

Reprinted with permission from: Minnesota Extension Service-University of Minnesota
AG-FO-3691, 1989.

Published by: University of Minnesota Extension Service. <http://www.extension.umn.edu>

Sheep - An alternative new income source¹

R. M. JORDAN

R. M. Jordan is an Extension Animal Scientist, Sheep, Department of Animal Science

In selecting a new and hopefully profitable livestock alternative, a producer likely evaluates its potential on the following basis:

1. What is the chance of favorable financial returns?
2. What risks are involved?
3. How easy is it to start up or discontinue the venture?
4. Will it profitably utilize surplus labor, forage, and untillable pasture land?
5. Is it compatible environmentally with my home; i.e., do the animals smell, create pollution, make noise, etc.?
6. Is it safe? Am I endangering my family?
7. Is the magnitude of a “one ram and ewe unit” excessive for my labor and feed supplies?

The U.S. has but 7 to 8 million ewes producing about 7.5 million lambs per year. This supply is inadequate to meet our demands, necessitating the importation of 100-125 million pounds of lamb annually. The fact that a flock of ewes can consistently produce 1.5 lambs per ewe annually, compared with .8 to .9 calf per cow annually, provides sheep a sizable advantage in productivity. Normally they are also more profitable.

Sheep have low capital start-up requirements for both the sheep and the facilities needed for them. Furthermore, returns on capital from wool and lamb sales are rapid. Thus, one could “get into sheep” and “get out of sheep” within a short period of time without having made many changes to the farm facilities and with a minimum of risk.

Sheep do require more labor than beef cattle, and this labor must provide good husbandry to the flock. Therein lies an often overlooked virtue. Sheep are not a “high capital, coupon-clipping venture,” but rather they provide an opportunity to be profitably self-employed.

¹ Copyrighted by and used with the permission of the Minnesota Extension Service, University of Minnesota. Users may print up to one copy for personal use. Multiple copies of this publication are available from: Distribution Center, University of Minnesota, 20 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108-6069. Prices quoted on request; call 612-625-8173.

Sheep are ruminants and can be fed diets consisting largely of hay and pasture. Thus, they are well-suited to unused, hilly, rocky land.

The nature and distribution of their manure is such that its smell or the building of costly manure disposal pits is not a problem. Sheep are quiet animals, so incompatibility with the environment is minimal.

A breeding unit of 40 to 50 ewes and a ram is more suited to the surplus forage, by-products and labor on most farms than a comparable forage-consuming herd of only 8 to 10 beef cows.

Sheep do have some obvious shortcomings. They can be ravaged by wandering dogs, need more expensive fencing than cattle, and are less immune to parasite infestation. Despite these problems, they can be a very profitable livestock enterprise. Ask good sheep producers if their flocks make them money.

Getting started right

Factors that have a bearing on the profitability, ease of operation and pride of involvement in a new alternative enterprise include:

1. Most profitable breed or type of sheep to raise.
2. Start-up capital requirements and annual debt service costs.
3. An awareness and appreciation of the production factors that significantly influence the enterprise's profitability.
4. Sheep feed requirements and how best to provide them.
5. Sheep health needs and how to efficaciously avoid problems.
6. Housing, fencing and equipment that facilitate caring for sheep needs.
7. How, where, and from whom a newcomer to the industry can acquire more detailed and current information.

Choice of breed

Some sheep breeds are decidedly more productive than others, and some, in themselves, are not very productive but produce well when mated with a second breed. The breed or crosses of breeds should excel in:

1. Prolificacy
2. Weight gains
3. Carcass excellence
4. Wool production
5. Hardiness
6. Ease of handling

Rank of breeds for given traits

Size	Prolificacy	Rate of gain	Carcass excellence	Hardiness
Suffolk	Finn	Suffolk	Suffolk	Rambouillet
Hampshire	Romanov	Hampshire	Hampshire	Merino
Columbia	Polypay	Columbia	Dorset	Cheviot
			Texel	
	Wool production	Milk production	Disposition	
	Columbia	Suffolk	Dorset	
	Corriedale	Dorset	Hampshire	
	Rambouillet	Finn cross		
	Targhee			

No breed excels in all traits. Thus, productivity is enhanced 20 to 30 percent by crossing breeds that contribute complementary traits. Some breeds are much better suited as ewe breeds (Finn crosses and Polypay) and some as terminal sire breeds (Suffolk and Hampshire). The Suffolk's excellence in size, growth rate, carcass, milk production and reasonable prolificacy has made it popular both as a ewe and terminal sire breed. Unfortunately, its large size increases ewe feed costs, and its low wool production and shorter life span are decided shortcomings. More importantly, most of the advantages that Suffolks or Hampshires contribute to lamb weight gains and carcass excellence are attained when they are mated to smaller, more prolific ewes that have lower feed requirements, live longer, are more hardy, and produce much more wool. While wool normally contributes only 25 to 40 percent to the gross sheep income, the high priced, fine wool of the Rambouillet and the long stapled, bright, heavy fleeces of the Lincoln and Corriedale make them exceptions.

For maximum sheep income, we recommend a ewe flock that contains 25 percent Finn or Romanov and 75 percent Columbia, Rambouillet, Dorset, or Polypay (combinations of two or more breeds) crossed with Hampshire, Suffolk or Columbia rams.

Start-up capital and annual debt service costs

This is an exceedingly important area of consideration for those contemplating a new venture. It is dealt with in some detail in Minnesota Extension Service publications AG-FS-0977 and AG-FO-0730, so comment here will be limited. Debt service is influenced greatly by size of loan, amortization schedule and interest rate.

Many farmsteads have unused buildings that, with little or no modification, are suitable for sheep. Nearly all new sheep enterprises would require fencing, waterers, feed bunks, gates and equipment. Capital and annual debt service costs for three circumstances include: (See Table 1).

Table 1.

Items	Amount, no., size	Total capital costs	Yearly debt amortization	Interest @ 10%	Total debt ser- vice costs/ewe annually
1. New barn ¹					
@ \$5/sq. ft.	1500 sq. ft.	\$7,500	\$375	\$394	\$7.70
2. Remodeled barn					
@ \$2/sq. ft.	1500 sq. ft.	\$3,000	\$300	\$165	\$4.65
3. Remodeled barn					
@ \$1/sq. ft.	1500 sq. ft.	\$1,500	\$150	\$83	\$2.32
Fencing pasture					
@ \$10/rod	20 acres 240 rod of wire	\$2,400	\$240	\$132	\$3.72
Waterers, feeders, etc.		\$1,000	\$100	\$55	\$1.53
TOTAL (barn, fencing, waterers, feeders, etc.)					
1. New barn ¹		\$10,900	\$715	\$581	\$12.95
2. Remodeled barn		\$6,400	\$640	\$352	\$9.90
3. Minor remodeled		\$4,900	\$490	\$270	\$7.57

¹New barn amortized over a 20-year period, all other expenditures over a 10-year period.

Depending on barn costs, the initial capital costs for barn, fencing and equipment per ewe range from \$50 to \$110.

Investment in \$100 yearling ewes that produce for 6 years, that have a 4 percent annual mortality rate, and that are sold as slaughter ewes for \$20-\$25 per head carries an annual cost per ewe (actual or to oneself), at 10 percent interest, of \$5.85 interest and \$13.50 depreciation. This \$19.35 interest and depreciation cost for ewes, added to the \$10 to \$13 barn and equipment cost, results in about \$30 per ewe annual debt service cost or about one-third the total costs entailed in producing lambs. Further, it's a cost the producer has little influence over.

Factors influencing enterprise profitability

Gross returns are affected the most by number of lambs raised per ewe, average lamb weight, and lamb price per pound. When lambs are priced at \$60 per 100 lb., weaning 10 percent more lambs due to more prolific ewes and lower lamb mortality will increase income \$6 per ewe. Increasing average lamb selling weight 5 pounds, with 150 percent

weaning rate, will increase income \$4.50 per ewe. Increasing weaning rate can be accomplished at lower cost than increasing lamb weight.

A \$10 change in ewe costs and a 1 percent change in interest costs per ewe influence lamb production costs \$2.50 and \$1.00 per ewe, respectively. Capital costs invested in barn and facilities, ram cost per ewe and feed costs per ewe also have major effects on profit. One's net profit can be altered by either increasing the value of product over production costs (more lambs, bigger lambs and higher prices) or by reducing production expenses (lower feed costs, less debt service costs) to a greater extent than the value of the reduction in production. On many farms production cost can be reduced without affecting production.

Feeding the flock

Feeding the ewe adequately and relatively inexpensively can be accomplished by adhering to a few cardinal rules. Acquire and apply basic knowledge about the nutrient content of the feeds you intend to feed and the nutrient requirements of the sheep. These requirements are listed below.

1. Total digestible nutrients (TDN), expressed as a percent, is a common way of equating the energy value of widely diverse feeds, enabling a comparison in feed value among corn, cabbages, silage, stale bread, hays, etc. Without a measurement common to all feedstuffs, the task would be difficult
2. Protein, the second major nutrient required by all animals, is measured as a percent, and values can be compared directly among feedstuffs.
3. Since sheep are ruminants, the bacteria in their rumen synthesize B vitamins and essential amino acids for them. The sun provides their vitamin D requirements, and the fact that they eat green forage means that their intakes of vitamins A and E are usually adequate.
4. A sheep's mineral requirements must be provided by feeds eaten. The mineral content of the feeds is largely determined by the plant species, and particularly by the mineral content of the soil where they grow. Since sheep are often fed high forage diets that are relatively high in calcium and low in phosphorus, the trace mineral requirements and phosphorus needs of ewes can easily be provided by access to a 2:1 mixture of trace mineral salt and dicalcium phosphate.
5. The ewes' nutrient requirements and the type of feeds fed ewes are normally entirely different from those for lambs. Furthermore, the ewes' requirements are influenced greatly by production stage (lactation vs. maintenance), whereas the lamb is in but one stage – growth.
6. Feeding ewes more than they need (they would like to eat twice as much as they need) and allowing sheep to waste good feed are major causes of high production costs.

From the above remarks and the material in the tables that follow, it can be concluded that mastering enough knowledge about feeding sheep adequately and inexpensively is

not very difficult More detailed information is available in Minnesota Extension Service publication AG-FO-0646, "Strategies for Feeding the Ewe Flock."

Relative Nutrient Content of Feeds, %

Feed	DM	Based on 90% dry matter			
		TDN	Protein	Calcium	Phosphorus
Alfalfa hay	88	50	16	1.2	.20
Grass hay	88	50	10	.35	.20
Corn silage	35	63	7	.20	.14
Corn	88	80	9	.02	.31
Barley	88	78	12	.08	.41
Oats	88	70	12	.10	.34
Soybean meal	90	72	44-48	.32	.68

Sheep health

Sheep are no more prone to health problems than cattle or swine. We mistakenly think "they can get sick only once." Because of their low value per head, we seldom seek out professional help.

The major causes of lamb mortality are: 1) starvation due to poor mothering or low milk production, possibly due to poor ewe nutrition or mastitis; 2) pneumonia exacerbated by inadequate colostrum and milk intake and poor barn ventilation; 3) enterotoxemia, or overeating disease, which can largely be prevented by vaccination; and, less frequently, 4) coccidiosis caused by ubiquitous protozoa associated with stress and contaminated feed and water, 5) muscular dystrophy, or white muscle disease, due to inadequate vitamin E and selenium; 6) rectal prolapse which is associated with fat lambs fed high grain diets and/or some growth promotants; and 7) urinary calculi, a disease associated with male lambs fed high grain diets that provide an excess of phosphorus in relation to calcium.

Nutrient requirements of ewes

Production stage	Days	Daily gain/lb.	TDN/lb.	Protein/lb.
Early gestation	100	.05	1.7	.3
Late gestation	30	.50	2.7	.4
Lactation	60	.05	3.7	.8

Aside from diseases common to all farm animals, four maladies afflict the ewe flock:

1. Pregnancy disease, restricted to ewes carrying multiple fetuses during the last 4-6 weeks of gestation. Feeding so as to increase ewe body weight during late pregnancy will largely prevent it.
2. Listeriosis, caused by bacteria that grow in ill-packed or spoiled silage.
3. Abortion due to a systemic infection (Campylobacter, chlamydia or toxoplasmosis).
4. Footrot, which is caused by soilborne bacteria and bacteria that occur on the sheep's hoof. The cure is difficult at best. Prevention is the best method of control.

Housing, fencing and equipment

During lambing, about 15 square feet of barn space per ewe is required. At other times, 8 to 10 square feet per ewe is adequate. Season of lambing determines how good the barn must be. A barn that is well ventilated, draft free and that provides an ambient temperature of 40° F is adequate for winter-born lambs. A less costly barn would suffice for spring-born lambs. Shearing the ewe prior to lambing will make for a much warmer and drier barn.

Feed bunks should provide at least 14-18 inches of space per ewe. Metal feeders can be purchased for about \$10 per ewe, or wooden feeders can be built for about \$5 per ewe. They should last 10-15 years. Minimum equipment to run a farm flock should include:

- | | |
|-------------------------------|---------------------------|
| 1. Drenching gun | 6. Foot trimmer |
| 2. Syringe for antibiotics | 7. Eartag pliers |
| 3. Lamb stomach tube for milk | 8. Paint branding irons |
| 4. Hand shears | 9. Docking-castrator tool |
| 5. Nipples for bottle feeding | 10. Rope halter |

Normally, woven wire is used as fencing. With development of efficient energizers, many producers are using 5- to 7-wire electric fences. This type of fencing can be constructed for about a third lower costs. For small yard fences woven wire is still preferred.

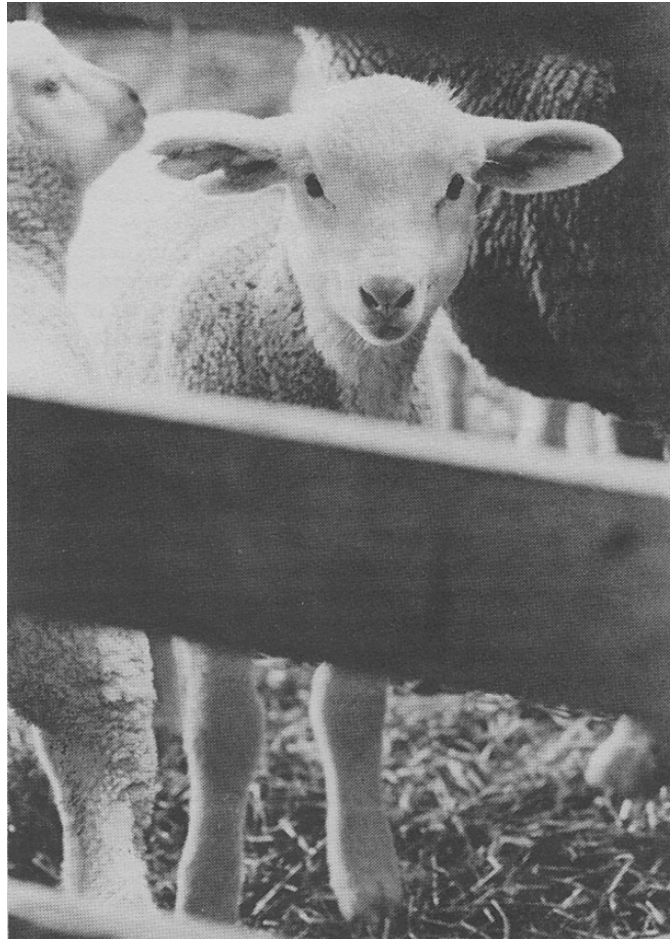
Sources for more information

In this brief treatment of various aspects of getting started in sheep production, many points have been omitted. How can additional hands-on knowledge be acquired?

1. Easily, your best source is a successful sheep producer who lives two miles down the road. Sheep producers like to help new producers.
2. Your county agricultural agent has, or can obtain for you, about 14 helpful sheep production bulletins. The agent can contact the sheep extension specialist and usually can find an answer to most problems.
3. Your veterinarian.
4. Various sheep publications.

Conclusion

Sheep may not have the charisma of a black baldy cow, but if you're more interested in making money than in bragging about your cow herd – choose sheep. A combination of genetically productive sheep, good shepherding and pride in accomplishment virtually guarantees profitability.



A lamb means money in the bank.