

DORSET COMMERCIAL CONNECTION

Determining the Most Efficient Ewe Size for Your Operation

by *Melanie Barkley, Extension Educator*
Penn State University

Big ones, little ones, fat ones, skinny ones; ewes come in all sizes and shapes. But, which is the most efficient ewe size for your operation? The most efficient sheep or better yet the most efficient flock of sheep is what producers should strive for. But, the most efficient sheep for one flock is not always the most efficient sheep for another producer's flock. So, how do we arrive at first describing an efficient sheep and then go about choosing the size that best fits your operation?

Let's start by defining efficiency as it relates to animal production. Dr. Gordon Dickerson, who was a leader in defining efficiency in beef production, defined it as the ratio of total costs to total animal products from females and their progeny over a given period of time. He further looked at efficiency in two different ways. One was biologic efficiency or feed consumed to product produced. The other was economic efficiency, which is dollars spent compared to dollars returned.

It is well documented that the number of lambs weaned per ewe is the largest factor that affects profitability in an operation. But, we need to consider what size ewe will best utilize the resources available on a particular farm. Ewes need to be able to convert forage from pasture or stored feeds to maintain their body condition and also to produce lambs. Maximizing stocking rate on pasture is a key to arriving at efficient ewe sizes. Across the country stocking rate varies greatly depending on the productivity of soils as well as rainfall. In the east, a typical stocking rate would be 1,000 lbs. of animals per acre. But, with excellent pasture management, this stocking rate could double. Compare that to stocking rates in some western areas where you might need five or more acres to support just one ewe.

Let's use a scenario to compare the difference in costs for maintaining a 175 lb. ewe versus a 225 lb. ewe. For many operations, producers will need to provide about

four months of supplemental feed during the winter months. A 175 lb. ewe requires about 2.9 lb. of dry matter per day and a 225 lb. ewe requires about 3.3 lb. of dry matter per day according to National Research Council's "Nutrient Requirements of Small Ruminants." Translate that into the amount of hay that would actually be fed, and we are looking at about .5 lb. per day more hay for the larger ewe. This is calculated using hay at 90% dry matter and by adding in a bit extra for waste. Over a four month period, the additional cost to maintain that larger ewe is \$4.50 for \$150 per ton hay costs. Well, that cost seems no big deal. But, remember that we also have to decrease the stocking rate on pasture to account for the additional dry matter intake of the larger ewe. If we consider a full year of additional dry

matter intake needs using the value of hay, the larger ewe will cost about \$13.50 more to feed. Bear in mind that this cost does not include the additional pasture acreage needed to meet her feed requirements.

There are obviously some additional costs that will be needed for health care, more feeder and barn space, etc. that we have not specifically accounted for. So, let's estimate that additional costs for that ewe at around \$15 per year. If lamb prices for weaned lambs are \$1.50 per lb., that ewe will need to produce lambs that weigh 10 lbs. more as a group at weaning than the smaller ewe to justify her larger size.

What have we missed in the comparison? Larger framed ewes are more likely to produce larger framed lambs at birth, which could possibly increase lambing problems which could in turn affect survivability and weaning percentages. Those larger lambs will have a higher dry matter intake than the smaller lambs. This won't make much difference for the small producer. But, if you are a large producer

with 1,000 lambs this certainly will make a difference.

What this comes down to is that each individual producer will need to determine what the most efficient ewe size is for his or her operation. Pasture stocking rates, ewe productivity, feed efficiency and lamb values all play a part in determining what size ewe is most efficient for a particular operation. So, take a closer look at your farm records to sort through the pieces of the puzzle that determine what size is best for your operation.



Ewe productivity is an important consideration when selecting the ideal ewe size for your sheep operation.