

Early Weaning Lambs

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Introduction

Animal research publications in the 1960's and 70's were populated with articles related to "Early Weaning Lambs." In those days, early-weaned lambs were described as those removed from the milk of dams at any age prior to the traditional **120-day weaning age**. Performance, in terms of production efficiency, was evaluated when lambs were weaned anywhere from 21 to 90 days of age. Production responses of these same lambs, when provided a multitude of pre- and post-weaning diets under differing environmental settings, led to the conclusion that **early weaning at 60 days of age and a minimum of 50 lb body weight** can be accomplished without reducing post-weaning performance.

Why Early Wean?

The primary reason to early wean is to increase the efficiency of production. **Figure 1** illustrates how this can be. Milk production of ewes declines rapidly after peak production at 3 to 5 weeks post partum and is of minor importance to lambs after 8 to 10 weeks. This is a result of decreased milk synthesis because intervals between suckling bouts increase as the ages of lambs increase. Concurrently, lambs become accustomed to longer separations from ewes as they consume more and more creep feed. On average, each lamb consumes about 1.0 lb of total creep feed from birth to 28 days of age. **Figure 1** shows lamb dry feed intake increases dramatically from 28 to 60 days and continues to increase as lambs grow older and become heavier. It was the early weaning research that established the concepts depicted in **Figure 1**: **As ewe milk production decreases, lamb dry**

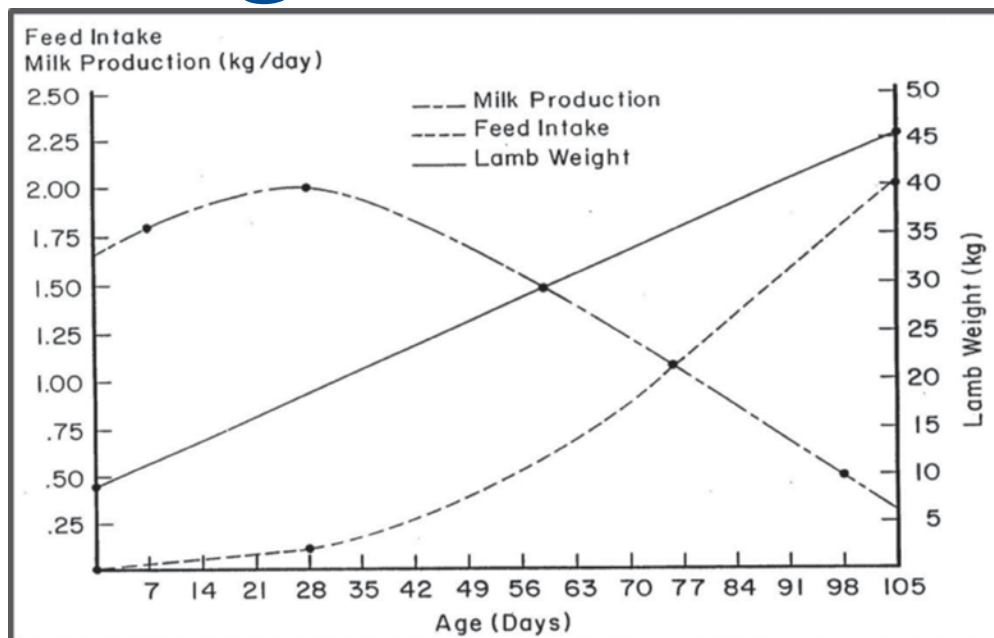


Figure 1. Relationship Between Ewe Milk Production, Lamb Weight Gain, and Feed Intake to 105 Days Post-Partum

feed (creep) increases so lambs gain at a steady rate from birth to 45 kg (100 lb). Lambs that have been creep-fed will have a functioning rumen by 60 days of age and are more efficient in converting feed to gain than are ewes in converting feed to milk and then into lamb gain. **Therefore, the optimum age to early-wean is when the Lamb Weight line intersects with the Milk Production line.**

Table 1 is an illustration of how production efficiency increases with early weaning. Thirty Polypay ewes with twin lambs were assigned to three systems when lambs were 65 days old

(average). One lamb of each twin pair was weaned at 65 days to their pre-weaning creep in the 1W-1UW system. The other lambs remained with the ewes and were creep-fed the same diet as the 1W lambs. Ewes were fed to meet their nutrient requirements when nursing singles from 65 days until lambs reached 99 lb. In the 2W system, both lambs of 10 ewes were weaned to their pre-weaning creep at 65 days. Ewes were turned to pasture. Lambs in the 2UW system remained with ewes and continued to be creep-fed. Ewes were fed to meet their nutrient requirements when nursing twins in late lactation.

Table 1. Performance of Lambs Managed in Three Systems from 65 Days to Slaughter^a

Measurement	System		
	1W-1UW	2W	2UW
Days on Feed	58	62	53
ADG, lb	0.75	0.70	0.77
DFI (lamb), lb	2.90	3.43	2.46
FE (lamb), lb	3.87	4.90	3.18
DFI (lamb + ewe), lb	5.72	3.43	5.81
FE (lamb + ewe), lb	7.63	4.90	7.55

^a Initial weight = 56 lb; Slaughter weight = 99 lb.

The 2UW lambs required fewest days to reach 99 lb because their ADG was highest (0.77 lb). They also consumed the least concentrate supplement (lamb fed: DFI = 2.46 lb/head). Consequently, lambs in the 2 UW system used their lamb feed most efficiently (2.46 lb/lb gain). Lambs in the 2W system took longest to reach 99 lb, gained slowest (0.70 lb ADG), consumed the most lamb feed, and were the least efficient in converting lamb feed to gain. Up to this point, it looks as if early weaning may not be as economically beneficial as once thought. However, we must not forget about the feed of the ewes. Ewes in the 2W system went to pasture where they remained until the study was completed. Those in the 1W-1UW and 2UW systems remained in confinement and continued to consume hay and concentrates until lambs reached the 99 lb slaughter weight. Note how the DFI of lambs + ewes increased in these systems, whereas the harvested DFI (hay and concentrates) of lambs + ewes in the 2W system remained the same as the DFI (lamb): 3.43 lb/head. Resulting FE (lamb + ewe) in the 1W-1UW and 2UW systems increased dramatically because of the ewe feed consumption from 65 days until lambs reached their 99-lb target

slaughter weight. When the complete ewe/lamb(s) unit was analyzed, production efficiency became apparent when lambs are early-weaned (2W).

Early weaning may be advantageous when a limited amount of high-quality pasture is available. This feed can be fed to the efficient lambs as the dry ewes are maintained on a lower quality feed supply. Ewes can then rebreed, depending on breed and season of the year, and allow producers the opportunity to obtain more than one lamb crop per year. Separating the ewes from their lambs at 60 days of age can reduce the incidence of stomach worm infestations in the lambs because their source of infestations, the ewes, is removed. Predator attacks from coyotes, dogs, wolves, etc. may be eliminated when lambs are weaned into confinement near or inside barns instead of remaining with ewes or being weaned to pasture at 60 days.

Early Weaning January/February-Borns

A prerequisite to any successful early weaning program is consumption of a dry creep feed. This prerequisite must be met

in a January/February lambing program because weaned lambs are managed either in confinement or on a spring pasture supplemented with concentrates until marketing in May/June at 100 to 120 lb. Consumption of a dry, palatable creep diet of ground/cracked corn, ground alfalfa hay, and/or soybean meal stimulates greatest rumen development and provides assurance of successful weaning at 60 days and 50 lb body weight. The creep diet does not need to be complex. Typically, a 90% ground/cracked yellow corn and 10% soybean meal diet will produce optimum growth to 60 days.

The first two weeks following weaning are critical to newly weaned lambs. To prevent this from being a traumatic experience for the lambs, they must be consuming maximum creep feed. Leave lambs in the pre-weaning area when ewes are moved out of seeing and hearing range. Provide clean, fresh water, keep lambs in dry, sanitary conditions, and continue feeding the pre-weaning diet after ewes leave. After 7 days, mix the pre-weaning creep and the post-weaning diet 50:50. Continue decreasing the creep and increasing the post-weaning

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diet until the creep diet is diluted out. In confinement, post-weaning diets should contain a minimum of 14% crude protein and at least 75% concentrates. Some post-weaning diets for early-weaned lambs are shown in **Table 2**.

For maximum production, these diets should be self-fed. Lambs fed Diet 1 need to be supplemented with to 0.3 to 0.5 lb grass hay (mid-bloom) per head daily. The amount of hay in Diets 2 and 3 is adequate to maintain rumen activity of the lambs. Adding additional hay will likely decrease gain. Diet 2 is excellent, has high protein percentage, but is relatively expensive because of its alfalfa hay and soybean meal content. Diet 3 is less expensive because distillers dried grains with solubles replaced some of the soybean meal. Soybean hulls provide the energy in Diets 4 and 5. Lamb gains with these diets may not be as high as those obtained with Diets 1, 2, and 3. However, costs of the soybean hull diets may be less than the corn/soybean meal diets.

If lambs are early-weaned to spring pasture, they should weigh a minimum of 50 lb each. They must be consuming maximum creep feed and adjusted to

Table 2. Ingredient Composition of Diets for Early-Weaned Lambs in Confinement

Ingredient	Diet, %				
	1	2	3	4	5
Gnd. alfalfa hay, MB ^a	-	10.0	-	-	-
Gnd. orchardgrass hay	-	-	10.0	-	-
Gnd./Cr. yellow corn	79.1	65.9	61.0	-	-
SBM ^c	13.5	14.3	13.9	10.0	10.0
SBH ^c	-	-	-	80.4	75.5
CGF ^c	-	-	-	-	10.0
DDGS ^c	4.3	5.0	10.0	5.0	-
Salt	0.6	0.6	0.6	0.6	0.6
Gnd. limestone	0.9	1.2	1.5	1.0	0.6
Dicalcium phosphate	0.6	-	-	-	0.3
Complete sheep mineral	0.3	0.3	0.3	0.3	0.3
Ammonium chloride	0.5	0.5	0.5	0.5	0.4
Vitamin A ^d	0.05	-	-	-	-
Vitamin D3 ^d	0.01	-	-	-	-
Vitamin E ^d	0.10	0.13	0.13	0.13	0.13
Vitamin A, D, E premix ^e	-	0.05	0.05	0.05	0.05
Corn oil	-	2.0	2.0	2.0	2.0

^a Mid-bloom.

^b Ground through hammer mill without screen.

^c SBM = soybean meal (48% crude protein); SBH = soybean hulls; CGF = corn gluten feed; DDGS = distillers dried grains with solubles.

^d Vitamin A (10,000 IU/gram); Vitamin D3 (15,000 IU/gram); Vitamin E (20,000 IU/lb).

^e 4,000,000 IU Vitamin A; 800,000 IU Vitamin D3; 500 IU Vitamin E/lb.

pasture when weaned. Ninety percent ground/cracked yellow corn and 10% soybean meal is an adequate creep diet.

Ewes must have trained their lambs how to graze for this system to work efficiently. Move ewes away from the lambs. Continue to provide the creep diet (self-fed) for 7 days; then, mix creep and shelled corn 50:50 for 7 more days. Provide shelled corn ad libitum from day 14, along with bluegrass or orchardgrass spring pasture, until marketing in May/June. Diet 1 (**Table 2**) can be used instead of shelled corn if a higher protein diet is preferred. However, this diet is more expensive than corn alone. Diets 2 and 3 (**Table 2**) can be used, but the hays should be replaced with ground/cracked yellow corn, because lambs will be

consuming adequate roughage from the spring pasture. Diets 4 and 5 (**Table 2**) can also be fed, but gains are likely to be less than those attained with shelled corn or Diet 1, 2, and 3 because of the higher roughage content (soybean hulls).

Early Weaning April-Borns

Lambing in April offers more marketing options than January/February lambing. However, more management expertise may be required before these options become successful. Lambs can be marketed for slaughter directly off the ewe at light weights (50 to 70 lb). Although lambs can remain with ewes until marketing in the fall, their slaughter weights may vary from 70 to 120 lb and, thus, may not receive top dollar at the market. Variation in market weights may be a result of internal parasite, foot, and/or excessive environmental temperature problems encountered throughout the summer. Additionally, ewes may rob their lambs of the high-quality pasture without producing adequate milk for maximum gain. The third option for April-born lambs is to early-wean to pasture and import them into a forage management program that produces 100 to 120 lb slaughter lambs at targeted marketing dates from September to December (depending on producer's preference). In this option,



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ewes with lambs grazing spring pasture (bluegrass, orchardgrass, or mixture) need to be supplemented with 1.0 lb/head/day shelled corn until weaning. Meanwhile, lambs need to be creep-fed the 90:10 diet (ground/cracked corn: soybean meal). Lambs should be at least 60 days of age and weigh at least 50 lb when weaned. After weaning, about June 20 to July 1, lambs begin to graze summer pasture and are supplemented with shelled corn or a growing finishing diet. Either of these diets can be self-fed or hand-fed once daily at 2.0% of the average body weight. Self-feeding will result in maximum intake of the finishing diet at the expense of the pasture forage and will allow marketing in September/October. This system works well when forage availability becomes limiting during the heat of summer. Hand-feeding once daily at 2.0% of body weight promotes greater use of forage than self-feeding. Feeding lesser amounts of the finishing diet each day will result in lambs reaching 100 to 120 lb market weights later in the fall (October/November). The forage of choice for this scenario is alfalfa because of its nutrient composition and productivity during July and August. Shelled corn can serve as an economical

supplemental concentrate when lambs graze alfalfa. The diet in **Table 3** can also be used to supplement lambs on grass or alfalfa pastures. This diet will provide excess protein, compared with only corn, however, it does contain adequate mineral and ammonium chloride (to prevent urinary calculi).

Summary

Lambs can be weaned successfully in confinement or to pasture at 60 days of age if they weigh at least 50 lb. Creep feeding is the most important prerequisite for success. The main reason to early-wean is to increase production efficiency. If lambs have been creep-fed, removing ewes has minimal or no effect on subsequent post-weaning performance. Weaned

Table 3. Growing/Finishing Diet for Early-Weaned Lambs on Pasture

Ingredient	Percent of Diet
Ground/cracked yellow corn	81.80
Soybean meal (48% CP)	10.00
Distillers dried grains with solubles	5.00
Complete mineral mix	2.50
Ammonium chloride	0.50
Vitamin E ^a	0.12
Vitamin A, D, E premix ^b	0.05

^a 20,000 IU/lb

^b 4,000,000 IU Vitamin A; 800,000 IU Vitamin D3; 500 IU Vitamin E/lb

lambs are highly efficient converters of high-quality concentrates into lean tissue (growth) either in confinement or on pasture forage. So, if the producer's goal is to produce market lambs as economically efficient as possible, early-weaning is one management tool that can contribute to this goal. 🐏

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