



## Sheep Production in Virginia

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Sheep possess an exceptional ability to convert a wide variety of noncompetitive feedstuffs (forage and crop residues) into high quality meat and fiber products for human use. Sheep enhance environmental quality and provide a sustainable means of production for millions of people throughout the world. Compared with beef cows, which may produce 60 to 70 percent of their live weight in offspring annually, ewes may produce 100 percent or more.

The topography, climate and forage resources of Virginia make it one of the best suited states in the east for sheep production. Moreover, Virginia is located in the largest lamb consumption region of the United States. The scope and size of the Virginia sheep industry has led to the establishment of competitive markets for both lamb and wool.

The most abundant natural resource on many Virginia farms is forage. Sheep are efficient converters of forage to meat and fiber and are capable of producing USDA Choice carcasses from forage alone. One animal unit of sheep (5 ewes) has the potential to produce over 750 lbs of market lambs annually. Sheep contribute significantly to the quality of pastures they graze. Many of the weeds commonly found in Virginia pastures are selectively grazed by sheep.

Companion grazing of sheep with other species of livestock, such as cattle or goats, results in greater pasture utilization and higher quality pastures than when a single species is grazed alone. Sheep prefer to graze hillsides and steep slopes and provide a means for improving forage utilization and fertility on areas not accessible to farm equipment.

Not including the price of land, the investment required for sheep production is low. Sheep are used as the primary enterprise on many small, part-time farms. Flocks of 25 to 200 ewes are common, and make an excellent enterprise on farms consisting of 50 acres or less. In many cases, sheep are used as a secondary enterprise on cattle farms. Studies have shown that one ewe can be added per existing cow unit without increas-

ing the forage resources already committed to cattle. Full-time farms treating sheep as the primary enterprise start at flocks of 500 ewes and up.

Historically, sheep production has been consistently profitable from one year to the next. Because of their ability to utilize forage as their primary source of energy, less risk is involved than where significant amounts of grain are required for other types of livestock production. The profitability of sheep production is closely tied to their ability to have more than one offspring per lambing. Budget analyses have shown that other than market price, the percentage of lamb crop marketed per ewe per year has the greatest impact on profitability of production.

### Production Systems

In Virginia, lamb sales account for approximately 90 percent of a producer's income from sheep production. Winter and spring lambing are the two most common production systems used in the State.

Lambs are born from late November through February with winter-lambing. Because lambing occurs during the winter, covered facilities are required during lambing for the protection of the ewes and their lambs. Lambs are weaned at 2 to 3 months of age, placed on a high-grain diet, and fed to reach market weight of 100 to 125 lbs at 3.5 to 6 months of age. Lambs are less susceptible to predation because they are fed in drylot or confinement. More ewes can be carried on a winter-lambing program because lambs are finished on grain rather than forage.

Lambs are born from March through early May with spring-lambing. Lambs go to market in late summer, fall and early winter as feeder lambs weighing 60 to 85 lbs or as slaughter lambs. Covered facilities are beneficial, but are not essential. Both barn-lambing and pasture-lambing are used in the spring. Unassisted lambing on pasture is practiced, but is not recommended because of the high lamb mortality rates that may occur. Flock lambing percentages are highest during the spring.

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Therefore, care must be taken to make sure ewes with multiple births claim all of their lambs. With spring-lambing, maximum use is made of spring, summer and fall pastures. In general, lamb prices are lowest in the fall when spring-born lambs are marketed. Yet, spring-lambing systems are consistently more profitable than winter-lambing systems because of the lower costs associated with the forage based program and the greater number of lambs born in the spring.

Lambs are born from September through early November with fall-lambing. Fall-lambing reduces the need for covered facilities, increases the utilization of high quality fall forages through lactating ewes, and provides producers more time to finish slaughter lambs for the traditionally high winter and spring markets. In practice, fall-lambing is difficult to accomplish because of the seasonality of breeding inherent in most breeds of sheep. By incorporating certain breeds of sheep into commercial crossbred ewes, spring-breeding success rates for fall-lambing can be improved. Pregnancy rates of 75 to 80 percent for fall-lambing are considered exceptional. Therefore, it is important to lamb the remainder of the flock in the winter so that open ewes are not carried over from one year to the next.

Lamb feeding in Virginia is considered a seasonal enterprise occurring primarily during the fall and winter months of the year. Feeder lambs, weighing 60 to 85 lbs are purchased starting in late August and continuing through November. Where surplus pasture, silage, and grain are available, many producers have found that lamb feeding yields an excellent return on investment. Most lamb feeders use a two-phase feeding program. Lambs are grazed on fall pastures, aftermath hay fields, and on fall annuals such as turnip or small grain pastures. Lambs failing to reach market weight during the grazing phase are supplemented with grain on forage or placed in a feedlot to be finished on a high-grain diet. Occasionally, feeder lambs will go directly to the feedlot to be finished to slaughter weight on an accelerated feeding program in 50 to 60 days.

### Starting With Sheep

Sheep are seasonal breeders. Most breeds and their crosses begin to cycle in late summer, and are most fer-

tile in the fall. On average, ewes exhibit heat every 17 days during the breeding season, stay in heat for 18 to 40 hours, and ovulate at the end of heat. The gestation period for sheep ranges from 140 to 159 days, with an average of 145 days. Available labor, barn space, weather, predators, lamb markets, and the amount and quality of feed and pasture should all be considered in determining the most appropriate lambing season. Fall and winter lambing are best suited for farms with a good winter supply of feed and suitable facilities, and for areas of the state with high summer temperatures. Spring-lambing is the preferred production system in the more mountainous parts of Virginia, and has been shown to be consistently more profitable than other systems of production.

Individuals having only limited or no experience with sheep should start with a flock no larger than 25 to 60 ewes. Before starting, read the available literature on sheep production and consult with an Extension agent or with producers who are currently raising sheep. Extension offices can provide publications on the care and management of sheep, as well as order forms for other sources of information. It is best if someone who has raised sheep can go along when the first sheep are purchased. Two important factors to consider before buying the first sheep are foot rot and predators. Foot rot is an infectious, contagious disease of sheep that causes severe lameness. Once in a flock, it is difficult to eliminate. The only way to introduce foot rot into a flock of sheep is to purchase sheep that are already infected. Therefore, care must be taken to only purchase breeding stock from sources that are known to be foot rot free. Sheep are highly susceptible to predation by dogs and coyotes. To prevent losses, it is important to develop strategies for the control of predation through the use of properly constructed boundary fence, guard dogs, etc. With the advent of high-tensile wire that can be electrified, inexpensive, but highly effective fences are being constructed for predator control. Existing fences can be modified by adding one to two strands of electrified high-tensile wire as a deterrent to predation.

Proper ewe and ram selection are critical to the success of a commercial sheep operation. Crossbred ewes are more available and are less expensive than purebred

**Table 1. Lamb Production Systems and Typical Marketing Seasons.**

<u>Production System</u>	<u>Time of Marketing</u>											
	<u>J</u>	<u>F</u>	<u>M</u>	<u>A</u>	<u>M</u>	<u>J</u>	<u>J</u>	<u>A</u>	<u>S</u>	<u>O</u>	<u>N</u>	<u>D</u>
Fall-Lambing (Sept. - Oct.)	██████████			██████████			██████████			██████████		
Winter-Lambing (Dec. - Feb.)	██████████			██████████			██████████			██████████		
Spring-Lambing (Mar. - May)	██████████			██████████			██████████			██████████		
Lamb Feeding	██████████			██████████			██████████			██████████		

**Table 2. Prominent Breeds and Crosses in Virginia.**

<b>Breed</b>	<b>Average Lambing Percentage Mature Ewes - Spring Lambing*</b>	<b>Out-of-Season Breeding Potential</b>
<b>Ram Breeds</b>		
Suffolk	160	Low
Hampshire	145	Low
Dorset	155	High
<b>Ewe Breeds</b>		
Dorset	155	High
Rambouillet	145	Moderate
Finnsheep & Romanov	250	Moderate
Polypay	190	Moderate
North Country Cheviot	155	Moderate
<b>Crossbred Ewes</b>		
Suffolk x Rambouillet (Western)	175	Moderate
Dorset x Rambouillet	175	High
Dorset x Finn	225	High
Suffolk x Hampshire	170	Low
1/4 Finn x Dorset or Rambouillet	190	High
1/4 Finn x 1/4 Dorset x 1/2 Western	190	Moderate

*\*Lambing percentages vary depending upon management and lambing season. These averages are based on research conducted by Virginia Tech and other research institutions.*

ewes. Crossbred ewes have higher lambing percentages, greater lamb survival, and wean more pounds of lamb than the average of the purebred ewes that make up the cross. There are more than 25 breeds of sheep commonly used for sheep production in the U.S. In Virginia, where the emphasis is on market lamb production, the most predominant breeds used for crossbreeding are Suffolk, Hampshire, Dorset, Rambouillet, and Finnsheep. Suffolk, Hampshire, and Dorset rams are used to sire a majority of the market lambs produced in the State.

Suffolk x Rambouillet crossbred ewes imported from southwest Texas, commonly referred to as “western ewes,” have been used in large numbers for commercial sheep production in Virginia. Typically, trailer loads of ewe lambs or yearling ewes are shipped to Virginia in the spring and early summer. Because no single farm can use a full-load of ewes, they are purchased by a group of producers and parceled out upon arrival. Western ewes have performed well under Virginia conditions and tend to stay in production longer than many native commercial ewes. Numerous farms in Virginia

are producing and selling commercial replacement ewes. Most of these crosses include Dorset and Finnsheep breeding, which result in moderate size ewes possessing the potential for out-of-season breeding and increased lambing percentages.

Sound, healthy, heavy muscled rams are required for the production of high quality market lambs. Lambs gain faster and reach heavier weights when sired by superior performance-tested rams. Performance-tested ram lambs are sold in August of each year at the Virginia Sheep Evaluation Station in Steeles Tavern. Rams may also be purchased from reputable consignment sales or directly from purebred breeders. Regardless of the source, rams should be free of foot rot and sold as guaranteed breeders. Black face ram lambs and yearling rams used for market lamb production should have a minimum weight per day of age of .90 and .60 lbs per day, respectively.

## **Markets**

An Extension agent or a representative of the Virginia Department of Agriculture and Consumer Services can best describe the various lamb and wool marketing options available to producers in different regions of the state. Options include cooperative marketing of lambs and wool, direct marketing of lambs and wool, and local livestock auctions for marketing lambs and cull breeding stock. To be successful, producers must research their marketing options, plan their marketing strategies, and at all times, know the prevailing market prices being paid for lambs and wool.

Light weight lambs may be marketed for feeder production or may be slaughtered for the ethnic market, which prefers smaller lambs. Budget analyses have shown that the production of slaughter lambs weighing 110 to 125 lbs generates more income than the production of lighter lambs. However, if significantly higher prices can be attained for lighter lambs compared to heavier lambs, the difference in gross value may be similar. Fall- and winter-born lambs should be marketed no later than early May. Spring-born lambs should be marketed during late fall and winter. All lambs should be marketed before turning one year of age. Otherwise, they will be classified as yearling mutton and marketed at substantial discounts.

Over 90 percent of the wool marketed in Virginia is sold cooperatively through the Virginia Wool Pool Program. This marketing system has consistently brought producers some of the top prices in the country for medium quality wool. All producers in Virginia are eligible to participate in the sale. Every February, consignments are taken at the local Extension Offices. The State Sale is held in April or May, while the wool is still on the farm. The wool is delivered to take-up points located at nine locations throughout the state from June through August.

## **Additional Recommended Reading:**

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*Virginia Fall Lambing Budget,*

Virginia Cooperative Extension Publication  
410-013

*Virginia Winter Lambing Budget,*

Virginia Cooperative Extension Publication  
410-012

*Virginia Spring Lambing Budget,*

Virginia Cooperative Extension Publication  
410-011

*Virginia Lamb Feeding Budget,* Virginia Cooperative Extension Publication 410-010

*Sheep Management Schedule,*

Virginia Cooperative Extension Publication  
410-365

*Sheep Grazing Management,*

Virginia Cooperative Extension Publication  
410-366

*Feeding Sheep,*

Virginia Cooperative Extension Publication  
410-853

*Finishing Lambs With Whole Grain,*

Virginia Cooperative Extension Publication  
410-024

*Control of Internal Parasites in Sheep,*

Virginia Cooperative Extension Publication  
410-027

*Control, Treatment, and Elimination of Foot Rot from Sheep,*

Virginia Cooperative Extension Publication  
410-028

*Sheep Housing and Equipment Handbook,* MWPS-3, MidWest Plan Service, 122 Davidson Hall, Iowa State University, Ames, IA, 50011-3080, (515)294-4337

*Nutrient Requirements of Sheep, Sixth Revised Edition, 1985,* National Academy Press, 2101

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