



Profitable Sheep Production Through Spring Lambing

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Lambing in the spring capitalizes on the reproductive efficiency of a spring-lambing flock and takes advantage of spring, summer, and fall forages for lamb production. Spring lambing reduces the capital outlay required for labor, facilities, and purchased feeds. Studies comparing fall-lambing, winter-lambing, and spring-lambing production systems found spring lambing to consistently be the most profitable production system of the three. The higher profitability of spring lambing is attributed primarily to improvements in ewe fertility and prolificacy. Because of the seasonality of breeding inherent in most breeds of sheep, fewer ewes lamb in the fall and winter, with fewer lambs born per ewe lambing.

Spring lambing occurs during the months of March, April, and May. Lambs graze with their dams in the spring and throughout most of the summer. After weaning, lambs remain on pasture until marketed as slaughter lambs or feeder lambs in the late summer and fall. Grazing management, internal parasite control, predator control, and lamb marketing strategies are key elements essential to a successful spring-lambing program. The purpose of this publication is to describe the management and marketing practices that are used to enhance the general well-being and overall profitability of a sheep flock on a spring-lambing program.

Lamb Production

The production of feeder lambs, lambs for ethnic markets, and slaughter lambs are all viable options for a spring-lambing program. Feeder lambs are marketed at weights of 60 to 80 lbs in the fall to be finished to slaughter weight by lamb feeders using a variety of forage and grain feeding techniques. Feeder lambs should possess the genetic potential to reach weights of 120 to 125 lbs with .3 inches of backfat or less. Lambs produced for ethnic markets weigh 40 to 80 lbs and are expected to carry a uniform, but low, degree of outside

fat cover at the time of marketing. Some grain supplementation is usually required to produce the high quality lamb carcasses demanded by the ethnic markets. Slaughter lambs should weigh at least 100 lbs when marketed and possess the potential to grade a minimum of USDA Choice. Slaughter lambs may be marketed directly off forage, but they usually require some grain supplementation before slaughter. Lambs may be finished to slaughter weight in the fall by using a combination of resources such as fall permanent pastures, aftermath hay fields, fall annual forage crops, grain supplementation on forage, and feedlot finishing on high grain diets. 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.

Breeding Stock

Crossbred ewes are recommended for commercial spring-lambing flocks. Because of hybrid vigor, crossbred ewes wean more pounds of lamb than the average of the purebred ewes that make up the cross. Numerous breeds and their crosses are available. Breeds commonly used in commercial spring-lambing flocks include Suffolk, Dorset, Hampshire, and Rambouillet. Unless producers have the time and facilities required for artificial rearing, the incorporation of highly prolific breeds of sheep, such as Finnsheep and Romanov, into crossbred spring-lambing ewes should be avoided. Ewes have their highest lambing percentages in the spring. Therefore, breeding programs that further enhance prolificacy create a management hardship in the form of excessive triplet and quadruplet births. Suffolk x Rambouillet crossbred ewes imported to Virginia from southwest Texas, commonly referred to as "western ewes," have been used extensively for

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spring lambing. When managed properly, western ewes have the potential to produce a 170 percent or greater lamb crop in the spring. A three-year research study conducted in Virginia showed 9 percent of western ewes having triplet-born lambs in the spring compared to 38 percent triplet-born lambs from 1/4 Finnsheep x 3/4 western ewes. Although the breed has been used very little in Virginia, the conditions under which the North Country Cheviot was developed make it a potentially attractive breed for spring lambing. Their lambs are vigorous at birth, and the ewes reportedly make good mothers.

The breed of ram used for spring-lambing flocks depends on the type of lamb marketed. Lambs expected to reach slaughter weights of 120 to 125 lbs should be sired by heavy muscled Suffolk, Hampshire, or Suffolk x Hampshire rams. Lambs produced for ethnic markets or lambs expected to reach slaughter weight at 100 to 110 lbs should be sired by rams of earlier maturing breeds such as Dorset or Cheviot. Attempts to finish lambs on forage alone should be limited to lambs sired by rams of earlier maturing breeds. Lambs sired by rams of later maturing breeds will not consistently produce an adequate degree of finish from forage alone, even when carried to heavier market weights.

Breeding Management

Sheep are seasonal breeders. Most breeds and their crosses begin to cycle in late summer and show their highest fertility in the fall. On average, ewes exhibit heat every 17 days during the breeding season. The gestation period (length of pregnancy) for sheep ranges from 143 to 150 days. All lambs should be weaned by the start of the breeding season. Ewes and rams should have a moderate degree of condition before breeding. Starting two weeks before breeding and continuing two weeks into the breeding season, ewes should be flushed by feeding one pound of whole corn or barley per head daily. The practice of flushing improves lambing percentages by 10 to 15 percent.

For lambing to start on March 1, the rams need to be turned in with the breeding flock on October 7. A ram to ewe ratio of 1:25 for rams under one year of age and 1:35 for yearling rams and older is generally recommended. To monitor breeding activity, rams should be equipped with a marking harness. The crayons should be checked for wear every 2 days, and the color of the crayon should be changed once every 17 days. A large proportion of ewes that are two years old and older should be marked within the first 17 days of breeding. If not, care should be taken to evaluate the health and nutritional status of the rams and ewes in the breeding flock. Recording breeding dates after the ewes are marked provides useful information for planning,

sorting, and feeding at lambing time.

Lambing Management

Starting six weeks before lambing, ewes should be supplemented with .5 lb of whole corn per head daily for the prevention of pregnancy disease. At four weeks before lambing, grain supplementation should be increased to one pound per ewe daily and ewes should be vaccinated for overeating disease and tetanus. These vaccines provide immunity to baby lambs through the ewes' colostrum until they can be vaccinated at 4 to 6 weeks of age. Shearing the ewe flock 3 to 4 weeks before lambing results in a cleaner, higher quality wool clip, causes ewes to seek shelter at the time of lambing, and creates a healthier environment for new-born lambs. Shelter must be available for at least one week after shearing to protect shorn ewes from freezing precipitation. Also, shorn ewes require additional feed during periods of low environmental temperatures.

Barn-lambing, pasture-lambing, and, most commonly, a combination of barn- and pasture-lambing are used in the spring. Both assisted- and unassisted-lambings are practiced in Virginia. Assisted-lambing involves frequent observation of the flock at lambing time and the movement of ewes and their lambs to individual pens after lambing. Weather permitting, ewes with single lambs and ewes with strong, well-claimed twin lambs spend little, if any, time in the lambing pens. Assisted lambing establishes the milking status of the ewe and the general health and well-being of her lambs. The major goal of assisted lambing is to minimize lamb death loss. Unassisted-lambing generally occurs during late spring when weather is less of a factor and is used on farms where few facilities are available for lambing and labor is limited. Ewes are left to lamb on pasture with a minimum of assistance provided. Because flock lambing percentages are highest during the spring, lamb mortality rates are greater with unassisted lambing. For this reason, unassisted-lambing is discouraged. Budget analyses have shown that other than market price, the percentage of lamb crop marketed annually has the greatest impact on profitability of production. Therefore, it is to the producers' advantage to provide assistance whenever possible.

Grazing Management

Spring lambing gives producers the opportunity to take full advantage of the inexpensive gains attained from grazing lambs on spring, summer, and fall forages. Lambs born in March, April, and May graze with their dams in the spring and throughout most of the summer. Research conducted in Virginia has shown clearly that lambs gain approximately .15 lb more per

day when left on the ewe through late August versus weaning in July and grazing ewes and lambs separately. After weaning, lambs are left on pasture until they are marketed as slaughter lambs or feeder lambs. Retention of feeder lambs to graze fall pastures, aftermath hay fields, or fall and winter annuals before moving them to a feedlot for grain finishing is consistently more profitable than marketing lambs as feeders in the late summer and fall.

After lambing in the spring, lactating ewes are set-stocked (not-rotated) at the rate of four to six ewes and their lambs per acre until mid- to late June. Set-stocking gives ewes and their lambs the opportunity to be more selective in their grazing behavior, which promotes more desirable levels of milk production and greater lamb gains. Set-stocking at relatively high stocking rates in the spring helps to control the spring flush in forage production, while allowing approximately one-third of the spring pasture to be fenced off for hay production. Rotational grazing programs designed for the movement of sheep every 10 to 14 days are instituted in late June and July to improve both pasture and lamb production. More intensive rotational grazing systems, in which higher stocking densities are used, promote more complete forage utilization, but they also require greater input costs in the form of fence and water. They also may result in higher levels of internal parasitism, increased risk of coccidiosis, and impaired lamb performance.

For improved late-summer performance, spring-born lambs should be sheared by early July. In a Virginia study, average daily gain was .05 lb greater for shorn versus wooled lambs over a 90-day grazing period during the summer and early fall. Even though shorn and wooled lambs were slaughtered at the same live weights, shorn lambs had higher carcass dressing percentages and a more desirable fat cover than carcasses from wooled lambs. An economic analysis taking into account the additional costs of shearing still showed a clear advantage for summer shearing of spring-born lambs.

Lamb gains are not uniform throughout the grazing season. In general, lamb gains exceed .60 lb per day in the spring, average approximately .30 lb per day in July and August, and are approximately .40 lb per day in the fall. In late summer and fall, lamb gains can be improved by .15 lb per day by supplementing one pound of corn or barley per lamb daily. Depending upon the time of marketing, these additional gains may or may not be cost effective.

Internal Parasite Control

Internal parasitism can dramatically affect grazing lamb performance on spring, summer, and fall pastures,

and it is a common cause of lamb deaths. Contrary to statements that rotational grazing helps control internal parasites, research has clearly demonstrated that internal parasite larvae are capable of surviving on pasture for more than a year. Therefore, most short-duration rotational grazing programs (rest periods of 15 to 30 days) are not beneficial for the control of internal parasites; in fact, such programs may make the problem worse. An effective internal parasite control program should not rely solely on the use of anthelmintics. Use of drugs as the only method of control often results in an increased incidence of internal parasite resistance. Whenever possible, sheep should be placed on “clean pastures” to slow the rate of reinfection. Examples of clean pastures include: 1) fields that have been without sheep for more than a year; 2) fields that were cut for hay since sheep last grazed there; and 3) fields that were grazed by cattle before sheep are allowed to graze. Critical times for treating sheep for internal parasites are: 1) for ewes, three weeks before lambing, or, at the very least, right after lambing; 2) for ewes, every 8 weeks during the grazing season; and 3) for lambs, every 3 to 4 weeks during the grazing season. Treatment dates should be marked on a calendar to reduce the risk of losing sheep from a failure to treat on time. Underdosing of anthelmintics results in accelerated rates of resistance by internal parasites. Because anthelmintics are administered on the basis of body weight, it is important to weigh a representative sample of the sheep being treated so that proper dosage rates can be calculated.

Predator Control

The risk of predation is greater with production systems that have pasture-lambing and (or) lamb grazing components. Winter-born lambs usually remain in drylot or confinement through marketing and, as a result, are less susceptible to predation. For this reason, a number of producers use winter lambing as a tool to minimize their losses from predation. Sound predator-control strategies must be developed and in place for farms with a spring-lambing program. Predisposing factors to losses from predation include: 1) poor fences; 2) failure to monitor the flock frequently at lambing time; 3) failure to locate and remove dead lambs from the lambing pasture; and 4) failure to remove and treat sick or weak lambs. The two primary predators in Virginia are dogs and coyotes. Losses from dogs or coyotes can usually, but not always, be distinguished based on the method of attack. Coyotes kill one to three animals at a time, and they typically kill their prey by grasping them in the neck or throat region. Most dogs kill for recreation, not for food. Their attacks are unpredictable and often devastating. Wounds are

located on the hind legs, head, or behind the shoulders. Dogs may attack singly, but they usually attack in groups. Losses from a single attack by dogs are greater than that by coyotes. However, over time, predation losses from coyotes can be large.

Producers should work with their Extension agents and (or) an employee of USDA Animal Damage Control to develop strategies that prevent predation by coyotes and dogs. Typically, measures that prevent coyote predation will also control dogs. The importance of properly constructed fence cannot be overstated as a tool for protecting sheep from dog and coyote predation. Highly effective, safe, and inexpensive electric fencing systems have made fencing for predator control more practical. High-tensile, smooth-wire electric fence is cheaper and easier to construct than most traditional types of fences. Electrified boundary fence is one of the most effective tools for predator control, and it provides an opportunity to tie in temporary electric fence to facilitate pasture subdivision. Boundary fence for sheep should consist of at least five strands of electrified high-tensile wire, with wire spacings from the ground up of 6", 6", 8", 10", and 12". Other forms of control include: 1) housing sheep at night; 2) creating a number of "safe pastures"; and 3) use of guard animals such as dogs, llamas, or donkeys. Producers experiencing losses from coyote predation should contact Animal Damage Control immediately for additional assistance in controlling offending animals.

Lamb Marketing Strategies

Most lambs produced from spring-lambing programs are marketed as feeder or slaughter lambs. In general, the production of feeder lambs will not generate as much income as the production of slaughter lambs. However, when managed properly, feeder lamb production still returns a consistent year to year profit for producers. Feeder lamb production is particularly attractive to new producers. After lambing, the only major management input that remains until marketing is the control of internal parasites. With feeder lamb production, profitability is highly dependent upon the percentage of lamb crop marketed. A goal of marketing a 150 percent lamb crop is not unrealistic and assures a breakeven price for producers of approximately \$.42/lb. In general, heavier lambs at the time of marketing compensate for a lower percentage lamb crop marketed and contribute to higher levels of

profitability (Table 1). Another factor to consider when marketing spring-born lambs is the historically low lamb market in September and October of each year. If possible, producers should avoid marketing lambs during this period. Leaving lambs on fall pasture, grazing aftermath hay fields, or supplementing grain on pasture during the fall are all strategies that can be used to delay the time of marketing. After all available forage resources are depleted, lambs are placed in a feedlot to be fed to heavier weights using a whole-grain feeding program.

Table 1. Breakeven prices in dollars per hundredweight based on an annual ewe maintenance cost of \$50 and the additional costs of feeding lambs to heavier weights.

| Lamb Live Weight (Pounds) At Marketing | | | |
|---|---------|---------|---------|
| % Lamb Crop Marketed | 80 | 100 | 120 |
| 100 % | \$62.50 | \$53.20 | \$51.33 |
| 125 % | \$50.00 | \$43.20 | \$43.00 |
| 150 % | \$41.65 | \$36.53 | \$37.44 |

Additional Recommended Reading:

Virginia Spring Lambing Budget, Virginia Cooperative Extension Publication 410-011

Virginia Winter Lambing Budget, Virginia Cooperative Extension Publication 410-012

Sheep Management Schedule, Virginia Cooperative Extension Publication 410-365

Sheep Grazing Management, Virginia Cooperative Extension Publication 410-366

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

Finishing Lambs With Whole Grain, Virginia Cooperative Extension Publication 410-024