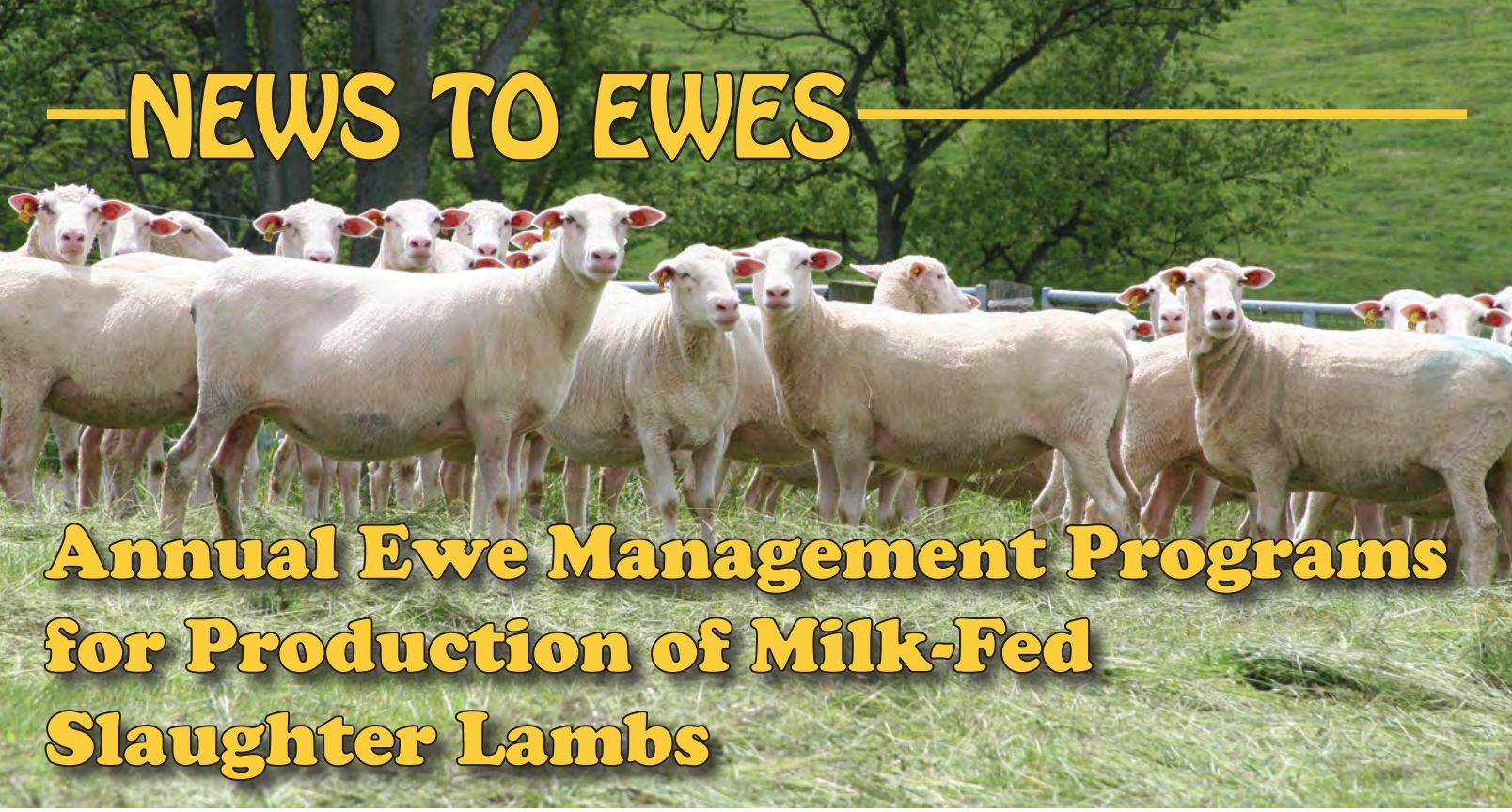

Annual Ewe Management Programs for Production of Milk-Fed Slaughter Lambs

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Introduction

Lambs that are harvested (slaughtered) for highest quality meat contain maximum amounts of lean, optimum amounts of fat, and constant amounts of bone. They are usually labeled as **"milk-fed slaughter lambs"** and are 3 to 7 months of age when marketed. Lambs are marketed directly "off the ewe" or they can be weaned at 60 to 90 days of age and finished to 100 to 120 lb either in confinement (drylot) or from pasture plus supplemented concentrates. Even though weaned lambs have not consumed any milk since they were 60 to 90 days old, they are classified as milk-fed because they will produce carcasses similar to lambs marketed directly off the ewes. All of these lambs meet the **"ideal lean lamb"** standards of the American sheep industry because carcasses will have 0.1 to 0.2 inches of backfat, less than 3.5% kidney, heart, and pelvic fat, at least 2.5 sq. in. of loin eye area per 50 lb of carcass, and have a yield grade between 2 and 3. They command a high price per pound at marketing time.

Production systems available for producing ideal milk-fed slaughter lambs are **January/February lambing (winter)**, **April lambing (spring)**, and **September/October lambing (fall)**. The annual ewe management to produce these lambs is divided into production stages, beginning with nutritional flushing. This is followed by the breeding season, gestation (early and late), parturition (lambing), lactation, post-weaning, and maintenance.

The Production Systems

January and February have been the traditional lambing months for many years. The production stages and inclusive dates (approximate) are shown in Table 1. In general, ewes in the **January/February lambing system (winter)** are bred during a 7-week breeding season and have an average lambing date of January 23. Lambs are weaned on March 24 at an

Breeding

Gestation

Lactation

Maintenance

average of 60 days of age.

After weaning, ewes undergo a 10-day period of reduced feed to allow for udder involution. Then, they are turned to pasture where they are managed at maintenance levels (weight gain is minimal) until the next nutritional flushing period that begins on August 1. Lambs remain in confinement if ewes and lambs were managed in confinement for the 60-day lactation period. These lambs are self-fed a 90% concentrate 10% roughage diet until they are marketed before July 1 weighing 100 to 120 lb each. If ewes and lambs have access to pasture during lactation, lambs are weaned to pasture and self-fed an all-concentrate supplement until marketing before July 1 at 100 to 120 lb. Lambs finished in confinement for market usually gain faster than those finished from pasture and concentrate.

April lambing (spring) has evolved as a viable production system as the numbers of "hair" sheep have increased in the farm flock states east of the Mississippi River. Table 2 shows the production stages and approximate inclusive dates in the spring lambing system. Ewes in this system are bred during a 21-day breeding season. The normal breeding season for most ewes is in the fall (October/November). Estrous activity is still high in late November and early December. Therefore, a 95%, or higher, pregnancy rate is a typical outcome of this 3-week breeding season compared with a similar pregnancy rate from a 7-week breeding season (Table 1) in the winter lambing system. Ewes may lamb outside on pasture, in a lot adjacent to a barn, or pregnant ewes come into a barn immediately before the lambing season begins, but are moved to pasture as lambs become a week old. Similar to winter lambing, lambs are weaned at 60 days of age. While winter-born lambs may be finished to 100 to 120 lb in confinement or on pasture plus a self-fed, all-concentrate supplement, April-born lambs are weaned to pasture plus a concentrate supplement fed daily at 2% of average lamb body weights. After a 10-day udder involution period following weaning, ewes enter a 132-day maintenance period until the next November 1. Post-weaning growth of April-borns will be less than winter-born lambs because they may not have the genetic capability for fastest gains (white-face, maternal breeds) and/or they are produced primarily from forage rather than concentrates. April-born lambs should reach market weights of 100 to 120 lb in October and November.

Table 1. Production Stages for a January/February Lambing System (Winter)

Stage	Dates[a]	No. Days
Flushing	Aug. 1 to Aug. 15	14
Breeding	Aug. 15 to Oct. 7	53
Early Gestation	Aug. 29 to Dec. 26	119
Late Gestation	Dec. 26 to Jan. 23	28
Avg. Lambing Date	Jan. 23	
Lactation	Jan. 23 to Mar. 24	60
Post-Weaning	Mar. 24 to Apr. 3	10
Maintenance	Apr. 3 to Aug. 1	120

[a]Approximate dates based on January/February lambing system.

Table 2. Production Stages for an April Lambing System (Spring)

Stage	Dates[a]	No. Days
Flushing	Nov. 1 to Nov. 15	14
Breeding	Nov. 15 to Dec. 6	21
Early Gestation	Nov. 17 to Mar. 16	119
Late Gestation	Mar. 16 to Apr. 13	28
Avg. Lambing Date	Apr. 13	
Lactation	Apr. 13 to June 12	60
Post-Weaning	June 12 to June 22	10
Maintenance	June 22 to Nov. 1	132

[a]Approximate dates based on April lambing system.

Table 3. Production Stages for a September/October Lambing System (Fall)

Stage	Dates[a]	No. Days
Flushing	Apr. 16 to Apr. 30	14
Breeding	Apr. 30 to May 31	31
Early Gestation	May 20 to Sep. 16	119
Late Gestation	Sep. 16 to Oct. 14	28
Avg. Lambing Date	Oct. 14	
Lactation	Oct. 14 to Dec. 13	60
Post-Weaning	Dec. 13 to Dec. 23	10
Maintenance	Dec. 23 to Apr. 16	14

[a]Approximate dates based on September/October lambing system.

The production stages and dates in the **September/October lambing (fall lambing)** system are shown in Table 3. This system is unique, compared with winter and spring, in that it requires ewes to breed outside the normal fall breeding season. Theoretically, there are ewes of only three major breeds that are sexually active during the spring (March/April/May) – Rambouillet, Merino, and Dorset (Horned and Polled). Although some success in conception rates can be obtained with other breeds, like the Polypay, Dorper, White Dorper and Katahdin, pregnancy rates from an April 30 to May 31 breeding season may only be 30 to 60%. However, not all is lost with this pregnancy rate because ewes that don't conceive in May can be given another chance to become pregnant during an August 15 to October 7 breeding season so they can lamb in January/February (winter). Fall lambing allows for lambs to be born during near ideal weather conditions (mild temperatures, low humidity, and limited rainfall). If

News to Ewes continued from pg. 23

lambing on pasture is an objective, this is the season to do it. Ewes and lambs can be maintained in confinement or they can graze stockpiled forage. After weaning at 60 days (December 13), lambs are self-fed a high-concentrate diet in confinement or supplemented with an all-concentrate diet while grazing winter pasture until marketing at 100 to 120 lb in late February and early March. Concurrently, ewes are fed a maintenance diet of low-quality, inexpensive roughage throughout the winter.

April vs. January/February and September/October Lambing

Lambing in April takes advantage of the normal, seasonal reproduction in ewes (Figure 1). Ewes of most breeds are in anestrus in March/April/May and begin to become sexually active, with regular occurring heat periods, as the length of daylight hours decrease after June 22.

Therefore, breeding ewes from November 15 to December 6 most closely coincides with their natural breeding season. A breeding season from August 15 to October 7, for January/February lambing, is on the forward fringe of the normal breeding season. Therefore, it takes longer to obtain an acceptable pregnancy rate in the winter lambing system. Attempts to breed ewes in May, for September/October lambs, will be unsuccessful unless they have the genetic capability to breed out-of-season.

Lambing in April also synchronizes the sheep production cycle with forage production (Figure 2). With an average lambing date of April 13, lactating ewes and their lambs can have access to maximum production of cool season forages in April/May/June. Although these ewes need to be supplemented with at least 1.0 lb of grain (corn, milo, barley, oats) or grain mix per head daily and lambs must be creep-fed for maximum growth to weaning, the bulk of the nutrients required during lactation (Figure 3) can be supplied by cool season forage. In contrast, lambing in January/February (Table 1), and weaning lambs in March, misses the peak forage production (Figure 2) and requires the bulk of nutrients be supplied to both ewes and lambs by harvested feeds (corn, hay, soybean meal, etc.). Ewes that lamb in September/October (Table 3) also miss the peak forage production, but some of their nutrient requirements can be supplied by stockpiled cool season forages in October and November. Therefore, ewes and lambs in the April lambing system are the

Figure 1. Monthly Estrous Activity of the Ewe

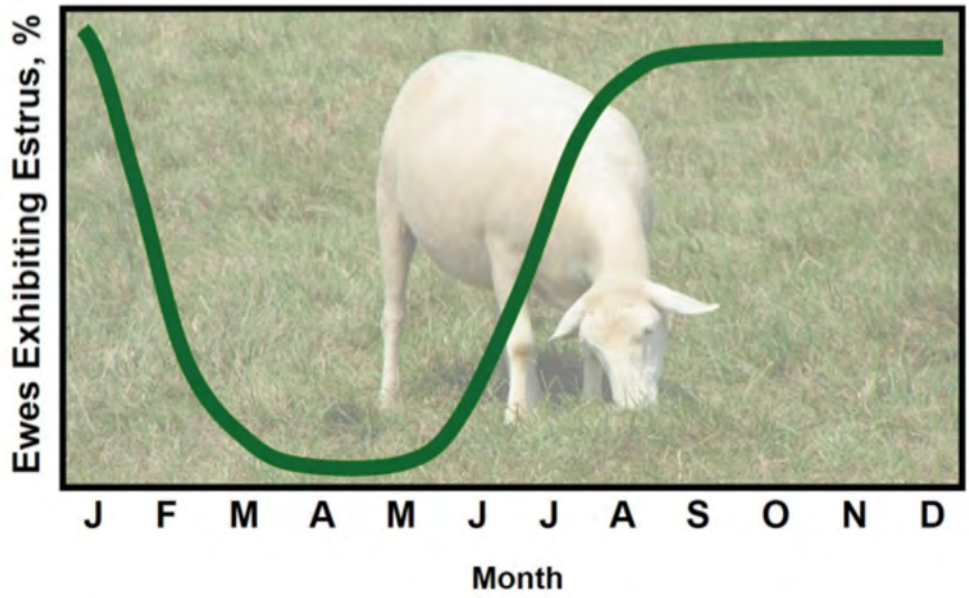


Figure 2. Annual Cool Season Forage Production

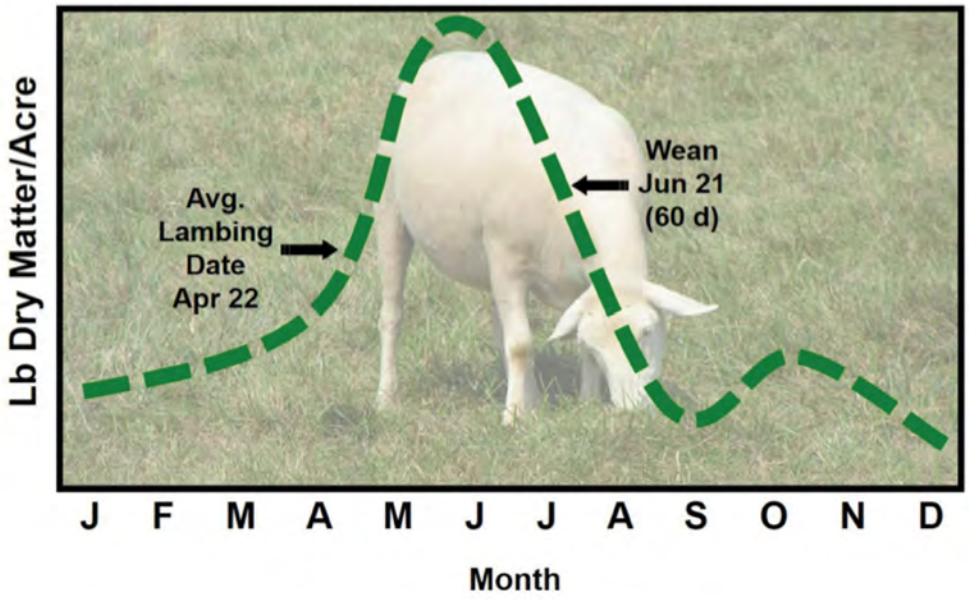


Figure 3. Annual Nutritional Requirements of Ewes (April Lambing)

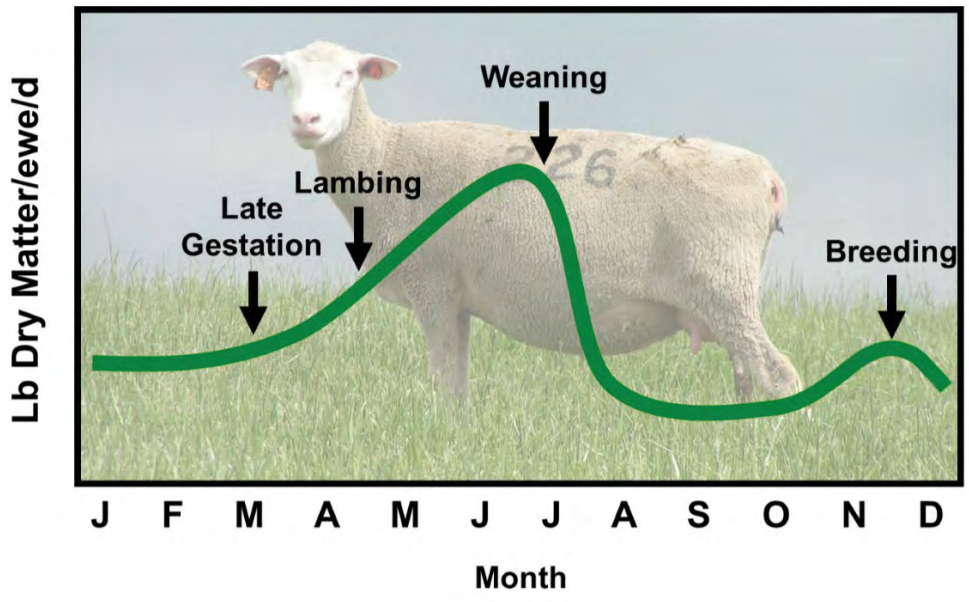
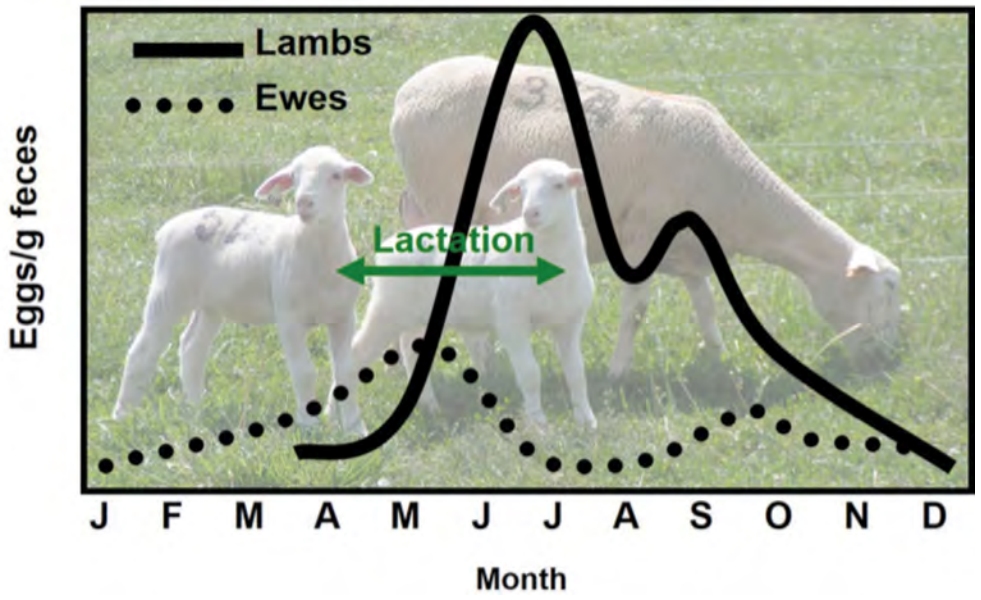


Figure 4. Stomach Worm Epidemiology



forage harvesting equipment during the spring as well as the rest of the year. Even though they may be in the barn for a short lambing season, they will spend about 330 days during the annual production year on pasture. Ewes that lamb in January/February or September/October are usually managed in confinement during late gestation and lactation, but they are still managed on pasture for 275 to 280 days of each production year. However, most of these days are spent at maintenance, whereas April lambing ewes use forage for lactation, along with gestation and maintenance.

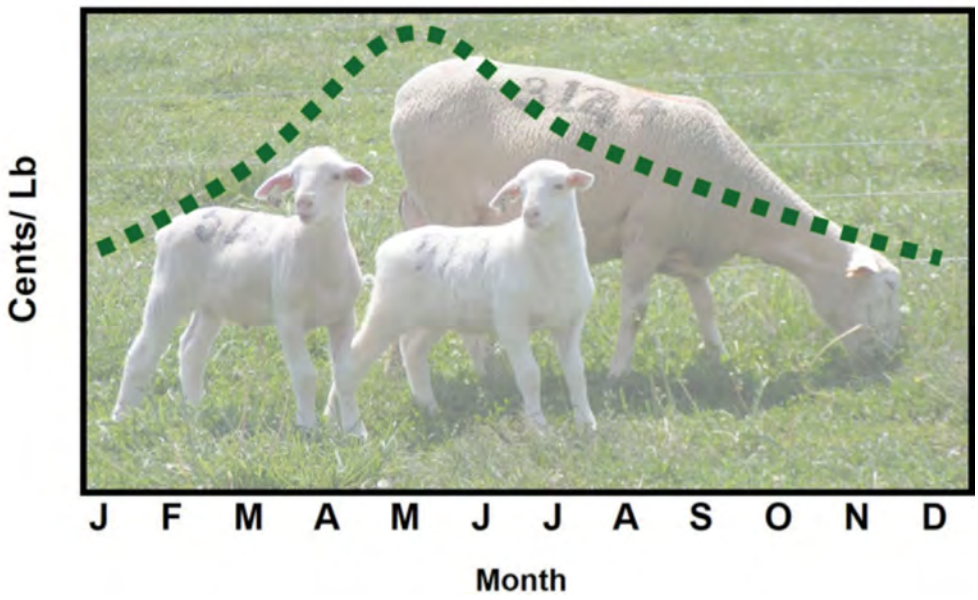
April-born lambs encounter significant stomach worm infestations while nursing ewes (Figure 4) that are maximizing use of cool season forage (Figure 2) to meet most of their nutrient requirements (Figure 3). **Unfortunately, ewes are the primary infestors of their lambs with stomach worms (Figure 4).** Lambs born in January/February usually do not encounter worm infestations before marketing, either because they are raised in confinement or they are weaned to pastures that should be relatively free of stomach worms (have not been grazed by ewes in spring) and are provided an all-concentrate supplement. Similarly, lambs born in September/October typically do not encounter stomach worm infestations because they may be raised in confinement. If fall ewes and lambs graze stockpiled cool season forage, the stomach worm concentrations will be decreasing as winter approaches (Figure 4). After weaning on December 13 (Table 3), fall lambs should be relatively free of any stomach worms until marketing in late February/early March.

Traditionally, highest prices for 100- to 120-lb, milk-fed slaughter lambs has been in April, May, and June. This tradition was developed when lambs were born only in January/February. Figure 5, on page 26, shows this to still be true, but the difference in prices received during these months versus the other months of the year are becoming smaller. The main reasons for this difference are the advent of more spring lambings and the marketing of lighter weight slaughter lambs. Still, January/February 100- to 120-lb, milk-fed slaughter lambs command high prices when marketed in April/May/June. Lambs born in April and sold at 100- to 120-lb in October/November typically receive lower prices (Figure 5), whereas those born in September/October and marketed in late February/early March catch the market on the way up towards the peak in April/May/June.

A comparison of April lambing with January/February or September/October shows that breeding and lambing periods are more condensed in late November/early December because of the closeness to the normal mating season for all ewes. Ewe fertility is higher, prolificacy is greater, and, as a result, total pounds of lambs weaned are higher per ewe exposed. The weather for lambing may be more favorable in April than in January/February, but lambing weather is most ideal in September/October. Less labor may be needed at lambing in April than in January/February, but the least labor requirement is in September/October. The feed demand is lowest in the April lambing system because it takes advantage of spring, summer, and fall forages. The feed requirements are highest in the January/February lambing system. The September/October system feed requirements sit in the middle because a large amount of expensive feed is fed in lactation, but lowest quality is fed during winter when ewes are at maintenance. Hair sheep breeds excel in April lambing because they may be somewhat resistant to stomach worm infestations and/or lambs may be sold at light weights (50 to 80 lb) from grass in ethnic markets any time from June to December 31.

News to Ewes continued from pg. 25

Figure 5. Annual Milk-Fed Lamb price Cycle (100-120 lb)



More respiratory problems may be encountered in April-borns because of fluctuating warm and cold environmental temperature tied with rainy April weather. Lamb respiratory problems encountered in January/February are generally easier to manage than those that develop in April because lambs are in confinement and the temperature in a barn is usually more constant than on pasture. Fewest respiratory problems are encountered in fall lambs. April lambs do have more internal parasite problems than the other two systems. Predation may also be a greater problem because the sheep are on pasture 24 hours a day. Pasture management with April lambs requires greater expertise. Also, April lambs typically grow slower than those born in January/February or September/October. Because of these slower gains, lambs marketed at 100 to 120 lb will be older than January/February and September/October lambs and may command a lower price per pound because of the time of year when marketed.

Summary

Lambs produced in any lambing system (January/February = winter, April = spring, September/October = fall) can meet the sheep industry's lean lamb standards when marketed for slaughter (harvest) at 100 to 120 lb and 3 to 7 months of age. Ewes in each of the systems are managed through nutritional flushing, breeding, early gestation, late gestation, lambing, lactation, and maintenance production stages each year. These ewes are forage harvesting equipment because their annual production is derived from 275 to 280 days on pasture in the winter and fall lambing systems up to at least 330 days in the April lambing system. To stimulate highest production in all of the systems, highest quality forages (roughages) are fed during lactation, lower quality in late gestation, and the lowest quality during early gestation and maintenance. Furthermore, strategic supplementation with a concentrate (grain) mix may be necessary during flushing/breeding, late gestation, and lactation if maximum productivity is to be achieved.

Each production system requires unique resources and management. Winter and spring lambing requires precise forage management and internal parasite control. Fall lambing requires a ewe flock with specific genetic abilities to breed and lamb out-of-season. Even though each system has its own set of idiosyncrasies, the key to any productive sheep enterprise is the efficient and economical utilization of grazed forages and/or harvested roughages.

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