

# Selecting a Replacement Ewe or Doe – Phenotype

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Selection is the foundation for flock and herd improvement. Producers have many factors to consider when selecting replacement females. The decision of which animals to keep, purchase, or cull is not always easy, but is critical to move the flock/herd forward. Many factors play a role in the selection process like genetics, past performance, health, economic traits and visual appearance. One should use observations and evaluation skills to make an informed purchase decision. The purpose of this article is to address the visual characteristics producers should be looking for when selecting replacement females.

## Feet and Legs

The most important phenotypic trait that should be evaluated on replacement ewes and does is the structure of the feet and legs. Ewes and does must be sound on both their front and back legs and be able to move freely in order to remain productive in the flock/herd for many years. During the female's productive lifecycle her structure will need to support her own weight, the weight of her lambs/kids during gestation and allow her to be able to move around the pasture for nutritional purposes.

Females should stand square on all four corners of their body and set down on a strong pastern with a large foot. Legs should be set wide, not close at the rear hocks or have too much set to the rear hocks. For females that have correct leg structure, the rear legs come out of the center of the hind-quarter and go straight to the ground and the hocks are set square not angling out or in (Figure 1). Seen in Figure 1, the second rear leg structure is bow legged, while this female has a wide base, her hocks angle out which will cause her stride to be restricted and not fluid when set in motion. Also in Figure 1, the third rear leg structure is cow hocked, her hocks angle in towards themselves, causing her to have a narrow base, which can impact the female's ability to move smoothly and easily around the pasture.

Front leg structure is often times overlooked, however it is an important factor to assess when evaluating a replacement fe-

male. Ewes and does with correct front leg structure have their knee straight up and down and that knee is in line with the forearm and cannon bone, as seen in the first animal in Figures 2 and 3. Common front leg structure problems include calf-kneed, buck-kneed, pigeon-toed, splay-footed and knock-kneed. Examples of these defects can be seen in Figures 2 and 3. Calf-kneed is when the knee is angled back causing the female's shoulder to be angled forward. Buck-kneed is when the knee is angled forward, causing the ewe or doe to have a steep shoulder and steep pasterns, which can lead to a breakdown in structure early in her lifecycle. Pigeon-toed is when the front

hooves angle in toward the body, causing the female to be narrow based. Splay-footed is when front hooves angle out away from the body, and often times, females that are splay-footed are also knocked-kneed.

## Volume and Muscle

Almost as important as selecting a ewe or doe with sound structure is selecting a female that has enough volume and muscle. Having adequate volume and muscle is critical for ewes and does to achieve maximum efficiency as breeding females. Volume is how much internal capacity the female possesses and it has three dimensions: length, width, and depth. Females should be selected that are long bodied, have width through their chest, fullness through their heart area, a wide straight top, have spring and depth of rib and uniform depth of body

from their forerib to their flank. In terms of muscle, replacement females do not need to have an overwhelming amount of muscle, but they need to have honest muscle shape to complement their volume and capacity. Muscle shape can be evaluated visually by looking at the female's forearm, down her top and out of her hip and dock, and through her leg and stifle. When possible ewes and does should be handled to evaluate muscle in addition to visually assessing muscle shape. By feeling for muscle shape and dimension over the rack and top, measuring length of loin and hindsaddle and wrapping the circumference of leg allows for a more accurate assessment of muscle. When handling for muscle, fat thickness can

Figure 1: Rear Leg Structure

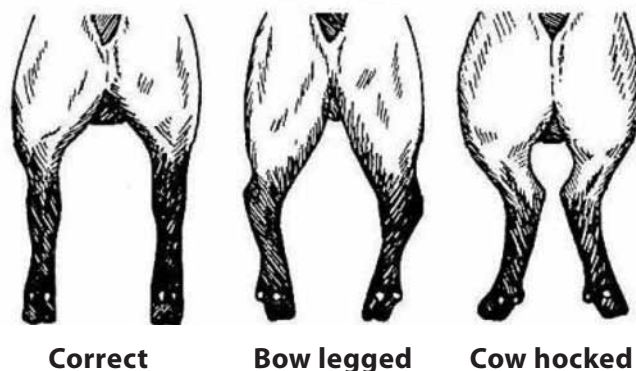


Figure 2: Front Leg Structure (side view)

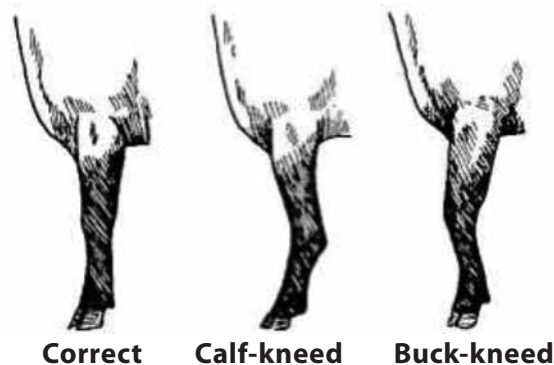
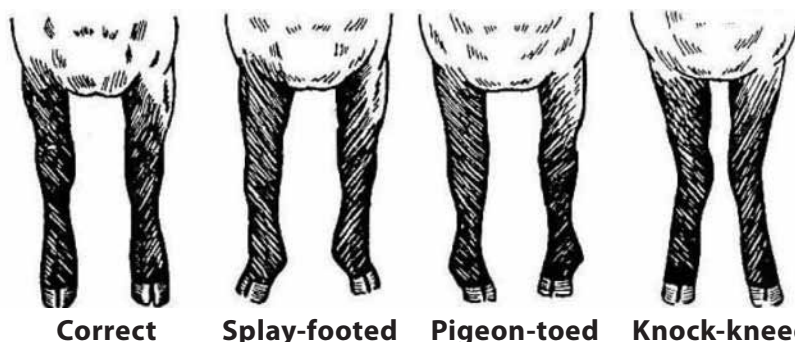


Figure 3: Front Leg Structure (front view)



also be evaluated. Females should be carrying some degree of fat cover, but should not be so fat that reproductive performance could be impaired.

### Skeletal Size and Balance

Females should be selected that are big enough to grow and produce offspring. They should also meet their breed standard for size; adequate size will vary among breeds. Ewes and does should be selected that have height at the top of their shoulders and length of spine and extension. In addition to being large outlined, replacement females should balance when viewing them from the side. Balance contributes to the overall appearance and eye appeal of the animal. Females should be smooth through their shoulder, smooth at the neck shoulder junction, straight and strong topped and, level through their hip and dock. Coarse shouldered, u-necked and weak topped ewes and does should be avoided when selecting replacement females.

### Mouth

Mature ewes and does should have eight incisors on their lower jaw. In a correct mouth placement the top and bottom jaws align so the incisor teeth are flush with the pad of the upper jaw, as seen in Figure 4. Parrot mouth occurs when the lower jaw is too short and the incisors are posterior to the upper jaw. Monkey mouth is when the lower jaw is too long and the incisors are anterior to the upper jaw. Females with parrot and monkey mouth should not be selected. The best way to observe mouth soundness is to look at the female's mouth from the side view, as seen in Figure 4.

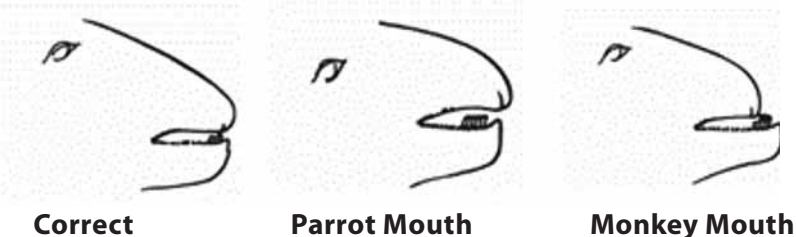
### Udder

The shape of the udder will depend on the age and stage of lactation of the ewe or doe. Ewes and does should have two functional teats that are medium sized which will allow the lambs/kids to nurse unassisted. Also, the udder should be well attached, soft, smooth and balanced. Females with hard, lumpy udders, as well as pendulous or oversized udders should be avoided when making a selection.

### Breed Character

If selecting replacement females for a purebred operation, breed character should be evaluated. Each breed association has a set of breed standards. Ear size, wool on legs, color of fleece or skin, wool cap, muzzle width and pigmentation

**Figure 4: Mouth Structure**



Here is a picture of good rear udder attachment. Medial suspensory ligament is strong and udder/teats are above the hock which is very important to reduce the incidence of trauma leading to mastitis. One can see that the udder is slightly uneven but that is because she is nursing kids and she was not held away from kids.



Here is a good picture of excellent fore udder attachment, good teat delineation and proper teat size

should all be evaluated to make sure the female is in compliance to breed standards.

The selection of high quality replacement females is critical to the success of any operation. Selection lays the foundation for future generations to continue the success of the flock and herd. When making a selection decision on replacement females evaluate all factors: structure, volume, muscle, growth, balance, mouth, udder and breed character. All these factors should be evaluated in tandem to make the best replacement decision.



This side shot demonstrates that the udder is below the hocks. As stated this is undesirable and also makes it harder for the kid to nurse. At birth, many of these udders are so close to the ground that the newborn kid has great difficulty in locating the teat and nursing.



As you can see in this picture, this udder lacks rear udder attachment, is cylindrical in shape (not desirable) and lacks teat delineation. It is also very uneven (this doe is nursing a single kid and the right udder half has dried up). Although I have seen worse udders than this, anytime the udder drops below the hocks it is susceptible to trauma which can lead to mastitis.

**Ann Leed** was raised on a small sheep operation in eastern Pennsylvania and was involved in 4-H and FFA. She received her bachelor's degree at Iowa State University in Animal Science and competed on both the Livestock and Meats Judging Team. At the University of California-Davis, Ann earned her M.S. in Animal Sciences, focusing on swine reproduction. From 2006 until 2011 Ann was an instructor and livestock judging coach at Mississippi State University. Currently, Ann is the academic program coordinator for Animal Sciences at the University of Kentucky