



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 lamb crop, 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. Culling underperforming ewes is one of 12 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; maybe, even costing the farm money. Thus, culling underperforming ewes is a way to help make sheep production more profitable, sustainable, and viable.

At the same time, overzealous culling is discouraged, as there are numerous costs associated with culling. 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, such as for the production of market lambs.

In a sheep enterprise, it is customary to cull approximately 15% of the flock each year. In purebred or high producing flocks, the rate may be even higher. According to the National Animal Health Monitoring System (NAHMS), 14% of ewes were culled from the national flock in 2011, as compared to 18.3% in 2001.

Culling is when a ewe (or ram) is removed from the breeding flock. 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.

How to calculate lamb crop

$$\frac{\text{Number of Lambs Sold + Retained}}{\text{Number of Ewes Exposed}} = \text{Lamb Crop}$$

In a sheep enterprise, it is **customary to cull** approximately **15% of the flock** each year.

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

Age is usually the primary reason for culling ewes. 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 culled 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 lambs and produce less milk for their offspring, resulting in lower pounds 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. In many of these extensive operations, productivity falls off after 5 to 6 years of age.

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. In many instances, their offspring are some of the most productive ewes in the flock. For some flocks, keeping older, productive ewes could be a way to increase productivity, while simultaneously reducing replacement costs.



Photo by Lisa Stuber

Health issues are a major reason why ewes are culled.

Lamb Resource Center



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Health

According to the NAHMS study, health issues are the other major reason why ewes are culled. In fact, they are the major reason for involuntary or premature culling of ewes before they reach their productive life spans.

Udder health – In the NAHMS study, hard bag and mastitis were identified as primary reasons for culling ewes. In 2011, 7.1% of ewes were culled due to hard bag syndrome. Another 6.7% were culled as a result of mastitis. Hard bag, which affects both udder halves, can be caused by ovine progressive pneumonia (OPP) or mastitis. Mastitis is an infection of the udder. Both conditions result in little or no milk being produced by the affected gland(s), causing lambs to starve, or 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. Ewes that have lost all or part of their udder function should be culled.

Prolapses – A prolapse is when structures fall out of their normal positions. Ewes that prolapse their vaginas should be culled, as they may repeat the problem in subsequent years. Their offspring should not be kept for breeding, as vaginal prolapses are believed to be an inherited problem. Ewes that experience a uterine prolapse, may be retained for breeding, depending upon the circumstances; however, most producers wisely cull these ewes.

Hoof health – Footrot, a bacterial infection of the hooves, 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 footrot. Ewes that are chronically infected with footrot or scald, or fail to respond to treatment, should be removed from the flock. Ewes that have abnormal and/or excessive hoof growth should be culled. It is possible to select for footrot resistance in a flock.

Internal parasites – In situations in which internal 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 susceptible ewes, as there is a correlation between FAMACHA© scores and fecal egg counts.

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Internal parasites (cont.) – 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 (fecal egg counts) is a moderately heritable trait. The National Sheep Improvement Program (NSIP) currently provides estimated breeding values (EBVs) for parasite resistance in Katahdin sheep. The same can be done for other breeds once data are submitted.

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 ill thrift should be culled. Old, thin ewes that cannot maintain their body condition should be culled. Teeth or other problems may interfere with chewing. Only ewes with sound mouths should be kept. All of the ewe's incisors should be present. Ewes with genetic defects or predisposition to disease should be culled.

► Performance

Performance is another 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 days). Mature ewes which fail to breed and maintain pregnancy should be culled. Pregnancy scanning can be used to determine which ewes are open. 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.

► 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.

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. 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. Ewes that require extra work, such as routine hoof trimming or deworming, can be 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.

► 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. Similarly, woolled sheep flocks should cull ewes with fleece defects or wool quality issues.

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.

► Literature cited

Sheep (2011). Part IV. Changes in Health and Production Practices in the US Sheep Industry 1996-2011. USDA APHIS National Animal Health Monitoring Service (NAHMS).

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► More information

U.S. Lamb Resource Center

<http://lambresourcecenter.com/production-resources/productivity/>

National Sheep Improvement Program

<http://www.nsip.org>

U.S. Sheep Industry Roadmap

<http://lambresourcecenter.com/reports-studies/roadmap/>

