



Increasing Your Lamb Crop Series

Culling Underperforming Ewes

Introduction

Lamb crop is one of the most important factors affecting profitability of a sheep enterprise. Increasing the pounds of lamb produced, so long as it is in balance with the environment and production system, should be the goal of every sheep producer.

Many factors affect lambing percentage, and management is a key contributor. A management decision that can greatly increase lamb crop and decrease input costs is culling underperforming ewes. Culling is when a ewe (or ram) is removed from the breeding flock. Culling underperforming ewes is one of the best management practices that has been identified by the American Sheep Industry for improving lambing percentage.

However, unlike some of the other best management practices, such as breeding ewe lambs or pregnancy scanning, culling underperforming ewes is something all producers, regardless of flock size or production system, can and should do.

Culling underperforming ewes will reduce the cost of maintaining the flock. Underperforming ewes consume feed, take up space, and require labor, while producing less profit than their contemporaries, costing the farm money. Thus, culling underperforming ewes is a way to help make sheep production more profitable.

At the same time, extreme culling is discouraged, as there are numerous costs associated with this management practice. The value of a cull ewe is considerably less than the value of the ewe lamb that is replacing her. There are also costs associated with developing ewe lambs for breeding. Depending upon the reason for culling, it may be more economical to retain a ewe and breed her to a terminal sire for the production of market lambs.

In a sheep enterprise, it is most common to cull approximately 15% of the flock each year. In purebred or high producing flocks, the rate may be even higher.

The culling rate of a sheep flock is directly related to the selection pressure applied to the flock. Selection pressure is the degree to which a flock is screened for specific traits, and the number of animals that are culled is based on the results of this screening.

There are many reasons to cull ewes, and the reasons will vary by farm or ranch. Not all flocks will have the same breeding objectives. Ewes that are profitable in some flocks may not be profitable in other flocks. Current economic conditions may weaken or strengthen culling standards.

Factors influencing the decision to cull a ewe can be grouped into two main categories: involuntary and voluntary culling. Involuntary culling should be applied when a ewe has no productive future, for instance, infertility, injury, and illness. However, what really influences the genetic improvement of your flock is the voluntary culling, which is guided by breeding and economic objective criteria. It is noteworthy to mention that identification and record keeping are crucial to make good culling decisions.

How to calculate lamb crop to calculate lamb crop

$$\begin{aligned} &\text{Number of Lambs Sold + Retained} \\ &\div \text{Number of Ewes Exposed} \\ &= \text{Lamb Crop} \end{aligned}$$

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Reasons for culling ewes among all US sheep flocks

Primary reason for culling	% of sheep	% of sheep operation
Age	55.6	69.7
Failure to lamb	7.7	22.0
Teeth problems	7.6	8.0
Hard bag syndrome	7.1	24.1
Mastitis	6.7	20.9
Poor mothering	4.7	22.3
Other	3.7	7.6
Chronic weight loss	2.1	3.6
Economic issues	1.7	2.8
Other illness	1.2	2.4
Single births	1.1	3.9
Other reproductive problems	0.9	3.3
Total	100	

USDA APHIS, National Animal Health Monitoring System, April 2014

AGE

According to the 2011 NAHMS study, almost 70% of sheep operations cited age as the primary reason for culling ewes. In 2011, 55.6% of ewes culled were removed due to age. In 2011, the average age of culled ewes was 6.3 years, compared to 5.9 in 2001.

Ewes tend to be most productive between the ages of 3 and 6. After 6 years of age, their productivity tends to decline. On average, they give birth to fewer live lambs and produce less milk for their offspring, resulting in less pounds of lamb weaned. For these reasons, it is customary to cull ewes when they reach 5 or 6 years of age, especially in range flocks where ewes cannot receive individual attention and/or nutritional resources are limited.

On the other hand, small flocks and/or farms with good feeding conditions, may keep ewes in flocks for much longer. Some ewes are productive well beyond 6 years of age. In fact, ewes that can maintain productivity for a longer period of time should be favored in selection and culling decisions. For some flocks, keeping older, productive ewes could be a way to increase productivity, while simultaneously reducing replacement costs.



Health issues are a major reason why ewes are culled.

HEALTH

Health issues are a major contributor to why ewes are culled from a flock. In fact, they are the primary reason for involuntary or premature culling of ewes before they reach their productive life spans.

Udder health – Hard bag and mastitis were identified as primary reasons for culling ewes. Mastitis is usually due to a bacterial infection in one or both halves of the udder but can also have non-infectious causes such as injury. There are several forms of mastitis. The gangrenous type is more severe, and the udder generally becomes very hard and turns blue (blue bag) due to gangrene. With sub-clinical mastitis, ewes appear healthy, but there is a reduction in their milk production and the development of scar tissue (lumps) in their udders. Both conditions result in little or no milk being produced by the affected gland(s), resulting in lambs starving and causing lambs to grow poorly.

Only ewes with healthy, sound udders should be kept in flocks. Udders should be palpated to make sure there are not any lumps, hardness, or fibrous material. Udder halves should be relatively equal. Both teats should be functional and of normal size, as newborn lambs may have difficulty nursing oversized teats. Ewes with long, pendulous udders should be culled, as lambs may have difficulty finding the teats. Such udders are also more prone to injury and disease. Ewes that have lost all or part of their udder functions should be culled, as these issues rarely resolve themselves.

Prolapses – A prolapse is when structures fall out of their normal positions. Ewes that prolapse should be culled, as they may repeat the problem in subsequent years. Their offspring should not be kept for breeding, as genetic predisposition may increase the likelihood of vaginal prolapses.

Teeth – As sheep age, their teeth wear down, creating issues with eating and their ability to maintain condition. Teeth do not grow back, thus issues with them rarely resolve themselves. Ewes with teeth that

are missing, broken or are completely worn down should be culled. It is best to “mouth” ewes (checking their teeth), before breeding and making a decision to keep them in the flock or not before the ewe enters a point in the production cycle where she will have high nutritional demand. Ewes with a “full mouth” of eight adult teeth that are only partially worn can remain in the flock and be productive, but each operator should make this decision based off their production scheme and nutritional resources.

Hoof health – Footrot is a bacterial infection of the hooves and is one of the most difficult diseases to control and eradicate from sheep farms. It has caused many sheep producers to liquidate their flocks. Footrot is costly to treat, especially in terms of labor. It can also be an animal welfare issue and negatively impact productivity.

Culling is one of the most powerful tools for dealing with hoof problems. Ewes that are chronically infected with footrot or scald, fail to respond to treatment are candidates for removal from the flock.

Internal parasites – In situations where gastrointestinal parasites (worms) are a major obstacle to profitable production, parasite resistance should be a selection and culling criteria. Ewes which require frequent or regular deworming should be culled. If fecal samples are not obtained from ewes, the FAMACHA® system can be used to identify and cull the most susceptible.

It is possible to select for parasite resistance in sheep, as 20% to 30% of the flock is usually responsible for 70% to 80% of the output of worm eggs. Parasite resistance (low fecal egg counts) is a moderately heritable trait. The National Sheep Improvement Program (NSIP) currently provides estimated breeding values (EBVs) for advancing genetic selection in parasite resistance.

Other health issues – There are numerous other physical problems for which ewes should be culled. Ewes should be evaluated for soundness on a yearly basis, preferably at the time of lambing, marking, or breeding. Ewes with unidentified weight loss or thin ewes that cannot maintain their body condition should be culled. Teeth or other oral problems, such as an over or under bite, may interfere with chewing and a ewe’s ability to maintain body condition

PERFORMANCE

Performance is an important criteria that should guide selection and culling decisions. Many of the factors already discussed account for the differences in performance among ewes. For example, sub-clinical mastitis may be the reason that a ewe weans lambs with below-average weights.

FERTILITY

It is generally recommended that the breeding season be limited to two or three heat cycles, preferably only two (34-51 days). Mature ewes which fail to breed and maintain pregnancy should be culled. Pregnancy detection can be used to determine which ewes are open well ahead of the expected lambing season. Pregnancy testing is especially useful for ewe lambs, as open ewe lambs, can be sold for higher prices than yearling ewes that fail to lamb.

Ewes that lamb late in the season may be another target for culling, as ewes that lamb early in the lambing season are usually the most productive. If out-of-season or accelerated lambing is the goal, ewes which fail to breed out-of-season and/or miss one or more breeding opportunities should be culled.

For more information on determining pregnancy status see Productive Best Practices Factsheet Test for Pregnancy.

LAMBING

While dystocia (difficult birthing) is complex, research has shown that producers can reduce the incidence of dystocia by culling ewes that require assistance at lambing. Some producers will even cull lambs from assisted deliveries. Ewes that reject or harm

their lamb(s) should be culled. Ewes whose lambs are small, weak, and/or slow to suckle should be discriminated against.

Ewes that fail to raise a lamb should be culled. No ewe can return a profit if she fails to produce a lamb. It is easy to identify a dry maiden ewe, as she will not have any udder development. In older ewes, it is harder to pick out dry ewes; however, they are usually in better body condition and have smaller udders.

In some production systems, ewes that raise single lambs should be candidates for culling, as more costly production systems require higher lambing percentages. Two single births in a row may be the culling standard for some sheep operations. If the single lamb is of poor quality or weight, this compounds the reason for culling.

When lamb losses are beyond the ewe’s control, such as predation or accidental death, exceptions can be made for keeping a ewe that fails to raise a lamb or fails to raise twin lambs. However, if a producer makes too many excuses for a ewe, this should be sign that the ewe is better off being put in the cull pen.

GENETICS

Genetics are another important criteria that should guide selection and culling decisions in order to make long-term improvement. Performance records should be captured not only on the ewe but of her offspring as well to provide insight into her genetic predisposition for many economically important traits such as reproduction, health and growth. Some traits are hard to see (parasite resistance), thus producers should utilize estimated breeding values (EBVs) from the National Sheep Improvement Program to make the most informed and accurate genetic selection decisions. Ewes with inferior EBVs for traits that are important to the operation should be culled.

OTHER REASONS FOR CULLING EWES

Various other criteria may be used to make culling decisions.

In hair sheep flocks, failure to adequately shed may be a reason for culling. Likewise, woolled sheep flocks should cull ewes with fleece defects, negative wool quality issues or experience wool blindness.

Temperament can be another reason for culling. Fence jumpers should be culled. Flighty ewes are more difficult to handle and can get the entire flock excited. Calm ewes should be favored over nervous ewes, as their behavior has been associated with lower lamb mortality.

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AUTHOR & REVIEWERS

Author: Susan Schoenian, M.S., University of Maryland Extension, Keedysville, Maryland

Reviewers: Reid Redden, Ph.D., Texas A&M AgriLife Extension, San Angelo, Texas; Dan Morrical, Ph.D., Iowa State University, Ames, Iowa; and Rodney Kott, Ph.D., Former Montana State University Extension Sheep Specialist, Fredericksburg, Texas



THE IMPORTANCE OF ANIMAL ID AND RECORDS

Identification and record keeping are tools that assist in identifying cull ewes. Ideally, all ewes are identified with ear tags or similar identification. Electronic identification (eID) tags can significantly reduce labor and improve data collection efficiency, eliminating the need for manual recording and reducing human error. If this is not the case, ewes can be ear tagged or ear notched at the time of lambing, marking, weaning, or whenever something is noticed that is a reason for culling.

Ear notching can be an especially useful system for identifying cull ewes. Ewes that fail to breed or produce a lamb (or a good quality lamb) can be ear notched. Ewes that require assistance at lambing, reject their lambs, or give birth to small, weak lambs that are slow to suckle can be notched. Ewes that have mastitis, vaginal prolapses, or other health problems can be ear notched. One standard of culling would be to cull any ewe with two ear notches. Culling ewes with one ear notch would result in a stricter culling standard.

If ewes are individually identified and individual records are kept, it is much easier to identify ewes for culling. Records can be used to rank ewes for productivity and identify those which are underperforming. Litter weight at weaning is a good composite trait that can be used to evaluate productivity. At the same time, it is important to combine records with visual appraisal, as records may not document poor udder conformation, chronic hoof disease, or other problems that should be eliminated from the flock.