

NEWS TO EWES

An Annual Management Strategy for April Lambing

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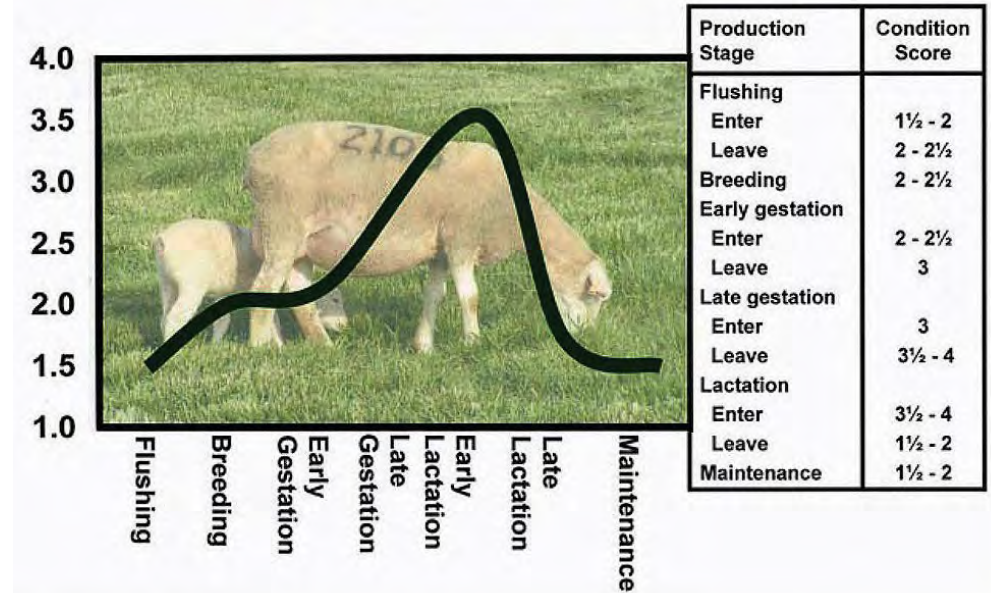
Introduction

January and February have been, and continue to be, the traditional lambing months for producing milk-fed slaughter lambs (100 to 120 lb) in the Farm Flock States of the eastern U.S. Even though this system has many production advantages, April lambing has evolved as a viable system in the transition states (VA, KY, TN) and the deep southeastern U.S. This system evolved as “hair” sheep came into the relatively hot and humid southeast. The no shearing requirement motivated many new producers to select “hair” sheep for their production. In addition, the same new producers wanted to produce market lambs from only grass (pasture) rather than feeding concentrates to growing lambs in confinement. To attain this objective, lambs had to be born in the spring (typically in April). Concurrently, the market for light-weight slaughter lambs (50 to 80 lb) mushroomed because producers could sell these “high-dollar” lambs throughout the summer. Although some may believe that April has replaced January and February as the traditional lambing season for the Farm Flock States, it cannot become traditional until a consistent annual management program has been developed. It is the purpose of this paper to describe some management strategies that may improve the productivity and profitability of an April lambing system.

The First Step

The average weight of ewes across types, breeds, environments, etc. is 150 lb when they are open, dry, and in moderate body condition (i.e., at maintenance). There are times during the year when they may weigh as much as 180 or as little as 125 lb, depending on their stage of production. Likewise, the body condition of ewes, in any lambing system, changes throughout the year depending on their stage of production (Figure 1).

Figure 1. Body Condition Score of Ewes as They Work Through an Annual Production System.



The scale used for assigning a body condition score (BCS) ranges from 1.0 (emaciated) to 5.0 (obese). Ewes can be scored in 0.5 increments (i.e., 1.5, 2.0, 2.5, etc.) or even 0.1 increments (i.e., 2.0, 2.1, 2.2, etc.) as producers become more experienced. Figure 1 shows how the BCS of ewes change throughout the production year, which begins with nutritional flushing. All ewes enter flushing at a 1.5 to 2.0 BCS. With proper management, they leave this period and work through breeding at 2.0 to 2.5 BCS. Figure 1 also illustrates that BCS increase at different rates during gestation (early vs. late) to reach 3.5 to 4.0 at lambing. Ewes need this high BCS at lambing because even though they can be fed the best possible lactation diet, their BCS can decrease to 1.5 to 2.0 by the time lambs are weaned. This should be a normal occurrence for high producing ewes that nurse twins. On the other hand, high producing ewes that are fed a suboptimal lactation diet may have BCS less than 1.5 at weaning. These will be emaciated. Performance of their lambs will be poor because these ewes had to reduce their milk synthesis so they could survive, even at their lambs' expense.

The Production Year

Inclusive dates of the production stages of an April lambing system are shown in Table 1.

For April lambing ewes, their production year begins on November 1 with a nutritional flushing period. This is a 2-week period before turning rams with ewes. Defined as “**having ewes in a rising body condition at time of breeding**”, the purpose of nutritional flushing is to synchronize conceptions and increase lambing rates by 0.15 to 0.20 lambs per ewe lambing. To attain these reproductive advantages, ewes need to enter the nutritional flushing period at 1.5 to 2.0 BCS. Furthermore, they need to be checked for internal parasite infestations in October (see Table 2). Most certainly, de-worm ewes and rams with FAMACHA scores 3, 4, and 5 or de-worm all ewes and rams. This is one of three times during the year when all ewes can be de-wormed regardless of FAMACHA score.

During this 2-week period, they should begin to gain weight and BCS from a diet of pasture pickings of bluegrass (BG), orchardgrass (OG), timothy (T), and/or

Table 1. Production Stages for an April Lambing System (Spring Lambing).

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 Jun. 12	60
Post-Weaning	Jun. 12 to Jun. 22	10
Maintenance ^b	Jun. 22 to Nov. 1	132

^aApproximate.

^bOpen, dry.

Table 2. Yearly Sheep Operation Calendar – April Lambing.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Basic internal parasite treatment *				x	x	x	x	x	x	x	x	x
Flush ewes												
Breed ewes												
Lamb												
Dock, castrate, vaccinate lambs												
C/D overeating vaccination												
Creep feed												
Wean at 60 days												
Feed weaned lambs												
Pasture lambs												
Market lambs												
Shear & market wool			x									
Pasture ewes												
Labor input	L	L	M	H	M	L	L	L	L	L	M	M

* FAMACHA every 21 to 28 days. De-worm 3, 4, and 5's.

L = low M = medium H = high

bromegrass (BR) plus **1.0 lb/hd/d shelled corn** or pasture pickings plus grass hay (BG, OG, T, and/or BR) provided ad libitum and supplemented with **1.0 lb lb/hd/d shelled corn**. Continuing this management until the end of the 3-week breeding period on December 6 (Table 1) should produce BCS from 2.0 to 2.5. Ewes must have ad libitum access to a complete mineral mix provided in loose form every day of every production stage.

Ewes leave the breeding stage and enter directly into early gestation (EG) at 2.0 to 2.5 BCS. At the end of EG, 119 days later (Table 1), ewes need to project at least a 3.0 BCS. This means they need to gain only about **0.07 lb/hd/d for the 119-d EG period or a total of 7 to 10 lb/ewe**. This small gain and minimum BCS change illustrates that **quality of roughage consumed during EG is unimportant as long as quantity is adequate**. Diets during EG can include ad libitum access to pasture pickings or low-

quality mature grass hay (fescue, BG, OG, or a mixture of any combination of the three). If hay has to be fed, each ewe needs 5.0 lb/d, whether fed once daily from square bales or provided ad libitum in “big” rolled or “big” square bales. Depending on ewe BCS, availability and quality of pasture and/or hay and weather, supplementation with 0.5 lb/hd/d shelled corn may be needed so the BCS is at least 3.0 at the end of EG.

Late gestation (LG) is about 28 d long and extends from March 16 until the average lambing date of April 13. **Ewes enter LG at 3.0 BCS**. They need to gain 0.5 lb/hd/d during LG to attain a BCS of 3.5 to 4.0 at lambing, indicating that hay (medium quality grass or grass legume) and/or pasture quality needs to be higher than was consumed in EG. These ewes require 4.0 lb/hd/d of hay or pasture dry matter per head daily. In order to obtain the 4.0 lb of dry matter from green pasture [spring cool season grass (BG, OG) or small

grain forage], ewes may have to consume 20 to 25 lb forage/hd/d. This feat will be difficult to attain because the green forage is so high in water that 150-lb LG ewes are physically unable to take in this volume of material in a 24-hr period. In turn, their LG gain may be severely reduced to the extent they may encounter ketosis (pregnancy disease) if they are not supplemented with at least 1.0 lb of a grain mix per head per day. The composition of an example grain mix is shown in Table 3. Shelled corn can be substituted for the grain mix on a 1:1 basis, but hay must be higher quality than the medium quality fed with the grain mix. With corn, feed either grass hay harvested in the vegetative stage, grass/legume harvested at mid-bloom, or alfalfa harvested at mid-bloom.

Ewes lamb in a lot near the barn or inside the barn. Ewes and newborn lambs are moved to lambing jugs for 2 to 5 days for several reasons. First, the weather in April is highly variable. It can be hot, dry, cold, rainy, snowy, or any combination. Cold (35 to 45° F) and rainy conditions (mud) are most devastating on baby lambs. Continual wet coats and cold temperatures enhance lamb death losses from pneumonia. **Practicing survival of the fittest is not an economical venture in this real-life scenario**. Secondly, moving to jugs assures bonding of ewes and lambs. This reduces the number of “bummer lambs” and concurrently increases the percent lamb crop that will subsequently be marketed. A third reason for moving ewes and lambs through jugs is individual animal identification. Ewe production performance can be monitored if ewes and lambs are individually identified. This performance can even be monitored by the National Sheep Improvement Program (NSIP) if animals are individually identified. Other reasons for “jugging ewes” include iodining lamb navels, removing mucal plugs from teats, and making sure ewes are milking enough for their lambs. Grafting, docking, castrating, and vaccinating lambs is efficiently done if ewes are jugged. De-worming all ewes out of the jugs prevents the periparturient rise in stomach worm infestation. **This is the second time all ewes are de-wormed**.

After 2 to 5 days of bonding, ewes and their lambs are moved from lambing jugs to nursery (mixing) pens. Each ewe is fed 5.0 lb grass hay plus 1.0 lb grain mix (Table 3) or shelled corn per day. Pairs remain in

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the nursery pens until enough ewes have lambed to send to pasture (usually by 2 weeks after lambing). **It is during these two weeks that shepherds exercise their greatest shepherding skills because this is the period that has the greatest impact on the number of lambs marketed.**

Ewes enter lactation at 3.5 to 4.0 BCS and leave 60 days later at 1.5 to 2.0, even though they are fed a maximum amount of highest-quality feed. **Feed ewes for milk, not BCS.** April lambing ewes, with ad libitum access to fescue, BG, OG, T, or BR pastures, even with clover, **must be supplemented with at least 1.0 lb grain mix (Table 3) or shelled corn/hd/d.** Efforts to maximize ewe milk production, and their lambs' growth, from grass alone in April, May, and June may be an exercise in futility for two reasons.

1. Pasture forage during these months may contain 80 to 85% water. This consumed forage passes through the digestive tract of lactating ewes so fast that nutrients contained in the forage are excreted in feces before they can be absorbed and converted to ewe body maintenance and milk. **Results can be hungry, poor-doing lambs!** Supplementation with a pound of corn, and maybe a pound or two of hay will slow down the rate of passage of this washy, green grass through the digestive tract so the nutrients of the corn, hay and pasture forage can be absorbed and converted to ewe body maintenance and milk.
2. Adequate nutrition needs to be provided to lactating ewes in the spring in order to prevent stomach worm infestations. Stomach worms that inhabit the abomasum of ewes are in hypobiosis (inactive) during the winter. When environmental conditions change (warmer weather, increased rainfall, high humidity) from winter to spring, grass becomes green and stomach worms become active. These worms also respond actively to stress encountered by April lambing ewes – that is, inadequate nutrition to produce enough milk from “washy (watery)” green grass alone to support maximum growth of twin lambs. To counter this stress, supplement spring pasture forage with a grain mix (Table 3) or shelled corn and perhaps hay on a daily basis. Provide a loose, complete mineral and fresh, clean water ad

Table 3. Ingredient Composition of an Example Grain Mix^a.

Ingredient	Lb/Ton	Percent of Mix
Ground/cracked shelled corn ^b	1636.0	81.8
Soybean pellets ^c	200.0	10.0
Distillers dried grains with solubles	100.0	5.0
Complete mineral mix ^d	50.0	2.5
Ammonium chloride	10.0	0.5
Vitamin E ^e	2.4	0.12
Vitamin A, D, E premix ^f	1.0	0.05

^a12.9% crude protein.

^bGround through a hammer mill without a screen.

^c48% crude protein.

^dComposed of 22.25% calcium; 6.00% phosphorus; 23.50% salt; 1.00% magnesium; 1.00% sulfur; 30 ppm iodine; 6 ppm cobalt; 32 ppm selenium; 1,800 ppm zinc; 1,500 ppm manganese; 302,000 IU vitamin A/lb; 25,000 IU vitamin D₃/lb; and 200 IU vitamin E/lb.

^e20,000 IU/lb.

^fVitamin A = 4,000,000 IU/lb; vitamin D₃ = 800,000 IU/lb; and vitamin E = 500 IU/lb.

libitum every day. Shade will be needed in May and June.

Heavy stocking rates of 6 to 10 ewes plus lambs per acre of cool season grasses are possible in May and June if they are rotated to a new pasture at least every 2 weeks. Using smaller acreages per pasture allows more frequent rotations like weekly, every 2 to 3 days, or even daily. More frequent rotations (mob grazing) will promote more efficient forage utilization and more stomach worm control. Regardless of the rotational frequency, pastures need at least 30 days of rest between grazing bouts so growing forage can recover from previous bouts.

Creep feeding April-born lambs is a must if maximum performance is to be achieved. Twin-born lambs that are creep-fed have been shown to reach 100- to 120-lb market weights 30 to 35 days earlier than twins that are not creep-fed. Even lambs planned to be marketed at 50 to 80 lb need to be creep-fed. Non creep-fed lambs may be subjected to low milk production of ewes if they consume only spring forage. Resultant high stomach worm infestations of the ewes and lambs may keep some lambs from even living to 50 to 80 lb. **Creep feeding can help overcome some of these problems.**

Two example creep diets are shown in Table 4. Diet 1 is the simplest. It has withstood numerous experiments that have tried to show more complicated and expensive diets produce faster and more efficient gains. One of these is Diet 2. The advantage of Diet 2 is that it is the same grain mix that can be fed to ewes in late gestation. It can also be fed to lactating ewes

(at least 1.0 lb/hd/d) and all other classes of sheep on the farm (rams, replacements). Lactating ewes are fed once a day in feeders in an open barn that allows them continual access. If this facility is unavailable, locate feeders near water, mineral feeders, and shade. Construct creep feeding areas either inside a barn or near the ewe feeding area. The daily amount offered to lambs in troughs depends on the previous day's intake. Keep increasing the daily amount offered as lamb weights increase.

Traditionally, lambs are weaned at 120 days of age. Such lambs are weaned when pasture forage is limiting, thus daily milk production of ewes is relatively miniscule. Weaning in this situation can be abrupt. With the advent of early-weaning lambs at 60 to 90 days of age, preparing ewes for weaning has to be more gradual. Ewes that lamb in April in the eastern U.S. are still producing significant amounts of milk from relatively large amounts of high quality forage when lambs reach 60 to 90 days of age. These ewes need to participate in a weaning management scheme that will hopefully reduce udder problems (like mastitis) in the next lambing season.

Any grain mix or corn in the daily ration of lactating ewes should be gradually reduced beginning 7 days before the weaning date. At the same time, it is ideal if ewes and lambs can be moved to pasture that contains lower quality and/or quantity of forage during these 7 days. One should not be concerned about the lambs as milk production of ewes declines during these 7 days because they will compensate by consuming larger amounts of creep feed. On the day of weaning, move ewes

Table 4. Creep Diets for Lambs on Pasture.

Ingredient	Diet 1		Diet 2	
	Lb/ton	%	Lb/ton	%
Ground/cracked shelled corn ^a	1800	90	1636.0	81.8
Soybean pellets ^b	200	10	200.0	10.0
Distillers dried grains with solubles	--	--	100.0	5.0
Complete mineral mix ^{c, d}	--	--	50.0	2.5
Ammonium chloride ^e	--	--	10.0	0.5
Vitamin E ^f	--	--	2.4	0.12
Vitamin A, D, E premix ^g	--	--	1.0	0.05

^aGround through a hammer mill without a screen.

^b48% crude protein.

^cComposed of 22.25% calcium; 6.00% phosphorus; 23.50% salt; 1.00% magnesium; 1.00% sulfur; 30 ppm iodine; 6 ppm cobalt, 32 ppm selenium; 1,800 ppm zinc; 1,500 ppm manganese; 302,000 IU vitamin A/lb; 25,000 IU vitamin D₃/lb; and 200 IU vitamin E/lb.

^dProvide ad libitum in loose form with Diet 1.

^eFor preventing urinary calculi in wether and ram lambs.

^f20,000 IU/lb.

^gVitamin A = 4,000,000 IU/lb; vitamin D₃ = 800,000 IU/lb; and vitamin E = 500 IU/lb.

away, leaving lambs in their pre-weaning environment. A 48-hour “drying off” period without feed in a lot or barn helps shut down or decrease milk synthesis and production. Likewise, and depending on the weather, water can be withheld for 24 to 48 hours. **All ewes are treated with a de-wormer, to which stomach worms are not resistant, 48 hours after separating from lambs.** Three hours after de-worming, turn ewes to the poorest pasture that is available. If hoof growth is excessive, trim feet and run ewes through a foot bath with a 10% zinc sulfate solution 2 weeks to a month after weaning. Udders can be palpated for normalcy and/or mastitis at the same time. Ewes that have production problems are identified and culled. Keeper ewes are rotated through the poorest pastures on the farm until the next breeding season.

Lambs need to receive three vaccinations for enterotoxemia (overeating) Type D at 5, 8 (weaning), and 11 weeks of age (Table 2). This vaccine can be either Type C/D or simply Type D. The weaning vaccination is given the same day the ewes are separated (60 days). This is also a good time to weigh lambs and evaluate their birth to weaning performance from home computations or from NSIP. Lambs are left in their pre-weaning pasture for 7 days and continue to have ad libitum access to creep feed. Hold them off feed and water overnight in a barn or lot before de-worming 7 days after weaning. De-worm early in the morning. Continue to hold in the barn or lot for 3 hours before turning back to the

pre-weaning pasture for 2 days. Then, they are moved to the highest quality pasture on the farm and fed a grain mix that has an ingredient composition similar to creep diet No. 2 in Table 4. This diet needs to be fed once daily at 2% of average body weight of all lambs until September 15. Gradually increase (over 2 to 3 weeks) the daily feed amount until the 2% of body weight level is reached. After the 2% level is reached, hold the daily intake the same for 2 weeks. Weigh or estimate weights. Gradually increase the daily intake according to the actual or estimated weight until it equals 2% of the new average body weight. It is always best to weigh lambs on or about August 1 to see how they are gaining. If weighing is not possible, weight estimates may work. Average gains (weaning to market at 100 to 120 lb) should be at least 0.55 lb/hd/d (ADG). Lambs are rotated to fresh high-quality pasture daily, every 2 to 3 days, or weekly, but at least every 2 weeks. They are de-wormed as symptoms of infestation occur. Close daily observation is essential for all lambs born in April and raised on pasture during summer and fall because these lambs will have stomach worms regardless of management. **Live with the worms, but try to keep to a minimum.**

High-quality pastures grazed by lambs from weaning in mid-June to September 15 include BG/white clover, OG/white clover, or OG/alfalfa mixes, summer annuals (sorghum x sudangrass hybrids), or pure stands of alfalfa. Pure stands of only BG or OG will not support daily gains desired by

producers who market milk-fed slaughter lambs. Do not graze alfalfa after September 15. However, pure stands of BG and OG provide excellent pasture after September 15. All lambs are weighed on September 15 and ewes and wethers are separated from ram lambs. Management to marketing in October/November may require separating light weight lambs from heavy weights, changing the grain mix from feeding once daily to self-fed or moving some light weights to a confinement environment – **remembering the goal is marketing uniform groups in October/November at 100 to 120 lb.**

Summary

Ewes that produce milk-fed slaughter lambs are forage harvesting equipment because their annual production is derived from 330 to 365 days on pasture. The 35 days when they may not be on pasture are during the 30 to 35 days of the lambing season in a barn or shed in April. To stimulate highest production, highest quality forages are fed during lactation, lower quality in late gestation, and the lowest quality during early gestation and maintenance. Strategic supplementation with a grain mix or shelled corn is necessary during flushing/breeding, late gestation, and lactation. Management of April lambing ewes requires precise forage management (especially in lactation) and internal parasite control.

Lambs forage with their mothers after they are a week or two old and are creep-fed until weaning at 60 to 90 days of age. After weaning, they rotationally graze high-quality forage supplemented with a grain mix (2% body weight daily) until September 15. After this date, they may continue summer management, can be self-fed a grain mix on fall pasture, and/or may be segregated and finished to market weight in confinement. Management per lamb depends on the sex, its weight, forage availability, and weather conditions.

Finally, April-born lambs are marketers of farm produced forage. To realize significant income from this product, ewes and lambs have to be managed so the forage will generate this income.

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