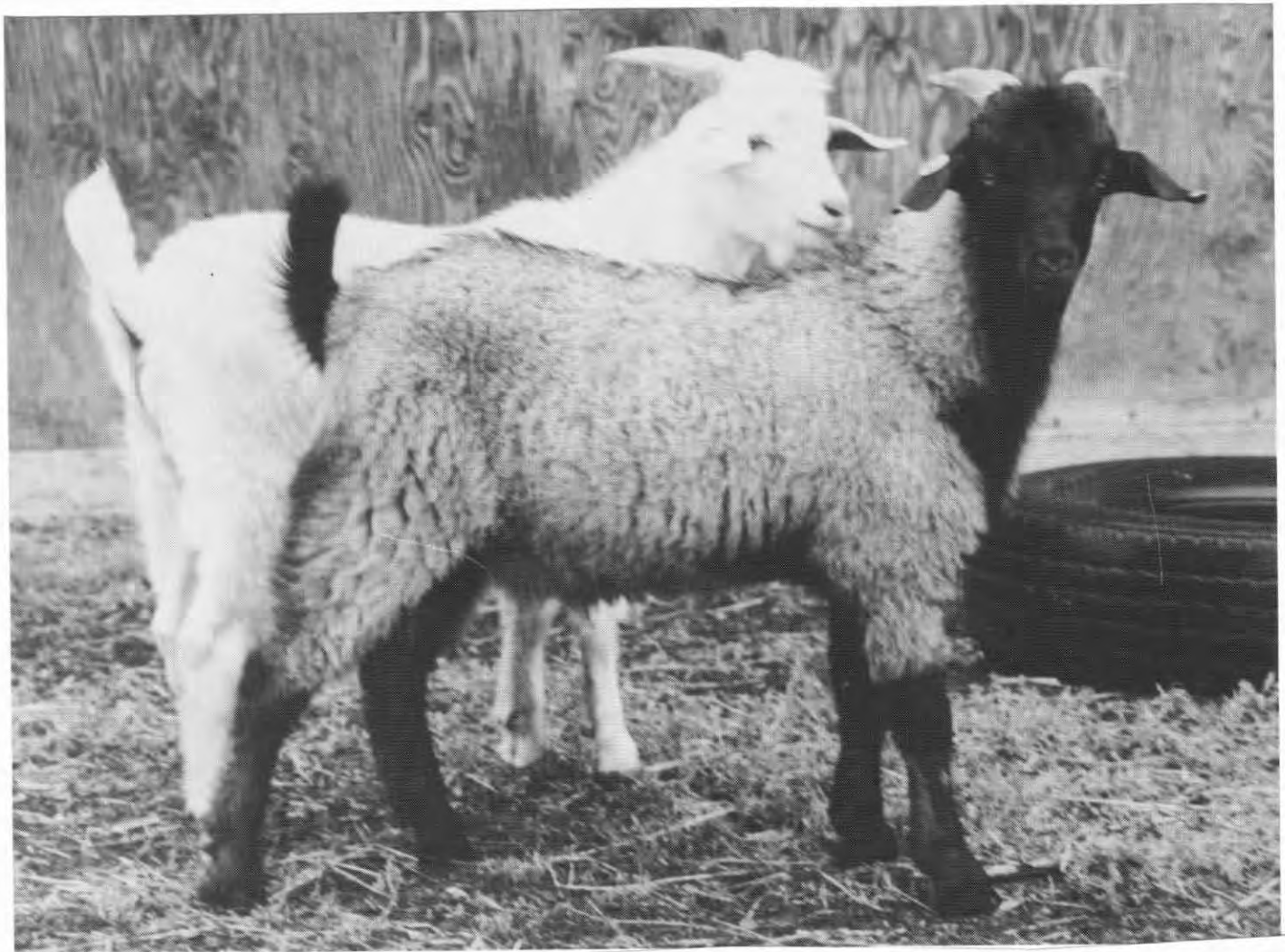


CASH MIRROR



The monthly magazine devoted to cashmere goats and their fiber



Ten Year Anniversary Issue!

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Cover photo:

Gerry and Pat Fuhr, Giant Stride Farm
Buck Kids — GSF Gunther (foreground) and GSF Drifter

Has it Been 10 Years? Already?

Yes! This is the 121st issue of CashMirror Magazine, faithfully published (by various dedicated publishers) for 10 whole years.

Actually, this is the 122nd issue. The January and February 1992 issues were both labeled "Volume 3, Issue 4", so the issue numbers (and our countdown to year 10) have been off ever since. So, actually, last issue should have been the 10 year anniversary. However, since we didn't know, we'll go ahead and celebrate this issue, without much guilt.

For the last ten years, CashMirror Magazine, unlike many small niche magazines, hasn't gone away, it hasn't skipped issues, it hasn't given you handy double-issues, and it hasn't changed its focus to bring you the hot new goat (or other animals) which may currently be in vogue. For better or for worse, it's just hung in there covering cashmere-producing goats and related subjects. This may not have always been the most profitable or businesslike thing to do, but that's the way it has been and will continue to be.

The look of the magazine hasn't changed much after the first year. The first two issues (October and November 1989) looked like they were run off on the office copy machine and stapled hurriedly in the corner. The December 1989 issue was an experiment in newsprint-type paper with a more traditional fold-over style. From February 1990 to September 1990, the publisher played with colored covers. The May 1990 issue was bound in brilliant blue and the September 1990 issue was a disgusting green.

By January 1991, the magazine had settled down to its current format—a natural-colored, heavy cover with an attractive photograph (sometimes a drawing) on the cover. Its size was 28 pages, counting the cover.

In March 1998, we opened the CashMirror Print Shop and began printing the magazine (and other print jobs) in our own shop. Following a couple of shaky-looking issues, the press operator was able to beat the presses into submission and our printing quality has become more consistent. In August 1998, we added spot color to the cover. We haven't had much feedback on this, but we like it so will probably continue to give you a bit of spot color each month on the cover.

We wanted to do something special at the ten year anniversary of the magazine. For six months, we have debated a couple of ideas. Paul wanted to change to a slick, full-color cover—so the people who think a magazine needs to look like this to be a "real" magazine will stop calling us a "newsletter." We have most of the equipment to do this, but our skills to produce quality full-color are not yet there. Linda wanted to add four pages to the magazine. We can do this within our current mailing budget

and we usually run out of magazine pages before we run out of material to publish.

So, because the Editor always gets the last word anyway, you may now expect four additional pages in your magazine each month. This will allow us to do two things. First, it lets us make the type larger in the Breeders Directory listing. As the Breeders Directory added people, we made the type smaller and smaller to fit in our allocated space. It was getting so you needed a magnifying glass to read the email addresses. It's in larger type now as we've generously allowed it to slop over to another page. Second, more pages will allow us more space to put in more information, which is good for all of us.

So, Happy Anniversary to CashMirror Magazine! Maybe you'll get that nifty slick color cover at the next anniversary.

Correction!

This is Doug Maier, Breezy Meadow Cashmere Farm, Bellingham, Washington. He has a hairball—we mean he is *holding* a hairball. This hairball is *not* from one of his

goats (as we indicated in the last magazine). The hairball was retrieved by a Veterinarian from someone else's cashmere goat. The goat showed signs of bloat and after it died, the Veterinarian found it had been impacted by this hairball.

So...Doug doesn't have hairballs and neither do his goats.

He does, however, make shearing stands...see classified ad on page 30.

The Contest!

What Do *You* Do with All that Guard Hair?

What *do* you do with all that guard hair? Have any ideas? Put on your (cashmere) thinking caps and let us know what you come up with.

Contest deadline: December 31, 1998.

To enter: Send us your idea—mail, email, fax, whatever. You don't need to be a subscriber, or an adult to enter, or even own a goat. You may enter as many times with as many ideas as you wish. Each idea submitted will be considered a separate entry (even if frugally written on one piece of paper).

Judging: Winners will be chosen by a panel of judges, chosen by *CashMirror*, to include one cashmere goat person, one adult who is not a goat person and a child (probably a teenager). Don't worry; we will choose only highly-qualified and superbly personable judges. And we'll try to find a teenager without an attitude.

Winners: To be announced in January 1999 *CashMirror*.

Prizes

First prize: One gorgeous, white, lacy, hand-spun, hand-made crocheted cashmere scarf—see photo below.

Second Prize: One year subscription (or subscription extension) to *CashMirror*.

Third Prize: One 1999 *CashMirror* calendar.

Booby Prizes (2): One tasteless photo of Steve Hachenberger and one equally tasteless photo of Paul Johnson. See lurid details in last issue. Heh! They may not be art, but they would make excellent blackmail material.

Any Questions?: Ask us.



Here it is - the first prize!

Reflections

by Linda Fox

Pig Tales for Pam (Forbes)

In addition to our cashmere goats and a few other assorted farm animals, we have Mittens, a potbelly pig who lives under our porch. She has no practical purpose, such as eating kitchen garbage or raising pork chops; she's just a pet. One of those things that Paul had to have.

We bought Mittens when she was tiny. Unlike more pampered piglets, she never claimed a spot on our living room couch or ever set a hoof in the house. She started life in a poultry pen in the back yard in the city and has since survived a move to the country and another shorter move up the hill to the new house.

The Move

When we moved the half-mile to the new house, we left Mittens behind at first. We weren't quite sure how to help her make the transition. She had been up to the house site many times during the six months of construction, to check things out, and had been known to travel even further on the property within the confines of the perimeter fence in her younger and wilder days. Maybe after we moved, she'd eventually come up the hill to live where the action was.

A week after we moved, Mittens hadn't ventured up the hill even once. Each night, we faithfully fed her down by the old house and talked to her about the wisdom of moving closer to us. Mittens ate her frisbee-full of food, grunted her thanks and snuggled down in her straw-filled house by our old back door. She wasn't moving on her own.

After another week with no progress, and not having a better idea, we decided we just had to take the pig by the snout and move her. Just before dusk when Mittens would generally be retiring to her house for the evening, Paul chucked Mittens' food dish, water container and three-sided, wooden house in the truck and moved them to the new house. He put them under our new back porch, packed her wood house with fresh straw, filled her water container with new water and loaded up the frisbee with her favorite foods. Then he went back to retrieve his little girl.

Continued on next page

Reflections

Continued from previous page

He picked up the screaming 90-pound porker, not without a little grunting of his own, and dumped her in the truck. At the new house, he lugged the still-screaming Mittens out of the truck and shoved her under the porch. Mittens has her principles, but she's not about to let her principles get in the way of her food. She quickly ate her dish full of food and then headed back down the driveway towards the other house.

Paul chased her up the hill and shoved her back under the porch. He showed Mittens her old house in the corner filled with fresh straw. She grunted knowingly and began to rearrange the new straw to her liking. Looked like we had accomplished our task.

Mittens spent the night under the new porch, but when we got up the next morning, she was gone. We found her back down at the old house roaming her old daytime haunts. In hopes she would come back in the evening of her own accord, and also to prevent another pig-lifting experience, we decided to leave her alone for the day. That evening, she still hadn't come up the hill. We found her nestled down in the old pile of straw where her house used to be. Paul lugged her to the truck and brought her back to her new home. She ate her food and settled down in her house under the porch for the evening.

The next evening, we had to repeat the pig-moving procedure and after that, with the exception of one relapse a week later, Mittens seemed to understand that the underside of our new back porch was her home.

The Fair

One of the worst things that can happen to livestock-type pets of any variety is for their owners to attend a fair, where perfectly-maintained pets of the same species cause the owner to think that they should be better maintaining their own.

I saw some beautiful potbellied pigs at the Oregon State Fair. They were perfectly clean, well-dressed and shown off in little well-appointed stalls done up like little rooms. One pig lounged daintily on a braided rug placed in front of a tiny couch in a tiny living room with a tiny little book "The Three Little Pigs" in her tiny little hooves.

Another occupied a bedroom with a four-poster bed covered in a quilt. There were paintings on the walls.

Another pig was even dressed in cute little clothes and had a pen full of kid-type toys to entertain him. All of pigs were shiny-clean and had perfectly-trimmed hooves. They looked well-kept and happy—their owners obviously have no normal lives of their own.

Even though you are fully-aware that these fair exhibitors may have gone somewhat overboard with their pig care, when you get home, you can't help but compare those immaculate fair pigs with your own scruffy animal. That evening, as I studied Mittens' dusty coat, dirty nose and long toenails, she and I both knew there had to be a compromise.

The next day, I enlisted Paul's help, to restrain the screaming Mittens, while I trimmed her seriously overgrown toenails and bathed her. When Paul could hold her no longer, I chased Mittens with the hose, spraying off the remnants of the soap from her bath. She squealed, running down the road in the direction of the old house. Was she leaving us to go back to her old home?

Paul filled her dish with food, and not one to neglect the more important issues in life, Mittens circled back and returned to her food dish. She finished her food and waddled over to a sunny spot on the lawn, and settled down for a nap to dry off. Looks like there was no permanent psychological damage.

Now if I could just make this little CornHusker hat stay on her head and get this little "Three Little Pigs" book to stay between her smartly-trimmed toes...



Cheat Sheet for the Metric-Impaired (As an aid for the Feasibility Study)

1 kg (kilogram) = 2.2 lb.
 1 kg = 1,000 grams
 1 g (gram) = .032 oz. OR 1 oz. = 28.35 g
 1 ha (hectare) = 2.471 acres
 1 tonne (metric ton) = 1,000 kg = 2206.6 lb.

ECU = European Currency Unit = \$1.18

OR \$1.00 = .85 ECU's

Note: This is the conversion rate today—this currency floats with the dollar like any other.

Also note: Europe is at about the same latitude as the United States, so seasonal references should be similar to our own.



Notes

Cashmere Goat Feasibility Study

On the next page begins a lengthy paper entitled "A Study of the Feasibility of Cashmere Production in the European Union." This paper, authored by Dr. Angus Russel in Scotland, presents recently-concluded research about the feasibility of raising cashmere goats. He has graciously allowed us to reprint the paper for you.

Even though the paper is lengthy, it's not as lengthy as it should be. We have not printed the many valuable Tables and Figures contained in the original report. If we had, the report would have exceeded the length of this magazine (even with our four new pages). So, even though the omitted material is valuable, you won't find it here. You can, however, download the entire report, including the tables from the Macaulay Land Use Research Institute's internet site at: <http://www.mluri.sari.ac.uk/~mi361/feasibility/cashmere.htm>

Or, if you don't have an internet source and are desperate, contact CashMirror and we will get them for you.

This paper presents reports on the feasibility of different methods of developing a base cashmere herd (an elite herd) in European countries from which Regional herds would be established. The study analyzes the issues of increasing cashmere numbers through the transplant of imported embryos, importing cashmere goats and grading-up from other domestic goat breeds using imported cashmere bucks or semen.

The paper also pursues the feasibility of raising cashmere goats using different systems based on climate and other variables.

So, brew up a pot of tea, find a quiet spot, put on your reading glasses, and prepare to dig out some very useful information. For those of you not yet metric proficient, you'll want to review the chart above left before beginning the article.

Wooden Goats! (Christmas is Coming!)

Handmade and painted
wooden cashmere goats

Key holder (top)	\$ 6.95
Key chain	1.25
Napkin holder (right)	6.95
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A Study of the Feasibility of Cashmere Production In the European Union

By Angus Russel

Newton Bank, Frankscoft, Peebles EH45 9DX, UK

Summary

The European textile industry is experiencing increasing difficulty in securing supplies of raw cashmere from China. The technical feasibility of producing high quality cashmere in diverse climatic and topographic conditions within the EU has been amply demonstrated, and it is considered that cashmere produced in the EU would find a ready domestic market. Cashmere production constitutes an avenue for livestock diversification, well suited to marginal areas, and accords with many of the objectives of the EU's Common Agricultural Policy.

The establishment of new cashmere goat enterprises from the importation of embryos or animals, or by the grading-up of native goats using imported cashmere bucks or semen, is considered. Information is presented on the rate of growth and cashmere production, over ten years, of national herds based on a common starting point of a 250 doe herd, comprising imported animals or native goats used as recipients for imported embryos or for grading-up. The genetic potential for the production of high weights of quality cashmere is likely to be greater in herds established from embryos than in those based on animal imports. Although national herds comprising substantial numbers of breeding does are likely to be established more quickly from animal imports, the physical outputs and monetary income of individual cashmere enterprises are likely to be significantly greater if they are based on livestock established from embryos or by grading-up, than if they originate from imported live animals.

Five production systems, in which surplus stock are sold at different ages, are also considered, and estimates of the physical and monetary outputs from the sale of cashmere and animals slaughtered for meat and sold as breeding stock are used, with estimates of the variable costs attaching to each system, as the basis for gross margin analyses. In general, these indicate that systems in which the

surplus stock are retained for the longest periods are likely to be the most profitable. Estimates of gross margins range from about 45 ECU per breeding doe in a system in which surplus kids are sold at approximately six months of age and from which there are no sales of breeding stock, to almost 220 ECU per doe where the surplus juvenile stock are sold at approximately 18 months of age after the harvesting of a second cashmere fleece, and from which sales of breeding stock constitute a major source of income.

One of the production systems considered is based on castrates maintained on poorer land resources which are not well suited to breeding does. Estimated gross margins range from about 8 to 36 ECU per head, depending on the weight and quality of cashmere produced. Herds of cashmere goats, and particularly of castrates, can be used as grazing tools to bring about changes in botanical composition, including the control and eradication of undesirable plant species. It is estimated that the use of goats to eradicate gorse and bracken can result in benefits worth 29 to 36 ECU per goat per year; these figures comprise savings in herbicide costs and take into account the anticipated additional herbage dry matter production resulting from the eradication of the "weed" species. Grazing by goats can also be used to reduce the risk of fire in forested areas and of underutilised vegetation on hill and marginal land.

The economics of incorporating cashmere production as an output from dairy goat enterprises is also briefly considered.

Introduction

Cashmere is one of the most luxurious natural fibres and is increasingly sought after, particularly in the affluent western world where living standards and expectations continue to rise and where consumers are becoming ever more demanding as regards product quality.

The world's principal cashmere manufacturing industries are located in Europe - notably in the UK and Italy - and in the US. Virtually all the cashmere used by these countries is imported. The top quality cashmere (the fine 14-15 micron cashmere used to make knitted garments) comes from China (including Inner Mongolia) and (Outer) Mongolia, while the second quality cashmere (17-18 micron fibre, used principally for weaving cloth) is imported mainly from Iran and Afghanistan. China and Mongolia have traditionally dominated the market and currently produce annually an estimated 3500 tonnes of cashmere (i.e. of dehaired fibre, although not all of this production is dehaired in the country of origin). This represents approximately 85% of world production.

In recent years China has started to manufacture knitted garments and cloth from its own cashmere, often in joint ventures financed by partners in the US, Japan, and most recently, the UK. In 1995 it was estimated that China processed about 500 tonnes of dehaired cashmere. Of this, 400 tonnes were exported as finished goods and 100 tonnes were sold as garments within the country. This latter figure may appear small in relation to the total quantity of cashmere produced, but the Chinese economy is growing at an estimated 10% per annum and the domestic market for cashmere sweaters and cloth has been doubling each year for a number of years. This trend is expected to continue.

European textile manufacturers have been experiencing increasing difficulties in purchasing sufficient quantities of either raw or dehaired cashmere to meet their needs. Quality has also been a major problem, with suppliers adulterating cashmere with other fibres, such as yak and wool, to dilute the consignments of cashmere exported to Europe. One of the consequences of these problems is that the major UK cashmere processor, Dawson International, has recently relocated its dehairing plant from England to China, to be better able to secure supplies of raw

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EU Cashmere Production

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cashmere fibre and to have control over the quality of the dehaired product.

A recently concluded EC-funded research contract on cashmere production in the EU, including a study of its economic potential and competitiveness, concluded that, despite these recent developments in China, the future demand for cashmere is likely to continue to exceed available supplies, and that high quality cashmere produced in Europe would find a ready market.

The technical feasibility of producing high quality cashmere in diverse climatic and topographic conditions in the EU has been amply demonstrated by work initiated in the UK in the early 1980s, and more recently by studies in two contrasting areas of Spain. Cashmere has also been produced successfully in Italy. Cashmere production in these three member states is based on a new breed developed in the UK - the Scottish Cashmere goat. This breed has been selected from an exceptionally widely based genepool, comprising genetic material from Scotland, Iceland, Tasmania, New Zealand and Siberia.

Cashmere production accords with many of the objectives of the EU's Common Agricultural Policy in that:

- It constitutes an avenue for agricultural diversification, particularly in the hills and uplands where opportunities for livestock diversification are confined to ruminant species.
- It is well suited to the development of extensive systems of production and is particularly appropriate to the Less Favoured Areas.
- Cashmere is a high value non-food product.
- There is a strong internal market for the product.
- It has the potential to achieve substantial import savings.

Establishment of cashmere goat herds. In countries where there are no indigenous cashmere goats there are two main means of establishing new herds, viz. by

importing either live animals or frozen embryos. Both methods are considered below.

In the following analyses it is assumed that the importations are made from the UK. Exports of livestock are not permitted from China, and even if dispensation from this ban were granted, it is unlikely that the EU veterinary authorities would permit the importation of ruminant livestock from this source. The importation of goats to the EU from Australia and New Zealand is relatively straightforward, but adverse comments from European textile manufacturers regarding the quality of Australasian cashmere indicate that this option should not be considered.

In considering options for the establishment of new cashmere enterprises a common starting point of a herd of 250 breeding does has been adopted. The three options considered comprise:

- 250 native does, serving as recipients for 500 imported embryos.
- 250 imported breeding does and 7 bucks.
- 250 native does, used in a grading-up programme with imported bucks or semen.

In the first option the initial objective is to establish an Elite Herd of 250 breeding cashmere does plus followers. A breeding programme designed to improve the weight and quality of cashmere produced would be pursued within this herd, and animals not required as herd replacements would be sold to establish other herds. For the purposes of this study these other herds are considered collectively, and are termed the Regional Herd. The Elite Herd plus the Regional Herd constitute the National Herd.

In the second option the National Herd is based wholly on the natural increase of the imported animals.

In the third option the imported bucks or semen are used in a "grading-up" programme for crossing with indigenous dairy or meat goats. Additional bucks or semen are imported every second year over a period of 10 years to meet the

requirements of the expanding National Herd. Imported bucks are likely to be less expensive than semen and are therefore used as the basis of herd improvement in this particular option.

These options are not, of course, mutually exclusive. In practice the starting point for the establishment of a cashmere production industry could well involve an initial importation of both live animals and embryos. Likewise, there is no reason why an initial importation of live animals could not be supplemented with an importation of bucks or embryos at a later date. It is not possible within the scope of this study to consider all possible options, but sufficient information is presented to enable the likely outcome of different establishment strategies to be predicted and costed.

In considering the establishment of a National Herd the following assumptions have been made:

- The success rate for the transfer of frozen embryos is 65%.
- The annual kidding rate is 1.4 kids weaned per doe mated. This will vary according to the standard of nutrition and body condition (fatness) of the goats prior to mating. In the UK kidding rate varies between 1.0 and 1.8, depending on the quality and quantity of available grazing and on inputs of supplementary feeding.
- Does and bucks are both mated for the first time at 1.5 years of age. In conditions of good quality grazing, where high kid growth rates are achieved, it may be possible to mate animals for the first time at seven months old.
- To achieve a short generation interval and a rapid rate of genetic improvement in cashmere weight and quality, does are kept in the Elite Herd and in the "grading-up" National Herd for only three kid crops.
- To maximise the rate of expansion of the National Herd based on the importation of live animals, does are kept in this herd for six kid crops.
- The annual rate of mortality is 3%. In practice a lower level of mortality should be achieved without difficulty.

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EU Cashmere Production

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- The ratio of bucks to breeding does is 1:40.

Establishment from embryos

The structure and growth of an Elite Herd, established from the importation of 500 frozen embryos in Year 0, is shown in Table 1. The establishment starts with 250 native dairy or meat-breed does to act as recipients for the embryos, with the kids being born in Year 1. The full complement of 250 breeding cashmere does is achieved in Year 4. Thereafter, surplus yearling does, 3-crop adult does and a small number of yearling bucks are sold for breeding to establish the Regional Herd. Adult bucks and surplus juvenile bucks are sold for meat.

The establishment of the Regional Herd begins in only a very small way in Year 4 with the purchase of 4 yearling does and 1 yearling buck which are surplus to the requirements of the Elite Herd. All juvenile does are retained for breeding and adult does are sold for meat after their sixth kid crop. Bucks are recruited as yearlings from the Elite Herd and all juvenile bucks are sold for meat as yearlings. The growth and structure of the Regional Herd are shown in Table 2.

The National Herd based on the importation of embryos is made up of the Elite Herd plus the Regional Herd and its growth and structure are shown in Table 3.

Establishment from imported does and bucks. In the second option the National Herd is established from the importation of 250 3-crop does and 6 adult bucks. The objective is to build up the herd quickly, and all does are retained until they have produced their sixth kid crop. The growth and structure of the herd is shown in Table 4.

Establishment by the grading-up of native goats. The third option for the establishment of a National Herd is to import only bucks, and to use them to "grade-up" native dairy or meat goats by a system of repeated cross-breeding. In the example illustrated in Table 5, the starting point

is 250 native does and 7 imported cashmere bucks. As in the previous example, all female kids are retained within the National Herd. In this case, however, the original does are kept for only two kid crops and the subsequent cross-bred female progeny for only three kid crops, as it is desirable to maintain a short generation interval, particularly in the early years when the cashmere production of the crosses is low. It is also assumed that a sufficient number of new bucks are imported

every two years to maintain the programme of cross breeding. The growth in size of the National Herd established by this strategy is shown in Table 5.

Growth of National Herds established by different strategies. The growth in numbers over ten years of National Herds established from the importation of embryos and live animals, and by the grading-up of native does using imported bucks, is illustrated in Figure 1. It can be seen that, in the strategies considered above, the importation of live animals results in approximately three times as many breeding does in Year 10 as are achieved through the importation of embryos or by the grading-up of native does using imported bucks. This is mainly a consequence of the differing objectives of the different strategies. In the case of the live animal starting point, the objective is to increase the number of breeding does in the National Herd as quickly as possible; to achieve this end the does remain in the herd until they have produced their sixth kid crop. In the other strategies there is greater emphasis on breeding for individual animal performance; in the Elite Herd based on embryos and in the grading-up option the does are sold after producing only three kid crops to shorten the generation interval and increase the rate of genetic improvement in cashmere production.

Cashmere production

In estimating the cashmere production of the three National Herds established from different starting points it is recognised that, because no vendors will sell their best animals, the quantity and quality of the cashmere from imported live animals will be substantially less than those from

animals derived from frozen embryos collected from superior breeding stock.

The following assumptions have been made in estimating the cashmere production from the National Herds established from the three different strategies:

- The initial levels of cashmere production from animals imported as frozen embryos are 300 g from adults and 135 g (45%) from yearlings, and production will increase at a rate of 5% of the initial level per year as a result of the breeding programme pursued in the Elite Herd. (Note: A rate of increase in cashmere weight of 10% per year has been achieved in Scottish Cashmere goats over the past five years, but it is considered that this exceptionally high rate cannot be sustained indefinitely.)
- The quality (mean fibre diameter) of the cashmere from animals derived from embryos is 80% < 16.5 microns and 20% 16.5-18.5 microns.
- The initial levels of cashmere production from stock imported as live animals are 135 g from adults and 60 g (45%) from yearlings, and production will increase at a rate of 3% of the initial level of production per year as a result of selective breeding.
- The quality (mean fibre diameter) of the cashmere from stock imported as live animals is 50% < 16.5 microns and 50% 16.5-18.5 microns.
- The weight and quality of the cashmere produced by the bucks used in the grading-up strategy are comparable to that of the animals derived from the importation of embryos, and production of the imported bucks increases at a rate of 5% of the initial level of production per year.
- Equal proportions of white, off-white and coloured cashmere will be produced in all herds.
- Cashmere prices are as noted in Table 6 (based on the average prices paid to farmers by the Scottish Cashmere Producers' Association over the last three years).

The estimated weights and income from the sale of cashmere from the three

Continued on next page

EU Cashmere Production

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National Herds over Years 1 to 10 are presented in Table 7 and illustrated in Figures 2 and 3.

Figures 4 and 5 illustrate respectively the estimated weights and values of cashmere produced per breeding doe in Year 10 in the National Herds established by the three different strategies. These values are calculated as the total weight of cashmere produced in Year 10 divided by the number of does present at the time of harvesting (i.e. the number of does mated in the previous year and after allowing for the standard 3% mortality).

The data in Figure 4 show that the weight of cashmere produced per breeding doe in Year 10 in the herd established from embryos is 63% greater than that in the herd based on the importation of live animals

and (Figure 5) has a 78% higher value. The corresponding figures for per doe cashmere weight and value in the herd established by the grading-up of native goats, relative to those in the herd based on live animals, are 11% and 18%.

The estimates presented above indicate that, on a national basis, the greatest weight and value of cashmere is likely to be produced by the importation of live animals, and by pursuing a policy of increasing stock numbers rapidly by retaining does in the herd for six kid crops. Although this strategy may benefit the country's textile industry or exports to a greater degree than the other strategies of establishing a national herd of cashmere goats, it is less likely to be of benefit to individual goat farmers. The National Herd in any country will comprise a number of units, each of a finite size and a limited stock carrying capacity. The physical outputs and monetary income of individual cashmere production enterprises are dependent to a large extent on levels of individual animal performance and are likely to be greater if these enterprises are based on a national herd established from embryos or by grading-up, than on one based on the importation of live animals.

Meat production

In the preceding section on cashmere fibre production it was assumed, for the sake of simplicity, that all kids were kept in the herd until after their first fibre harvest at approximately 10-12 months of age. This may not always be the most profitable strategy. In many of the Mediterranean countries, for example, and notably in Greece, Italy and Spain, the meat from young kids, slaughtered before weaning, is regarded as a delicacy and commands a high price. In some cases, e.g. in herds established from the importation of live animals producing only moderate weights of cashmere, it may be more profitable to sell the buck kids and surplus doe kids for meat at a high price before weaning, and to forego the income from cashmere. In other cases, e.g. in herds producing greater quantities of high quality cashmere, it may be more profitable to keep the kids to an older age and heavier weight, foregoing the premium for milk-fed kid meat and taking a harvest of cashmere early the following year. The lower price per kg carcass weight might be compensated, at least to some extent, by the heavier ultimate carcass weight. One of the disadvantages of selling the male kids at a very early age is that it virtually precludes the possibility of breeding replacement bucks within the system; it is not possible to identify the individuals with superior fibre-producing potential until about five months of age or older. Where kids are sold at a very young age it would be necessary to purchase bucks from outside the system.

In other situations, where there is no specialised meat market for very young kids, the surplus young stock would not normally be sold for meat until after their first fibre harvest. Where the climatic conditions dictate that at least this youngest age-group are in-wintered there are several options for the sale of surplus stock for meat. If no winter housing is available, the male and surplus female kids could be sold at the end of the grazing season, at 6-8 months of age. In such a system it could be worthwhile shearing the animals prior to slaughter. The evidence available to date indicates that there is

little increase in the weight of cashmere produced by this age-group between October and the end of the year, and it is reasonable to assume that shearing in the autumn would yield at least 75% of the weight of cashmere if it were harvested in late winter or early spring.

Where kids are housed over winter their fibre is normally harvested at 10-12 months of age, by shearing in late January or early February, or by combing in late February or during March. In this situation there is again a choice of when to sell the surplus stock for meat. They could be sold immediately after the fibre has been harvested, thereby avoiding any further winter feeding costs, or they could be kept as yearlings for a further grazing season. This latter option would allow a substantial increase in live weight, and consequently in ultimate carcass weight, at minimal cost. In this option the yearlings could be shorn prior to slaughter in the autumn at approximately 18 months of age, thus yielding a full fleece and, say, 50% of an adult fleece within a period of 6-8 months.

In situations where one of the primary objectives of farming cashmere goats is to control biomass (e.g. to reduce fire hazards) or to bring about changes in vegetation (e.g. to control or eradicate certain undesirable plant species) herds comprising only males (in most cases castrates) may be more appropriate than herds of breeding does and their followers. Herds of castrates may also be well suited to some of the poorest land resources where the level of nutrition afforded by the available grazing is insufficient, even with some supplementary feeding, to meet the needs of does during pregnancy and lactation. Such castrate herds would be made up of perhaps five or six age-groups, with replacements being purchased as yearlings, and the oldest age-group being sold each year for meat.

Five production systems, in which surplus stock are sold for meat at different ages, are considered below. The names or titles attached to these systems are used only as a matter of convenience and, where

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they have a geographical connotation, are not intended to imply that they are the only system appropriate to that area, or that the system cannot be applied in other regions. The systems are:

1. The Mediterranean system, in which all male and surplus female kids are sold prior to weaning, and cast-for-age adult stock are sold later in the year.

2. The Alpine system, in which the climate dictates that all stock are in-wintered, but where there is sufficient housing for only the breeding stock and herd replacements. In this system the surplus kids are sold at the end of the grazing season at approximately 6-8 months of age at the same time as the cast-for-age adults.

3. The Winter-housing system, in which the juvenile stock, but not necessarily the adults, are housed over winter and sold following their first cashmere harvest at 10-12 months of age. Cast-for-age adult stock are sold later in the year.

4. The Eighteen Month system, in which the surplus juveniles are sold at approximately 18 months of age. Fibre harvests are taken at 10-12 months of age and again prior to sale for meat. Cast-for-age adult stock are sold at about the same time.

5. The Castrate system, in which no breeding stock are kept and which comprises six regular ages of castrate goats from which cashmere is harvested every spring. Replacement castrates are purchased at approximately 18 months of age from herds operating the Eighteen Month system, and the oldest age-group is sold for meat each year.

The following assumption have been made in calculating the output and income generated from the sale of animals for meat in the three National Herds established by different strategies:

- All female kids and yearlings are retained for breeding to expand the National Herds and consequently there is no income from the sale of this class of animals for meat.
- In the Mediterranean system the value of the milk-fed kid carcass is 45 ECU (the

mean of the values quoted in Greece, Italy and Spain).

- In the Alpine system, in which kids are sold at 6-8 months of age, the average carcass weight is approximately 9 kg, valued at 4.5 ECU per kg, giving a value of 40 ECU per carcass.

- In the Winter-housing system, in which the kids are sold at 10-12 months of age, the average carcass weight is 12 kg, valued at 4.5 ECU per kg, giving a value of 54 ECU per carcass.

- In the Eighteen Month system the average carcass weight of the yearlings is 17 kg, valued at 4.0 ECU per kg, giving a value of 68 ECU per carcass.

- In the above four systems the average carcass weight of cast-for-age does is 20 kg, valued at 2.0 ECU per kg, giving a value of 40 ECU per carcass.

- In the above four systems the average carcass weight of adult bucks is 25 kg, valued at 1.6 ECU per kg, giving a value of 40 ECU per carcass.

- In each National Herd the Castrate system is an alternative to the selling of juvenile males for meat; instead, they are retained in herds comprising six age-groups. The number of castrates available for sale in Year 10 is therefore taken as the number of juvenile males in that herd in Year 5, adjusted for an annual mortality rate of 1%.

- The average carcass weight of the oldest castrate age group is 25 kg, valued at 1.6 kg per kg, giving a value of 40 ECU per carcass.

The numbers in each class of animal sold for meat in Year 10 from each of the National Herds established by different strategies, and the estimated income from these sales, are presented for each systems, in Table 8. The comparisons of income from meat sales between National Herds reflect the effect of animal numbers arising from the different establishment strategies (see Figure 6).

Comparisons between systems of management within the National Herds are also illustrated in Figure 6. These show that the income from sales of animals for meat is greater in the Mediterranean system, in which milk-fed kids are sold at a very young age, than in the Alpine system in which the kids are retained for longer

and have a heavier carcass weight. The income in the Winter-housing system, in which the juvenile males are sold immediately after their first fibre harvest, is higher than in either the Mediterranean or Alpine systems, but the maximum income is achieved in the Eighteen Month system, despite a lower price per kg carcass weight. In each National Herd the income from sales of animals for meat is least in the Castrate system, in which only approximately one sixth of the animals are sold each year.

As argued above in relation to income from the sale of cashmere, the return per breeding doe (or in the case of the Castrate system, per animal in the herd) is more important from the perspective of the individual farmer than the value of sales from the National Herd. The data presented in Figure 7 show that, in comparisons between strategies of establishment, the Year 10 income per breeding doe from the sale of animals for meat is greatest in the National Herd based on the import of live animals.

Comparisons between the different management systems show that the greatest return is achieved from the Eighteen Month system, in which the additional carcass weight gained during the second grazing season more than compensates for the lower price per kg. In general it can be seen that, with the exception of the Castrate system, the income tends to increase with carcass weight; there is a slight advantage in the Mediterranean system of selling milk-fed kids for premium, rather than keeping them to 6-8 months of age, as in the Alpine system, but the margin is small. The very poor return shown for the Castrate system is unduly low, in that the number of animals in the oldest age-group (which entered the herd as yearlings in Year 5) is substantially less than one sixth of a regular-aged herd. In such a herd the income would be 6.5 ECU per head.

Sale of breeding stock

In the three National Herds considered above it is assumed that all female stock, other than cast-for-age does, are

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retained within the herd to achieve the desired rapid increase in numbers. With the exception of the Grading-up National Herd, in which replacement bucks are imported, breeding males come from within the herd and those surplus to requirements are sold for meat. Thus, no breeding stock are sold outwith the National Herd. In practice, however, the National Herds are made up of individual enterprises, some of which will specialise in breeding either or both yearling does and bucks for sale as breeding stock. It is therefore reasonable to consider the income generated from sales of breeding stock on the basis of a herd of 250 breeding does. The calculation of income from this source contains the following assumptions:

- Does are retained in the herd for six kid crops.
- The average kidding rate is 1.4 kids per doe.
- The average mortality rate is 3%.
- 45 yearling does are retained as herd replacements.
- 125 yearling does are sold for breeding.
- 17 (10%) of the yearling bucks are sold for breeding.
- In Year 10 the value of breeding stock sold from the National Herds established from live animal imports has fallen to 50% of that of imported live animals.
- Stock from the National Herds established from embryos commands a premium of 50%.
- The values of breeding stock are as presented in Table 9.

Estimates of the income from the sale of breeding stock from the 250-doe herd are presented in Table 10 and illustrated on a per doe basis in Figure 8.

Gross margin analyses

The gross margin analyses are all based on estimates of output and variable costs in Year 10.

In the analyses, output is calculated as the income from the sale of cashmere from adult and juvenile stock, from adult and juvenile animals sold for slaughter for

meat and, where appropriate, from the sale of male and female breeding stock, less the cost of replacement males (either breeding bucks or, in the case of the Castrate system, yearling castrates). The values used in calculating these outputs are those adopted in the sections on cashmere production, meat production and the sale of breeding stock.

In calculating variable costs, concentrate feeds are charged at 225 ECU per tonne. Hay is charged at 150 ECU per forage ha and grazing at 125 ECU per forage ha. Miscellaneous costs include commission on the marketing and grading of the cashmere, and therefore vary according to the level of fibre production, and the costs of haulage and marketing of stock sold for slaughter and for breeding.

All cashmere goat enterprises produce cashmere and sell surplus stock for slaughter for meat, but only some will specialise in the selling of breeding stock. Estimates of gross margins for the five production systems and for each of the three establishment strategies have therefore been calculated with and without the sale of breeding stock. It has been assumed that where breeding stock are produced for sale, these animals are marketed as yearlings. As shown in the following tables, the sale of breeding stock affects not only the number of animals available for slaughter for meat, but has implications for the number of animals kept over winter and from which cashmere is harvested.

The sensitivity analyses show the effects on estimated gross margins of changes (positive or negative) of 10%, 25% and 33% in cashmere, meat and breeding stock prices and in kidding rate. (Note: A change of 10% in kidding rate is defined as a change from 140% to either 130% or 150%, not as 10% of 140%.) The effects of greater or lesser changes in product prices and kidding rate are readily calculated from the information presented. Changes in breeding stock prices have effects on the cost of replacement bucks as well as on the income from breeding stock sales. In the castrate systems no changes in the cost of replacements are shown against stock replacements, as these will

be affected by meat prices rather than the price of breeding stock. Changes in kidding rate affect the numbers sold for both breeding and for meat.

Estimates of gross margins and effects of changes in product prices and kidding rate from enterprises not selling breeding stock are presented in Tables 11, 12 and 13, and are illustrated in Figure 9. Corresponding estimates for enterprises selling breeding stock are contained in Tables 14, 15 and 16 and are illustrated in Figure 10.

The gross margin analyses show clearly the advantage of National Herds established from the importation of embryos as opposed to live animals. This advantage is attributable in part to the higher returns

accruing from their greater weights of higher quality cashmere, and in part to the premium which the superior breeding stock commands. The gross margins from herds established by the grading-up of native goats are also consistently higher than those of herds based on imported live animals, although the advantage is small. Overall, the gross margins from herds established from embryos, and from which no breeding stock are sold, are 76% greater than those established from live animals and 57% greater than those established by grading-up; the corresponding advantages in gross margins from herds selling breeding stock are 79% and 67%.

Another major feature of the analyses is the substantially greater gross margins achieved in herds selling breeding stock. This advantage varies from 76% in herds established by grading-up to 90% in herds established from embryos. In most livestock systems the sale of breeding stock is generally confined to a minority of enterprises, but in an expanding new industry, such as cashmere production, the opportunities to sell quality breeding stock of both sexes are greater and, as the analyses indicate, can bring substantial rewards.

Comparisons of the five management

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systems considered indicate that, in general, gross margins increase with the age at which the surplus juvenile stock are sold. The exception to this generalisation is the Alpine system in which, despite higher outputs, the gross margins are, in five of the six examples presented, lower than in the corresponding Mediterranean system. In the Mediterranean system the higher price achieved in the speciality market for the very young kid meat is more than offset by the loss of income from cashmere, and the total value of the outputs is less than in the Alpine system. The higher variable costs of the latter system, however, result in lower gross margins, except in the case of herds established from embryos and from which no breeding stock are sold.

The values of the outputs from the Winter-housing and Eighteen Month systems are substantially higher than those from the systems in which surplus stock are sold at earlier ages. This arises in part from the greater weights of cashmere harvested - a full juvenile fleece plus half an adult fleece in the case of the Eighteen Month system - and in part from the heavier weights of the prime juvenile carcasses. In all cases the Eighteen Month system yields the highest gross margins.

The gross margins from the castrate system are, as would be expected, substantially lower than those from systems based on breeding does. Comparisons of the gross margins from castrate herds originating from different establishment strategies illustrate the importance of ensuring that such herds comprise stock producing high levels of high quality cashmere. The estimated gross margin from herds originating from stock based on embryos is more than four times that from herds established from live animal imports, and indeed is less than 30% lower than that of a herd of breeding does in a Mediterranean system from which no breeding stock are sold.

Direct comparisons of breeding and non-breeding systems are, however, scarcely valid, as castrate goats are generally kept

only on the poorer land resources which cannot support the higher nutritional requirements of pregnant and lactating does. In some cases castrate herds are maintained not only for their fibre and meat outputs, but as tools to control biomass or bring about certain desirable vegetational changes.

The sensitivity analyses included in Tables 11 - 16 indicate the effects on estimated gross margins of changes, both positive and negative, in the prices of cashmere, animals sold for meat and as breeding stock, and in kidding rate.

These analyses indicate that in herds established from embryos and not selling breeding stock, changes in cashmere prices have the greatest effects on gross margins in most management systems. However, in herds with lower levels of fibre production, i.e. those established from live animals and by grading-up, changes in goatmeat prices have a greater effect than changes in cashmere prices.

In those herds selling breeding stock, changes in kidding rate, which determine the numbers of animals available for sale at high prices for breeding, have greater effects on gross margins than changes in the price of either cashmere or animals slaughtered for meat.

The largest changes in gross margins as a result of changing product prices and kidding rate are observed in the Eighteen Month system, which has the highest level of cashmere production and the highest carcass weights.

Support payments

The above gross margin analyses do not include any subsidy payments. Levels of support vary widely between countries and between areas within countries, and are not applied uniformly throughout the EU (although in most cases the major part of the support is paid by the European Commission) or to any of the particular systems considered in this study.

In those countries and regions within countries where goats are recognised as eligible for support under the Sheep and Goat Meat Regime, the main subsidy is

paid as an Annual Premium. The level of this support has varied widely in recent years, but is currently valued at 12 ECU per doe. In addition, goat enterprises in the Less Favoured Areas of those regions paying Annual Premiums on goats are eligible for a supplement currently worth 4.6 ECU per doe.

Hill Livestock Compensatory Allowances are also paid on goats in certain countries, including some, but not all, of those in which goats are eligible for Annual Premium payments. The level of these HLCA payments varies between regions.

It is not possible in this study to consider in detail the effects of Annual Premium payments, Less Favoured Area supplements and Hill Livestock Compensatory Allowances on the gross margins of cashmere goat enterprises operating under different management systems in the many regions of all the EU member states. It is, however, a simple matter to add subsidy payments, which will range from 0 to about 3,200 ECU per 100 does depending on the location of the enterprise, to the gross margin estimates presented above.

Value of goat grazing

The grazing preferences of goats are very different from those of cattle and sheep. Research results from New Zealand, the UK, and more recently from Spain, have demonstrated that the grazing by goats of

certain plant communities can bring about significant desirable changes in botanical composition, which can lead to improvements in the nutrition and hence the productivity of other ruminant livestock, as well as that of the goats themselves.

It has been amply demonstrated that goats can be used to control and, if desired, eradicate what are generally regarded as undesirable plant species, such as rushes (*Juncus* spp.) gorse (*Ulex* spp.), bracken (*Pteris aquilina*), thistles (*Cardus* spp.) nettles (*Urtica urens*) blackberry or bramble (*Rubus fruticosus*), docks (*Rumex* spp.) and many other species. The control of such species by grazing is more

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environmentally and ecologically acceptable than the use of expensive herbicides, which are frequently hazardous to those using them and to wildlife in the area.

The use of the goat's grazing preferences to bring about changes in botanical composition of sown or indigenous pastures has a significant monetary value which should be quantified and considered as an output in calculating the gross margin of a cashmere goat enterprise. The degree of infestation of pastures with the plant species mentioned above varies widely from country to country and between regions within countries, and it is therefore difficult to attach precise values to the benefits of improvements brought about by goat grazing. The following figures are intended only as an approximate guide to likely values.

Infestations of rushes in sown pasture can be controlled by grazing with goats, and can be eradicated by mob stocking at a rate of about 30 goats per ha for three months per year for two to three years. Severe defoliation in the late summer is likely to be most effective. Eradication using herbicides costs about 135 ECU per ha, and it can thus be calculated that the value of achieving the same end result by grazing is some 2 ECU per goat per year.

Gorse can be controlled and effectively eradicated over a period of three to four years by stocking the area with goats at a rate of about five adults per ha. The green shoots of gorse have a relatively high nutritive value, particularly in winter, and the stocking can be with either castrates or breeding does and juveniles. The cost of eradicating gorse with the recommended herbicide is of the order of 180 ECU per ha. If this cost is apportioned over, say, four years to goats stocked at five per ha, this can be regarded as equivalent to an output of 9 ECU per goat per year. It is reasonable to assume an increase in herbage dry matter production, as a consequence of the gorse eradication, of some 1500 kg per ha. This has a value of approximately 0.15 ECU per kg, and assuming an efficiency of utilisation

of 45%, is equivalent to more than 100 ECU per ha per year, or some 20 ECU per goat per year. Adding this to the above 9 ECU per goat per year gives a total annual value of some 29 ECU per goat.

Goats have also been shown to have the ability to eradicate bracken. This plant species can be toxic and care should be taken to avoid excessive grazing pressures, particularly with lactating does. A stocking rate of about five goats per ha over a period of four to five years has again been shown to provide effective control. The cost of bracken eradication with herbicides is similar to that for gorse at, say 180 ECU per ha. As bracken is generally found on somewhat richer soil types, an increase in herbage dry matter production of 2000 kg per ha is assumed. Again assuming a value of 0.15 ECU per kg herbage dry matter and an efficiency of utilisation of 45%, it can be calculated that this is equivalent to some 36 ECU per goat per year.

Fires in forests and of undergrazed vegetation on hill and marginal land are a serious problem, not only in the drier Mediterranean countries, but throughout the EU. The costs of such fires are substantial, in terms of their control, the biomass destroyed and the ecological damage which they cause. In many cases the grazing attributes of goats could be harnessed to reduce fire hazard. For example, herds of castrate cashmere goats could be used profitably to graze hill pastures from which sheep and dairy goats have been removed because of the marginal economics of milk production enterprise from these poorer land resources. Similarly, the grazing by goats of fire breaks in and around forests could do much to lessen the risk and severity of forest fires.

The gross margin analyses presented above indicate that cashmere goat enterprises based on castrate herds could be potentially profitable, particularly if these herds comprise animals producing heavier weights of high quality cashmere. Where such herds are also used to control biomass, either by eradicating undesirable plant species or to reduce a potential fire hazard, the economics of cashmere production from castrate goats are even more attractive. For example, adding a

value of, say, 30 ECU per goat used to control gorse or bracken to the output from a castrate herd based on embryos (see Table 11) gives a gross margin of some 66 ECU per goat from an enterprise suited to marginal land resources. Such enterprises merit serious consideration.

The control of undesirable plant species by goat grazing can be used with advantage to benefit other ruminant species, and particularly sheep and cattle. The grazing preferences of goats can also be used to benefit other livestock by other means. In mixed swards, goats tend to discriminate against clover, particularly in its vegetative growth stage, and it has been shown that, as a consequence of higher proportions of clover, weaned lambs grazing swards of ryegrass and white clover previously grazed by goats gain weight more rapidly than those grazing swards previously grazed by sheep.

The goat's dietary preference for grass seedheads also affords opportunities for enhanced performance from sheep and cattle in mixed grazing systems with goats.

Cashmere production from the dairy herd. Dairy goats are double-coated and produce small quantities of fine fibre in their undercoat. Although these fibres fall within the range of cashmere as regards diameter, they are generally very short and present in insufficient quantity to make them worthwhile harvesting. The energy and protein requirements for fibre production are small, relative to those of milk production, and there would appear to be possibilities of combining the production of milk and cashmere within one genotype without making excessive physiological demands on the animal. The limited information available on the production and composition of milk from cashmere-type goats indicates that, in the suckling situation, they produce comparable quantities of milk fat, but less milk protein, than dairy goats.

The development of a triple-purpose goat, producing significant quantities of milk and cashmere, as well as meat, would

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arguably be best achieved by simultaneous selection for fibre and milk within a crossbred population. In a recent study of the economics of fibre and meat production in Norwegian dairy goats it is argued that the incorporation of increased fibre production from dairy goats would help to reduce the present surplus of goat milk production. The economics of a variety of management systems, involving kidding at different seasons and retaining the progeny for varying lengths of time, are considered, and it is concluded that cashmere production from dairy goat herds could be practicable and has the potential to improve the profitability of dairy goat enterprises by more than 20%.

Conclusions

Cashmere production has been demonstrated to be technically feasible in a wide variety of climatic and topographic conditions in different regions of the UK, Spain and Italy, and is likely to be practicable in most, if not all, EU member states.

There is a strong internal market, particularly in the UK and Italy, for high quality cashmere fibre produced in the EU.

The results of this study indicate that cashmere production is likely to be economically viable and that it constitutes a potentially valuable avenue for livestock diversification. It is well suited to a wide range of management systems, including extensive and semi-extensive systems of production on the more marginal land resources of the Less Favoured Areas. It has the potential to make a significant contribution to the economy of rural areas by providing a less demanding, and therefore more attractive, system of management than sheep or goat milk production enterprises.

In establishing cashmere production enterprises in regions which currently have no indigenous cashmere goats, it is important to acquire stock with a genetic potential for the production of high weights of quality cashmere. This will ensure high returns not only from

the sale of cashmere, but also from the premium which superior breeding stock are likely to command. Superior stock are more likely to be based on embryos than live animals, as breeders are generally unwilling to sell their best breeding does, although they are prepared to use them as donors of embryos.

Cashmere production enterprises would be expected to have a positive environmental impact through the grazing of currently underutilised vegetation, thereby enhancing landscape and reducing the risk of grass and forest fires. The use of goats to control undesirable plant species is more ecologically acceptable than the use of selective herbicides. Their discriminative grazing can also be harnessed to improve the nutrition of other species of ruminant livestock in complementary grazing systems.

On the poorer land resources which cannot support herds of breeding does, an extensive, low-cost management system based on adult castrates offers a potentially profitable use of such areas.

It is concluded that cashmere production would constitute a viable alternative to traditional forms of livestock farming throughout the EU, and would also bring substantial benefits to the European textile industry.

Acknowledgments

The writer is indebted to many people for readily providing much of the basic information used in this study. Thanks are due in particular to Dr Lars Olav Eik (Agricultural University of Norway), Dr Margaret Merchant, Dr John Milne, Mr Harry Sangster and Dr Iain Wright (Macauley Land Use Research Institute), Dr Koldo Osoro (Centro de Investigacion Aplicada y Tecnologia Agroalimentaria, Asturias, Spain), Dr Roberto Rubino and Dr Lucia Sepe (Istituto Sperimentale per la Zootecnia, Potenza, Italy) and Professor George Zervas (Agricultural University of Athens, Greece).

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Another Exciting Product From Cashmere Goats...



Rut for Men (Real Men!)

A special new soap—specially prepared by Hachenberger Enterprises in Hamilton, Montana. A (very) aromatic green soap contained in a cleverly designed box. And this isn't just any soap!

Besides its obvious deodorant properties (We had to put it in a zip-lock bag to be able to breathe in the office!), it also contains little short black prickly things—Could it possibly be *guard hair*? *Buck guard hair*???

The soap is designed to provide a gentle scrubbing action as well as leaving you with that special buck scent which seems to drive the does wild this time of year...

We're sad to say that this new product is not yet for sale. We have only a "Beta Bar" sent to us for our private testing and comment. So far our testing and comments have run as follows:

"OK. Go test it and let me know what you think."

"I'm not trying it."

"You have to test it; you're the man!"

"I'm not going to shower with buck hair soap!"

"You have to! It's your duty as the Publisher!"

"No I don't. That wasn't in our agreement. This whole thing is really stupid!"

"No it's not; you'll hurt Steve's feelings! Just get in the shower and I'll toss you the bar."

"No way! It stinks!"

"Come on, use just a little—just to say you tried it."

"No! I'm going out to feed the goats."

"What are we going to tell Steve?"

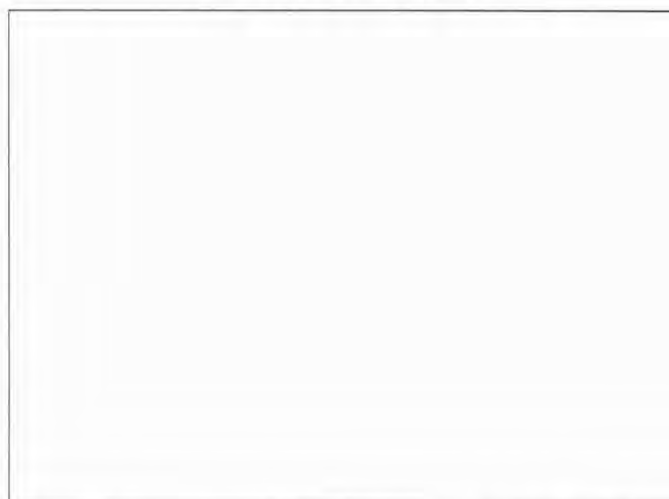
"I don't care. I'm NOT going to use it!"

"So what do we do now?"

"Heh! Maybe we can try it on Mickey..."



A low-tech hay feeder at Kellers Kritters.
Photo by Michael Keller.



Brookfield Farm's Bracket, playing in the hayloft. She climbed up on the ladder! Photo by Ian Balsillie.



Dancing Goats at Quinta San Pedro, Salem, Oregon. Or is the one just getting more leverage to flatten the other three?

The Virginia State Fair — ECA Cashmere Events

Photographs by Linda Cortright

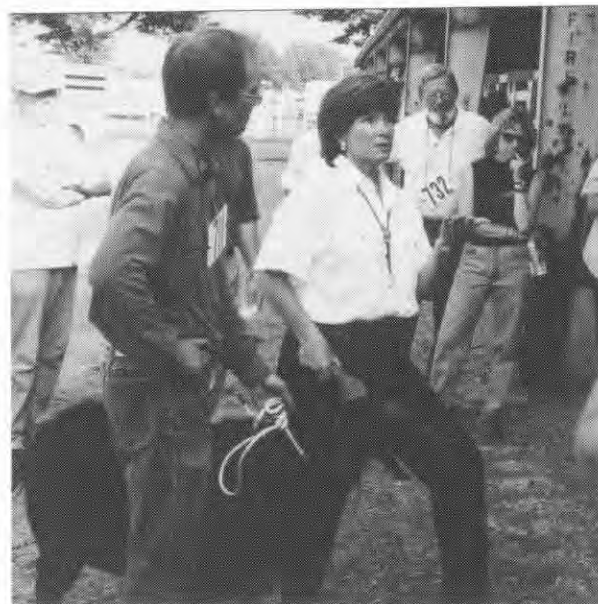


How do you organize a goat show?

First you get the people to line up Then you get the goats to line up.



**Right:
Wes Ackley and
Bronwyn
Schuetze,
Cashmere Goat
Show and Fleece
Competition
Judge.**



Above: Bronwyn Schuetze intent on judging the pile of cashmere fleeces carefully organized by Christy Proost, left.

Right: Wes Ackley and ECA people with papers— Looks like it may be an ECA meeting.

Wes

Eastern Cashmere Association 1998 Fleece & Goat Competitions

*Richmond, Virginia
September 29-30, 1998*

Fleece Competition Results

Judge: Bron Schuetze
Number of entries: 163

GRAND CHAMPION FLEECE - BLF Pollux, Yvonne Taylor
RESERVE CHAMPION FLEECE - Liberty Hope, C & M Nielsen

First place only listed below. The number listed after the category name is the number of entries for the category.

SHORN FLEECES (121 entries)

Doe Kid Fleeces (33) - Liberty Hope, C & M Nielsen
Doe 2nd and 3rd Fleeces (35) - BPC Feather, W & M Ackley
Doe 4th Fleece or Before (17) - CashMears Delphi, W & M Ackley
Buck Kid Fleeces (17) - HKL Salem, K & C Heeren
Buck 2nd and 3rd Fleeces (16) - HKL Quincey, K & C Heeren
Buck 4th Fleeces or Before (3) - SF Beethoven, R & A Repaske

COMBED FLEECES (42 entries)

Doe Kid Fleeces (8) - Mattie Lee, Ann Wood
Doe 2nd and 3rd Fleeces (12) - BLF Black Opal, Yvonne Taylor
Doe 4th and Before (7) - Snowy River Karma, Christy Proost
Buck Kid Fleeces (5) - BLF Bruse, Yvonne Taylor
Buck 2nd and 3rd Fleeces (6) - BLF Pollux, Yvonne Taylor
Buck 4th and Before (1) - Chance Wayne, Jeanne Austin
Wethers (3 combed entries):
Kid - Bob's Boy, Ann Wood
2nd/3rd Fleece - BBS Michael, Jeanne Austin
4th Fleece - Snowy River Joker, Christy Proost

Cashmere Goat Show Results

Judge: Bron Schuetze

GRAND CHAMPION DOE - BBS Elvira, Jeanne Austin
RESERVE CHAMPION DOE - HPF Carrie, Pam Haendle
GRAND CHAMPION BUCK - BPC Fortune, W & M Ackley
RESERVE CHAMPION BUCK - BPC Emmet, W & M Ackley

First place winners only are listed. The number listed after the category name is the number of entries for the category

Does

Milk Tooth Does ('98 DOB) (10) -
RDK Quite a Dream, C & L Raney

Two-Tooth Does (1997 DOB) (11) - HPF Carrie, Pam Haendle
Four-Tooth Does (1996 DOB) (7) - BBS Ruth, Jeanne Austin
Six-Tooth Does (1995 DOB) (1) - MLF Samantha., C & L Raney
Full Mouth Does ('94 & Before) (4) - BBS Elvira, Jeanne Austin

Wethers, All Ages (4 entries)

Kid - LFC Bartholomew, Pam Haendle
2nd/3rd Fleece - BLF Jingles, Linda Cortright
4th fleece & before - Snowy River Joker, Christy Proost

Bucks

Milk Tooth Bucks (1998 DOB) (5) - RDK BB/B, C & L Raney
Two-Tooth Bucks (1997 DOB) (4) - BPC Gaylord, W & M Ackley
Four-Tooth Bucks (1996 DOB) (1) - BPC Fortune, W & M Ackley
Six-Tooth Bucks (1995 DOB) (3) - BPC Emmet, W & M Ackley



Wes Ackley, Bessey Place Cashmere, with Grand Champion Buck, BPC Fortune. Photo by Linda Cortright.

Goat Meat Recipes!

The following three recipes are reprinted from a Texas Agricultural Extension Service publication called "South Texas Recipes."

Cabrito Chops Jalapeno

Makes 4 servings

4 goat shoulders, 1 inch thick, bone or blade
1 tsp salt
1/2 tsp ground pepper
1/2 tsp ground cinamon

1 8-oz can crushed pineapple in its own juice
1/2 c jalapeno jelly (may substitute apricot jam)
1/4 c fresh lemon juice
1 T prepared mustard

Sprinkle goat shoulders with a mixture of salt, pepper and cinnamon. Combine remaining ingredients in small saucepan. Bring to a boil, stirring until jelly is melted. Broil or grill chops 4 inches from heat source, 8-10 minutes.

Cabrito Con Fideo

Makes 8 servings

1-1/2 lb cabrito, cubed
2 T vegetable oil
1 small onion, diced
1 green bell pepper, diced
1 T cumin seed
1/2 T whole black pepper
3 small garlic cloves
5 to 6 oz fideo (vermicelli)
2 fresh tomatoes, diced

Cut cabrito into bite-sized cubes and brown in skillet with oil until well done (20 to 30 minutes). Combine onion and bell pepper and set aside. In blender, grind cumin seed, black pepper and garlic cloves until pulverized. Combine spices with cabrito and vegetables; mix well. Add fideo (vermicelli) and enough water to cover entire mixture and then add tomatoes. Cover and bring to a slow simmer. Cook approximately 15 minutes or until fideo is tender. Do not stir until ready to serve.

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James Barton, Bar Y Ranch, Sonora, Texas
with his 5-goat barbecue. Photograph by Linda Cortright.

Stir-Fry Chevon with Green Onion

Makes 5 servings

2/3 lb chevon (loin or leg), cut into thin slices
2 T sesame or safflower oil
12 green onion, cut into 1-inch lengths

Marinade #1

1/2 t garlic powder
2 T soy sauce
1/2 T sugar
2 T rice wine
2 T cornstarch

Marinade #2

3 T soy sauce
1/2 t sugar
1/2 t black pepper
4 T water

Cut meat into uniform 1/8-inch slices, 1-1/2 to 2 inches long. Place meat in a sealable bag; add marinade #1 and shake to coat thoroughly. Refrigerate at least 1 hour, shaking at least once. When ready to cook, stir-fry meat in sesame or safflower oil, stirring often. Add marinade #2 and green onions. Continue to stir-fry until thoroughly hot. Serve over warm rice.

Organizing a Fleece Competition: Who Has the Harder Job - the Humans or the Goats?

By Linda Cortright, Eastern Correspondent

Over 160 fleeces were sent from around the country for the fleece competition at the Virginia State Fair. The question that lingers in my mind is what takes more effort: organizing, documenting and sorting all the fleeces into their proper classes, or, taking six months out of the year to grow a champion fleece on your back? Think about it, which would you rather do?

Christy Proost kindly volunteered to once again organize the fleece competition and organize she did. As box after box, containing bag after bag arrived at her house she began the sorting process and in no time at all the two tooth doe fleeces were piled so high they had taken over the dining room. Combed fleeces are judged separately from the shorn, does are separated from the bucks, and as usual, the wethers are in a class by themselves. Each fleece has to be renumbered to ensure total anonymity while judging and a separate form is also attached to include the judge's comments. Clearly this is a job for someone who likes filling out all those extra schedule sheets on their income tax return.

When the first class had overtaken the dining room Christy moved on to the living room and pretty soon her charming Virginia farm was beginning to look more like the warehouse in Texas. I didn't dare ask her what room had been designated for the buck entries but I thought it would be an ideal solution for anyone looking to keep a grown child from returning to the nest. Just store the buck fleeces in their room for a week or two and they'll never think about moving back home again.

The Grand Champion Fleece came from Yvonne Taylor's buck, Pollux at Black Locust Farm. Just how hard is it to grow a champion fleece? According to Pollux it's not hard at all. Yvonne has made combing goats a type of relaxation therapy that's soothing not only for her but for the goats as well. Apparently Pollux has discovered the key to having extended therapy sessions is to grow an abundance of this fine crimped fiber and that puts him at the head of the therapy session time after time. Doesn't sound like hard work to me but I don't know if I want to be spending my winters living in a barn in Maine with a herd of stinky boys.

Of course, not everything revolves around a bag of fiber. Bronwyn Schuetze judged over fifty goats and the pre-show training was intense.

Grand Champion Doe went to Jeanne Austin's Elvira from Blackberry Slump. Elvira isn't shy when it comes to bellying up to the hay feeder and one



Christy Proost, Snowy River, an organized fleece and a herd of bandits hiding behind the trees. Photo by Linda Cortright.

source actually reported seeing Elvira lacing up her Reeboks for a few laps around the field just to tone up her thighs and flatten her tummy before the show. Obviously her training paid off but apparently she has already returned to her sedentary ways.

Fortune, the Grand Champion Buck belongs to Wes and Marilyn Ackley at Bessey Place Cashmere. As I watched the bucks being judged it was clear that they thought this was a contest of a different kind. Was it a contest based on the strongest odor? How far can you squirt? How long can you go? Can you scratch your back and pee on your face at the same time? After all, when over twenty bucks get together from up and down the East Coast, what do you think really matters to them?

The Virginia State Fair was once again a wonderful mingling of man and animal. And from what I was able to gather, I don't know who worked harder, the man or the animal... but I'm also not sure which one had more fun either.

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Meat Market and Other Good Information

From Pat Groves

Cashmere Groves, Oregon City, Oregon

Pat Groves, cashmere goat farmer from Oregon City, Oregon, usually plans for kids to be born in December or early January. This allows their farm to hit the Cinco de Mayo (May 5th) holiday when goat meat is really wanted. Also, since the weather is bad, the does want to be in the barn, so Pat doesn't have to chase them down to get them to a kidding pen. Kids not sold in May have a really good start since they were born early. Pat believes that Mother Nature has a reason for the does coming into season and the buck going into rut in July. In her neck of the woods, she doesn't have to worry about there being snow on the ground in March and April when she wants them to pig out on grass. Operations in colder regions will most likely want to delay kidding to coincide with emerging grass. Timing the emerging grass can be difficult, but it is better to be a couple of weeks early than a month or two too late!

At Cashmere Groves, they were banding bucks at about eight weeks of age and haven't had any horror stories yet. They did band one at eleven weeks and said this was "tough." Pat warns that you have to be extremely careful about banding after eight weeks old. All buck headed for the meat market used to be banded since she didn't want to be handling older bucks. At six months, they're starting to feel their hormones and they get harder to handle. She feels that as long as they're not in rut, it would probably be okay, but trying to handle rutting bucks in the meat market would be difficult—as well as dealing with the smell. Besides, wethers can be held longer if the price is down and when bucks need to go, they have to go.

Last year, their buckings weren't banded prior to selling for meat. Pat noticed that they really muscled up. She didn't feed them extra rations either, but at three months of age, the largest of the lot was 62 pounds, with the others ranging from 48 to 55 pounds. She fed them only grass hay and a little grain. From the time they were a month and a half old to three months old, they got about 1/2 cup of grain per kid per day. She didn't bother to wean them, but just sent them straight to the meat market at three months.

Pat likes her kids to be born early. Definitely before February. Early kids grow faster. Kids born after April seem to take a year longer to come up to what Pat likes for breeding size. Perhaps it's the advantage of all that new grass. Pat has a friend who has noticed that it seems to be the same with sheep. Pat has had no experience with kids born in February and March.

One problem to early kidding is a poor fleece from the doe. Since they're very pregnant during the prime fleece growing period, it noticeably affects the fleece amount.

Another advantage to early kidding is that you don't have to worry about fly strike from tagging or banding. Also, if you have an ethnic market to sell to, early kids command top dollar, because there aren't very many of them around.

If you have an ethnic market to sell to, early kids command top dollar, because there aren't very many of them around.

Pat has noted that the ethnic meat market seems to prefer kids at about 50 pounds live weight. A 50 pound kid would dress out at about 25 pounds of meat, which is enough meat

for their parties. Knowing this, it might make more sense to not band at all and let the guys muscle up early and get them off the farm sooner.

They have observed that meat prices at auctions aren't usually as good as those from private sales.

Pat's does started their heat cycles early this year—in May. She isn't sure if this happened because they kidded early, but when they started flagging in May, she figured there must be a good reason, so she bred them in June. Since, she's heard that we may be headed for a hard winter (January - March) in the Pacific Northwest, she is glad that the early kids will have a month to a month and a half to get their feet on the ground before it turns really nasty.

This year, they have five cashmere does which have been bred to Boer bucks. She can't wait to see what "hits the ground." Pat notes that, if you breed to a Boer buck, you can't feed your does like you do when you breed to a cashmere buck. If you do, the kids get too big, too soon and could result in birthing problems. So, per Pat, "It's lean and mean around here until kidding." Her girls are trying to figure out how come they're not getting any goodies (like grain) yet.

Cashmere Qualities of the The Chinese Shandong Goats

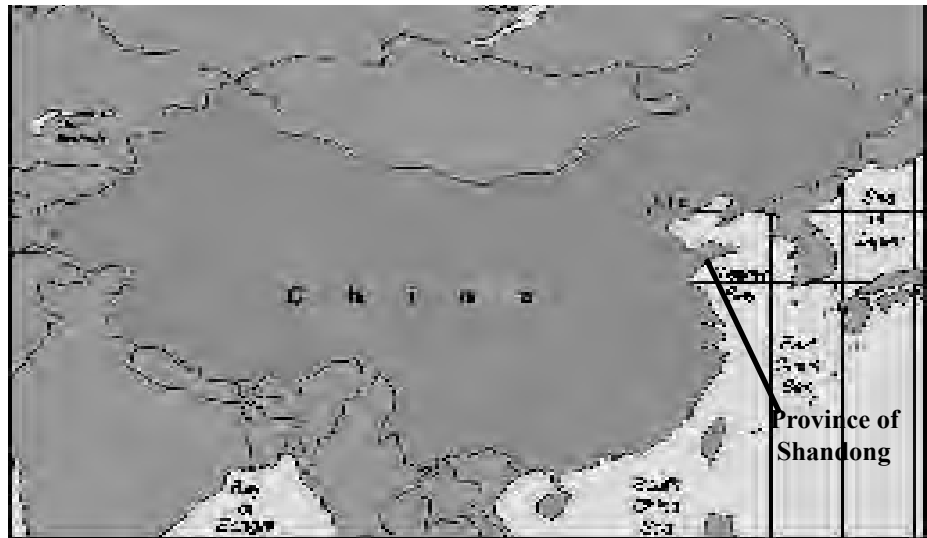
This article is a summary of a paper presented at the 1996 International Conference on Goats in Beijing, China. The paper is published in the Conference Proceedings, beginning on page 224. The title and authors of the paper are: Studies on Shandong Cashmere Physical Traits and Ultrastructure by Wang Jiamin, Zhang Wanfu, Qin Xijuan and Chen Guanying, Shandong Agricultural University, Taian 271018, China.

This paper, which was presented at the 1996 Beijing International Conference on Goats, reports on the results of a study of 57 raw cashmere samples of the three main goat breeds in Shandong, China. The samples were studied using conventional methods and electromicrography. Information obtained included mean clean content, percentage of down, down diameter, down stretched length, strength and elongation at break, and scale shape.

Background and Geography Lesson

Shandong is in China. It's hard to find on the map, as a map of China is a plethora of place names with too many vowels and lots of obscure consonants. Even Vanna White would have problems in China. Shandong is a province in China. It's in east China and is bordered by the Huang Hai (Yellow Sea) and the Bo Hai (Gulf of Chihli). It is about 1-1/2" by 2" in my Complete Atlas of the World, which means it is about 400 miles wide and about 250 miles deep, or about the size of our province of South Dakota. Beijing, the city, is only a couple of provinces south of Shandong, so the researchers didn't have far to go to the conference to present their paper.

Shandong goats numbered 24.75 million in 1994 and they produced 708 tons of cashmere which, per the paper, is 9% of China's cashmere production. I have trouble visualizing a pile of 708 tons of cashmere. 708 tons is 22,656,000 ounces and may be a stack bigger than the state of South Dakota, certainly larger than Rhode Island. I also have trouble visual-



Shandong Province, China—it's in the far east. South of the peninsula is the Yellow Sea and north is the Gulf of Chihli.

izing 24.75 million goats. That's roughly 247 goats per square mile of Shandong.

There are three main types of goats in Shandong—the Yimeng Black Goat (which produces violet cashmere), the Jining Gray Goat (produces gray cashmere) and the Lubei White Goat (you guessed it—white cashmere). The color "violet", when referring to Chinese cashmere, means brown.

The Study Methods

The researchers analyzed 57 samples of cashmere, collected from the center productive district. They used 26 samples of violet, 18 gray and 13 white. I'm not sure why they didn't analyze an equal number of each color, but perhaps these were the particular goats they could catch on the research day. The study does not specify if the samples comes from 57 goats or are only 57 samples of cashmere, so it is possible that each sample is the combination of many goats.

They analyzed the samples using standard methods as defined by Li Zinong in 1993, and by using a JE-1200EX scanning electron microscope. The purpose of the study was to evaluate the three types of cashmere, the quality of the cashmere

and to suggest ways that the quality of the cashmere could be improved to meet the requirements of the textile industry.

The Study Results

Down Color - It was found that the violet cashmere contained 46% light brown fibers, 23% brown, 19% brown and gray and 12% gray fibers. Gray cashmere is actually 83% white fibers and 17% gray. White is white—all white.

Component of Raw Cashmere - The study found that the samples averaged 83.15% mean clean content, 56.16% percentage of down, 23.85% percentage of hair and 2.26% rate of lanolin. The differences among the three types of cashmere was not significant.

Down Diameter - The average cashmere diameter was 14.83 μm and the coefficient of variation was 21.65%. Differences between the three cashmere types was significant, with the gray being the finest down and the violet being the coarsest. Comparison of the three types of cash-

Continued on next page

Shandong Goats

Continued from previous page

mere are contained in the table below. The mean diameter ratio of guard hair to down is 3.60.

Down Length - The average length of stretched fiber is 43.8mm (1-3/4") Violet down is slightly longer than white down which is slightly longer than gray down. The paper says that the "hand-ranked" length is 24.7 mm (.97") and the "effective length" is 35.5 mm (1-1/3"). They say that these two lengths are obviously shorter than the stretched length, possibly because the fiber is easy to break and is not stretched sufficiently.

Down Strength and Specific Density - The average strength of the fiber is 4.05 g and elongation at break are 37.22%. Average specific density of the down is 1.23, which, the researchers say is smaller than that of other Chinese provinces' down.

The Scales (Ultrastructure) - The scale shape is mostly circular with a scale density of 772.80 layer/cm. Visible scale height is 15.27 μ m and ratio of scale length to width is 1.11. The paper notes that fineness of all down fibers is not even and that fibers have "tender" marks and scale cracks due to insufficient nutrition and incorrect combing methods.

Conclusions of the Study

The study concludes that the Shandong cashmere currently meets China's export standards and satisfies the requirement of the textile industry. They note that im-

provements could be made in cashmere length, strength and the occurrence of "complex" colors.

Methods suggested for improving the cashmere are:

1. Maintain present fiber diameter while increasing weight of down per fleece, percentage of down, down length and improving cashmere color by crossing and selection.
2. Ensure adequate nutrition during down growth period, especially during late gestation. Comb out cashmere as it sheds from the skin in the spring.



**Bo-Peep—A cute kid,
but not much for education.**

Question: What do pirates, shepherds and human cannonballs have in common?

Answer: Lack of education.

A series of television advertisements which ran August 24th through September 3rd and are scheduled to run again January 4 -17, 1999, encourage school children in Oregon to work harder in school or they may end up with the other under-achievers, as pirates, shepherds and human cannonballs. The ads cost the State of Oregon \$60,000 to develop and another \$350,000 for commercial air time.

Sheep producers in the State are upset and demanding apologies and requesting that the ads be modified before their next-slated run. Richard Kosesan, executive director of the Oregon Sheep Growers Association said, "If public monies are being used in this fashion, something's wrong. It's an unfortunate situation."

There have been no public comments from the pirates or human cannonballs.

Table of Physical Traits of Shandong Cashmere

Cashmere Type	Down Diameter μ m	Down Length mm	Down Strength g	Elongation %	Specific Density
Violet	15.32	46.8	4.12	38.53	1.24
Gray	14.42	44.0	3.79	35.09	1.25
White	14.83	43.1	4.11	40.13	1.17
Average	14.83	43.8	4.5	37.22	1.23

Note: 1mm = .03937"

Calendar of Events

Association Contacts

November 13 - 15, 1998

Kid 'N Ewe (9th annual) Central Texas Wool Market, Blanco County Fairgrounds, Johnson City, Texas. Demonstrations, fiber arts displays, vendors, animals, sheep and goat shearing, lamb dinner with fashion show and auction. For info and tickets: Tara Wheeler (evenings) 512-288-9845, Mary Carol Buchholz (evenings) 512-858-7920.

November 19 - 21, 1998

Texas Cashmere Association 9th Annual Show and Sale, Brown County Fairgrounds, Hwy 377 South, Brownwood, Texas, For info contact TCA.

January 9 - 24, 1999

National Western Stock Show & Rodeo, 4655 Humboldt St, Denver, Colorado 80216-2818, Phone 303-297-1166. Website for detailed calendar of events: <http://www.nationalwestern.com>

January 13, 1999

National Western Stock Show, Goat Shearing Contest, 6 PM, Stadium Hall, Level 1, see address and telephone above.

January 14, 1999

National Western Stock Show, Cashmere Goat Show, 10 am, Stadium Hall, Level 1, see address and telephone above.

January 16, 1999

5th Annual Pygora Goat Show & Fiber Frenzy The Armory Building, Washington County Fair Complex, Hillsboro, OR. Fun, fiber, fleeces, vendors, goat show, demos. 10 am - 5 pm. Free admission. For more info: Lisa Roskopf: 503-985-3331, Jackie Liner: 503-623-2376.

January 30, 1999

Barn to Yarn VII, Pioneer Museum Complex, 309 W Main, Fredericksburg, Texas, 512-440-1025 Festival showcasing fiber production and different ways in which wool, cotton, mohair, camel hair, etc. can be transformed into useful products. Demonstrations: Spinning, weaving, hooking, felting, lacing, etc.

May 29, 1999

Back of the Wasatch Fiber Festival, Summit County Fairgrounds, Coalville, Utah, Featuring llamas, alpacas, sheep, stockdogs and everybody's favorite: goats! More info: Heide Smith 435-649-3856 (evenings).

American Meat Goat Association

W. E. Banker, President, 512-384-2829

Cashmere America Co-operative

Joe David Ross, Manager, 915-387-6052

fax: 915-387-2642

Wes Ackley (Maine) 207-336-2948

Marti Wall (Washington) 360-424-7935

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Membership info: Marilyn Burbank, PO Box 2067, Rogue River, OR 97537, email: burbank@cdsnet.net

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North West Cashmere Association (NWCA)

Guy Triplett, President, 541-388-1988

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Professional Cashmere Marketers' Association (PCMA), Tom and Ann Dooling

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ann@MontanaKnits.com

Pygora Breeders Association (PBA)

Darlene Chambers, President

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email: dchambers@proaxis.com

Texas Cashmere Association (TCA)

Dee Broyles, President

806-489-7645 office, 806-489-7959 home

Wild Goat Women

Debbie Walstead, Chairperson, 719-495-2962

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BLACK FEN FARM

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Kevin Weber
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Hackettstown, NJ 07840
908-852-7493
fax: 908-852-1336 (call first)
email: blackfen@juno.com

NEW MEXICO

DOUBLE EYE FARM, INC.

Sanford Bottino
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Ojo Caliente, NM 87549

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MCTIMMONDS VALLEY FARM

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MOONSHADOW FARM

Lisa and Jerry Zietz
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**Northwest Cashmere Association
Cashmere Goat Show Results
Canby, Oregon
September 26, 1998**

Judge: Susan Stutz

GRAND CHAMPION DOE
Hokulani Farms "Diana", Karl and Cynthia Heeren
RESERVE GRAND CHAMPION DOE
Hokulani Farm "Nora", Karl and Cynthia Heeren

Wethers, less than 12 months
Green Water Farm "Thor", Port Townsend, WA and
Green Water Farm "Odin G", Port Townsend, WA

Bucks, less than 9 months
Hokulani Farms "Sergi", Bend, OR

Does, less than 12 months
Green Water Farm "Lilly", Port Townsend, WA
Does, yearling less than 24 months
Hokulani Farms "Nora", Bend, OR
Does, 2-4 years
Hokulani Farms "Diana", Bend, OR
Does, Senior, over 4 years
Hokulani Farms "Cream Puff", Bend, OR

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Chevon—Meat Cuts

From the USDA Goat Handbook

Chevon is valued highly by certain people, for example, of Mediterranean, Caribbean, Near Eastern, Indian, Far Eastern and Central American origin. Among Spanish speaking people, it is called "cabrito."

The US National Livestock and Meat Board has issued uniform standards and identifications of retail cuts for beef, pork, veal and lamb, but not for chevon; probably because this market is relatively small and not well organized.

The goat carcass is different from the lamb carcass, being much leaner and having only little subcutaneous and muscular fat. Otherwise, the bone structure and muscle position may be quite similar. Therefore, in the absence of official charts on the anatomy and retail cuts of goats—chevon— it is suggested that the respective lamb charts, may serve a useful purpose.

A goat weighing 100 lbs. may have a carcass weighing approximately 50 lbs., or 50% liveweight. Goat carcasses, unlike pork or beef, but like lamb, are not split nor "ribbed," i.e. the whole carcass is handled readily, being lighter than pork or beef and are cooled as a whole. For carcass evaluation, however, the fore- and hindsaddles are separated between the 12th and 13th rib to show rib eye and loin eye areas, and subcutaneous fat thickness. The foresaddle, shoulder, rack, foreshank and breast make up approximately 51% of the carcass or 25.5 % of the liveweight. The hindsaddle, loin, leg and flank comprise the difference of 49% of the carcass or 24.5% of the liveweight.

Principal Cuts

Primal cuts are the leg, loin, rack and shoulder. The largest cut is the leg, about 33% of the carcass or 16.5% of the live goat. On a retail basis, it would be trimmed down to 24% carcass weight. The sirloin is normally included with the leg after separation of the loin at the seventh or last lumbar vertebra. In beef and pork, the sirloin and rump are separate cuts.



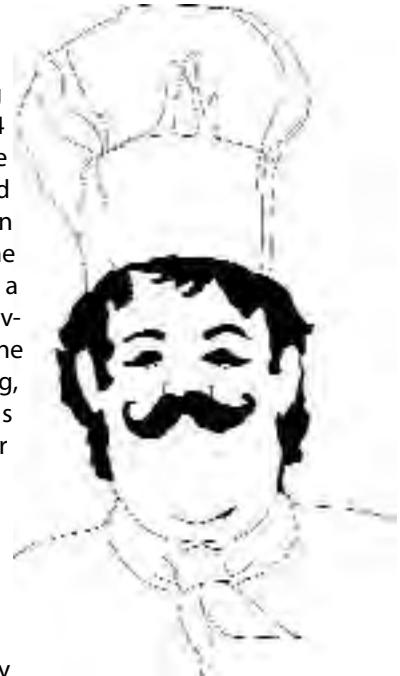
Leg—The leg may be prepared as Frenched, American or boneless. For the Frenched leg, only the tail bones, hock bones, Achilles tendon, fat trim and prefemoral lymph node are removed and the shank bone is exposed. For the American leg, the shank bone and the shank muscle are also

removed. The whole leg may also be cut into 4 to 6 sirloin chops, the rump, center roast and shank. The latter two can be sliced into steaks. The best use of the leg is as a boneless cut, after removing the whole pelvic bone and femur. For roasting, the boneless leg needs to be tied together or jet-netted.

Loin—The loin is the most valuable and most tender cut. Only 4% of the live weight are retail loin cuts. Kidney fat is usually left on the wholesale carcass to protect the valuable tenderloin muscle underneath from discoloration and dehydration. The loin may be prepared as double loin chops, or after sawing through the lumbar vertebrae as single chops containing the characteristic T from the vertebral process as in T-bone steak of beef. The rack may be prepared likewise into rib chops, containing at least one rib, but may be cut considerably thicker than pork chops or beef steaks because of their small size.

Shoulder—The largest cut in the foresaddle is the shoulder, second in size only to the leg. Shoulder cuts are priced less than leg and loin because of less tenderness and palatability. However, Saratoga roll boneless should blade chops composed largely of rib eye muscle make very tender and juicy chevon. The rest of the shoulder goes for stew or shis-kabobs. The shoulder can also be made into a jet-netted boneless shoulder roast. Rough cuts, the flank, fore shank and breast are best ground up, but can be utilized also cubed or as spareribs.

Overall, 50% liveweight is wholesale carcass, but only 34% is retail boneless chevon meat.



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1999

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"There are two means of refuge from the miseries of life: music and cats."

...Albert Schhweitzer

"A good man can be stupid and still be good. But a bad man must have brains."

...Maxim Gorky (Russian Writer, 1903)

"Millenium bug? I recommend Ivermectin."

...Paul Johnson

"I'm down to giving shots and getting ready for kidding. Am I antsy? You bet!"

...Pat Groves, Cashmere Groves, 10/14/98

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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