
AGRICULTURAL ALTERNATIVES

Milking Sheep Production

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

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

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 ^a
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

^aThis 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
Receipts					
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	_____
Variable costs—feed					
Milk replacer for lambs				\$43.00	_____
Lamb feed for replacement				\$4.41	_____
Ewes				\$38.07	_____
<i>Total feed costs</i>				\$85.48	_____
Variable costs—other					
Health program				\$6.78	_____
Breeding management				\$3.00	_____
Marketing, supplies, misc.				\$11.08	_____
<i>Total variable costs</i>				\$106.34	_____
Fixed costs					
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	_____
Total costs				\$206.87	_____
Returns					
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

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

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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