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# AGRICULTURAL ALTERNATIVES

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## Milking Sheep Production

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Sheep products in Pennsylvania do not have to be limited to meat and wool. There is a growing interest in milking sheep and sheep milk products. In Europe, sheep dairying is a fairly common enterprise, and sheep breeds have been developed specifically for milk production. It is not unusual for these breeds to average four to seven pounds of milk daily. The European breeds, however, are not available in the United States because of import restrictions. Sheep breeds common to Pennsylvania average between .75 and 2.0 pounds of milk daily. This requires U.S. sheep producers interested in dairying to carefully select ewes based on milk production and durability. Crossbred ewes produce more milk and are more durable than some purebreds.

### Marketing and Profitability

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A profitable Pennsylvania sheep milk industry needs three components: customers, processors, and distributors. There appears to be a market for milking sheep products. However, products are limited to fresh cheeses and yogurts because some imported cheeses, such as Roquefort, can be marketed at a much lower cost than those produced locally.

The main concern in starting this type of enterprise is to bring together the producers, processors, and distributors. A processor cannot economically produce cheese and yogurt

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*This publication was developed by the Small and Part-time Farming Project at Penn State with support from the U.S. Department of Agriculture-Extension Service.*



without sufficient supplies of sheep's milk. A viable cheese production unit needs milk from at least 750 ewes. This could be provided by several small producers joining together to market their milk to a single processor.

Producers must realize that profitability from the lamb crop is as important as milk sales. Ethnic groups provide a good opportunity to market 30- to 45-pound lambs as well as specialty milk products. For more details on lamb production, see *Off-Season and Holiday Lamb Production* and *Accelerated Lamb Production*, which are two other titles in this *Agricultural Alternatives* series.

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## Recommended sheep breeds for milking sheep production

BREED	CLASSIFICATION	APPROXIMATE MATURE WEIGHT <sup>a</sup>
Coopworth	medium wool, meat	150
Dorset	short wool, meat	140
Finnsheep	medium wool, meat	120
Katahdin	hair, meat	135
Polypay	medium wool, meat	140
Rambouillet	finewool, meat	150
Romanov	black wool, meat	130
Shropshire	short wool	150
St. Croix	hair, meat	130
Targhee	medium wool, meat	150

<sup>a</sup> This weight is for ewes. Ram body weight is 1.55 to 1.75 times the ewe body weight.

## Feeding, Pasturing, and Milking

Ewes in sheep milk production systems can also rear their lambs. However, there are variations in the length of time before the lambs are weaned. One of the more common production practices is to wean the lambs after three days and to rear them on milk replacer and creep feed. In this situation, ewes would probably be milked twice a day. Another practice would allow the lambs to nurse for 30 days. The ewes would be milked only once a day during this period. The normal length of lactation is 100 days. The average number of lambings is 1.5 per year in milking sheep flocks.

Nutrition for the ewe is very important. Intensive grazing can provide most of the ewe's energy and protein requirements. It may be necessary to feed between two and three pounds of shelled corn or comparable energy grain to maintain production and body condition. During the winter months, good quality, mixed hay should be fed along with two to three pounds of a 16 to 18 percent protein concentrate.

Dry ewes can be maintained on pasture alone. Ewes may require additional supplemental feed during the final four weeks before lambing, especially when fed hay. To maximize milk production and increase the lambing rate, ewes are bred so they are dry for short periods. Thus, they must be on a good nutrition program with emphasis on body condition.

Setting up a milking sheep operation is fairly inexpensive when existing housing facilities are available. The milking parlor should be constructed with platforms so the ewes can be milked from behind. Sheep require a special milking machine which consists of a vacuum system, a pulsation system, cluster assemblies, and a system for transportation, release, and storage of the milk.

## Breeding

A well-planned breeding program is important for profitability. Sheep are seasonal breeders and are most fertile during September, October, and November. Day length is the key environmental factor affecting reproduction in ewes. In spite of their reputation, certain breeds of sheep seem to be less affected by day length than others. Certain breeds are recommended for milking sheep because a large percentage will breed through the winter and into the spring. Crossbred ewes developed from these breeds will often breed out-of-season. In addition, crossbred ewes tend to reach sexual maturity earlier. (See table of recommended sheep breeds for a milking sheep production enterprise.)

## Health Program

Good health care for the ewe is essential for successful milk production. As milk production increases, the possibility exists for more health problems. Two common nutrition-related health problems are milk fever and ketosis. Prevention of these problems requires proper nutrition prior to lambing and in the early stages of lactation.

Mastitis, or inflammation of the udder, is a problem directly associated with poor management practices. Improper milking tends to make ewes more prone to mastitis. Preventive measures include hygiene during milking, proper ventilation, clean housing, and adequate nutrition.

## Sample Budget

The following sample budget gives an example of costs and returns, and guidelines for initial resource requirements for milking sheep production. This sample budget should help ensure that all costs and receipts are included in your calculations. Costs and returns are often difficult to estimate in budget preparation because they are numerous and variable. Therefore, you should think of these budgets as an approximation and use the "Your Estimate" column to reflect your specific situation.

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## Sample Milking Sheep Budget

Milking 160 days per year (lambing 1.5 times per year), with 1.65 lambs born per ewe per lambing, for a 100-ewe flock.

Item	Per ewe	Unit	Price	Total	Your estimate
<b>Receipts</b>					
Milk	160	pounds	\$55.00	\$104.00	_____
Lambs	95	pounds	\$1.35	\$128.25	_____
Wool and hides				\$10.00	_____
Cull ewe and ram				\$7.50	_____
<i>Total receipts</i>				\$249.75	_____
<b>Variable costs—feed</b>					
Milk replacer for lambs				\$43.00	_____
Lamb feed for replacement				\$4.41	_____
Ewes				\$38.07	_____
<i>Total feed costs</i>				\$85.48	_____
<b>Variable costs—other</b>					
Health program				\$6.78	_____
Breeding management				\$3.00	_____
Marketing, supplies, misc.				\$11.08	_____
<i>Total variable costs</i>				\$106.34	_____
<b>Fixed costs</b>					
Labor charge	12	hours	\$5.00	\$60.00	_____
Milking labor charge	3	hours	\$5.00	\$15.00	_____
Ram replacement				\$3.00	_____
Fencing and equipment charge				\$5.80	_____
Buildings charge				\$5.00	_____
Milking equipment charge				\$11.73	_____
<i>Total fixed costs</i>				\$100.53	_____
<b>Total costs</b>				\$206.87	_____
<b>Returns</b>					
Returns over variable costs				\$143.41	_____
Net returns				\$42.88	_____

### Initial resource requirements

- Land: 50 acres
- Labor (per head)
  - 15 hours x 100 ewes = 1,500 hours
  - 12 hours x 4 rams = 48 hours
- Capital
  - Livestock (per head)
    - \$80 x 100 ewes = \$8,000
    - \$250 x 4 rams = \$1,000
  - Existing buildings, improvements, fencing: \$10,800
  - Milking equipment and storage: \$8,200

## For More Information

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*Agronomy Guide*. AGRS-26, Penn State College of Agricultural Sciences, University Park, PA 16802.

Engle, Clair. *Body Condition Scoring of Sheep*. Fact Sheet No. DA594-09, IVD3g. Department of Dairy and Animal Science, Penn State College of Agricultural Sciences, University Park, PA 16802.

Gates, Norman. *Practical Guide to Sheep Disease Management*. News-Review Publishing Co., Moscow, ID.

*Livestock Feeding on Pasture*. A.M. Nichol, Ed. Chapters 2, 5, 7. New Zealand Society of Animal Production, Publ. No. 10, Ruakura Agricultural Research Center, Hamilton, NZ.

*Sheep Housing and Equipment Handbook*. Midwest Plan Service. MWPS-3, Ames, IA

Murphy, Bill. *Greener Pastures on Your Side of the Fence*. 2nd Edition, Arriba Publishing, Colchester, VT.

Penn State Sheep Budgets. Section in *Farm Management Handbook*, AGRS-10, Penn State College of Agricultural Sciences, University Park, PA 16802.

*Pennsylvania Forage Handbook*. Department of Agronomy, Penn State College of Agricultural Sciences, University Park, PA 16802.

Ross, C. V. *Sheep Production and Management*. Prentice Hall, Englewood Cliffs, NJ. 07632.

*Sheep Production Handbook*. American Sheep Industry Association. Paper Systems, Inc. Denver, CO. 80112.

## Associations and Periodicals

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### Sheep Breed Associations

American and Delaine-Merino Record Assn.

1026 Country Rd. 1175, Rt. 3  
Ashland, OH 44805

American Black Sheep Registry  
4714 Glade Rd.  
Loveland, CO 80538

American Border Leicester Assn.  
Rt 4 Box 138  
Taylorsville, NC 28681

American Cheviot Sheep Soc., Inc.  
RR 1 Box 100  
Clarks Hill, IN 47930

American Cormo Sheep Assn.  
P.O. Box 696  
Ramah, NM 87321

American Corriedale Assn., Inc.  
Box 290  
Seneca, IL 61360

American Cotswold Record Assn.  
18 Elm St.  
P.O. Box 59  
Plympton, MA 02367

American Hampshire Sheep Assn.  
P.O. Box 277  
Whiteland, IN 46184

American Karakul Sheep Registry  
3026 Thomas Rd.  
Rice, WA 99167

American Oxford Down Record Assn.  
Rt 1 Box 75  
Stonington, IL 62567

American Polypay Sheep Assn.  
609 S. Central, Ste. 9  
Sidney, MT 59270

American Rambouillet Sheep Breeders Assn.  
2709 Sherwood Way  
San Angelo, TX 76901

American Romney Breeders Assn.  
29515 N.E. Weslenn Dr.  
Corvallis, OR 97333

American Shropshire Registry Assn., Inc.  
P.O. Box 250  
Hebron, IL 60034

American Southdown Breeder's Assn.  
HCR 13 Box 220  
Fredonia, TX 76842

American Suffolk Sheep Soc.  
P.O. Box 256  
17 West Main  
Newton, UT 84327

Black-Top Delaine-Merino Sheep Soc.  
1775 Damman Rd.  
Fowlerville, MI 48836

Columbia Sheep Breeders Assn. of America  
P.O. Box 272E  
Upper Sandusky, OH 43351

Continental Dorset Club  
P.O. Box 506  
Hudson, IA 50643

Coopworth Soc. of North America  
1335 West U Ave.  
Schoolcraft, MI 49087

Finnsheep Breeders Assn.  
P.O. Box 512  
Zionsville, IN 46077-0512

Jacob Sheep Breeders Assn.  
6350 East County Rd. 56  
Fort Collins, CO 80524

Jacob Sheep Conservancy Registry and Breed Assn.  
9241 Eureka Rd.  
Girard, PA 16417

Katahdin Hair Sheep Int'l.  
Rt 2 Box 33  
Perryville, AR 72126

Montadale Sheep Breeders Assn.  
P.O. Box 603  
Plainfield, IN 46168

National Lincoln Sheep Breeders' Assn.  
RD 6 Box 24  
Decatur, IL 62521

National Tunis Sheep Registry  
Tunis Shepherd  
Route 1 Box 192  
Gouverneur, NY 13642

Natural Colored Wool Growers Assn.  
P.O. Box 487  
Willits, CA 95490

Navajo Churro Sheep Assn.  
Box 94  
Caliente, NM 87549

North American Clun Forest Assn.  
W5855 Mahlum Rd.  
Holmen, WI 54636

North American Dairy Sheep Assn.  
Rt 3 Box 10  
Hinckley, MN 55037

North American Romanov Sheep Assn.  
P.O. Box 1296  
Pataskala, OH 43062-1296

North American Shetland Sheep  
Registry  
1240 North 22nd St.  
Allegan, MI 49010

North American Texel Sheep Assn.  
Lower Myrick Rd.  
Lurrel, MS 39440

Scottish Blackface Sheep  
Breeders' Assn.  
39282 River Dr.  
Lebanon, OR 97355

St. Croix Breeders Assn.  
UMC 4815  
Utah State University  
Logan, UT 84322

Silverstream East Friesians  
P.O. Box 5585  
Dunedin, NZ

U.S. Targhee Sheep Assn.  
P.O. Box 15  
Jasper, MN 56144

## **Sheep and Wool Industry Associations**

American Lamb Council  
c/o American Sheep Industry Assn.  
44 No. Michigan Ave.  
Chicago, IL 60611

American Sheep Industry Assn.  
6911 S. Yosemite St.  
Englewood, CO 80112-1414

American Sheep Industry Women  
1323 Elkhorn  
Belle Fourche, SD 57717

Lamb Committee  
c/o National Livestock and Meat Bldg.  
44 No. Michigan Ave.  
Chicago, IL 60611

National Lamb Feeders Assn.  
P.O. Box 238  
Bristol, IL 60512-0238

National Wool Marketing Corp.  
P.O. Box 32445  
3900 Groves Rd.  
Columbus, OH 43232

Pennsylvania Sheep and Wool  
RD 1 Box 188  
Kempton, PA 19529

Sheep Industry Development Program  
c/o American Sheep Industry Assn.  
6911 S. Yosemite St.  
Englewood, CO 80112-1414

## **Sheep Periodicals**

*Black Sheep Newsletter*  
RD 1 Box 288  
Scappoose, OR 97056

*Lamb Producers' Journal*  
P.O. Box 384  
Monticello, IN 47960

*Lamb and Wool Market News*  
6911 S. Yosemite St.  
Englewood, CO 80112-1414

*Maryland Sheep News*  
6184 Ayrshire Dr.  
Salisbury, MD 21801

*National Wool Grower*  
6911 S. Yosemite St.  
Englewood, CO 80112

*Sheep!*  
Box 329  
Jefferson, WI 53549

*Sheep Breeder and Sheepman*  
P.O. Box 796  
Columbia, MO 65205

*Sheep Canada*  
Box 777  
Airdrie, Alberta TOM OBO  
Canada

*Shepherd Magazine*  
5696 Johnston Road  
New Washington, OH 44854

*Sheep Producer*  
HCR 71 Box 550  
Orbisonia, PA 17243

*Sheep Research Journal*  
American Sheep Industry Assn.  
6911 S. Yosemite St.  
Englewood, CO 80112

*The Stockman/Grass Farmer*  
P.O. Box 96075  
Jackson, MS 39286

*The Wool Page*  
P.O. Box 218  
Boston, MA 02124

## **Sheepdog Associations**

Great Pyrenees Club of America  
8218 Finister Court Ct.  
Fair Oaks, CA 95628

Int'l. Livestock Guarding Dog Assn.  
Box FC  
Hampshire College  
Amherst, MA 01002

Maremma Sheepdog Club of America  
P.O. Box 546  
Lake Odessa, MI 48849

## **Sheepdog Periodicals**

*National Stock Dog*  
P.O. Box 402  
Butler, IN 46721

*Ranch Dog Trainer*  
RD 2 Box 333  
West Plains, MO 65775

*Working Border Collie*  
14933 Kirkwood Rd.  
Sidney, OH 45365

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Issued in furtherance of Cooperative Extension Work, Acts of Congress May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture and the Pennsylvania Legislature. L.F. Hood, Director of Cooperative Extension, The Pennsylvania State University.

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