

# Heavy-Muscl'd Callipyge Lambs: Blessing or Curse?

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## Background

In 1983, a sheep breeder in Oklahoma noticed a ram with exceptional muscling, especially in the hind quarters. This ram, Solid Gold, was then mated to normal ewes, and the condition was passed on to their offspring. Eventually, the extra muscling was found to be due to a spontaneous mutation, that is a natural change in the animals' genetic code. Because the muscle hypertrophy (enlargement) is most pronounced in the hind quarters, the condition was named *Callipyge*, which is a Greek word meaning "beautiful buttocks". This pamphlet provides some basic information about the gene and its effects.

## Growth

Callipyge lambs are apparently normal at birth, and remain so until about 4 to 6 weeks of age. In fact, the muscle enlargement may not be apparent until lambs weigh 40 to 50 lbs. After that, Callipyge lambs can be distinguished by the enlargement of muscles of the hind legs and the loin. From weaning to market weight, Callipyge lambs eat less than normal lambs, but grow at the same rate. Therefore, their feed conversion efficiency (lbs gain/lbs feed) is superior to normal lambs. *This characteristic is highly desirable to the feeder.*

## Carcass quality

When lambs are ready for market, they are processed and the meat sold as carcasses or in primal cuts. Callipyge lambs have a higher than normal dressing percentage, that is the proportion of the body weight recovered in the carcass. The carcasses are leaner, that is they contain more muscle and less fat than

normal lambs. For example, loin eye areas are larger, and backfat depths are smaller in Callipyge lambs. As a consequence, a Callipyge lamb will yield about 20 to 30% more saleable meat than a normal lamb. *This characteristic is highly desirable to the processor.*

## Meat quality

When consumers eat meat, the most important parts of the eating experience are tenderness, juiciness and flavor. When compared with normal lambs, meat from Callipyge is much tougher or chewier. It may also be somewhat drier in the mouth. In fact, the shear force value (an objective measurement of meat toughness) may be doubled in Callipyge lambs compared to normal lambs. Because tenderness is the most important quality characteristic of meat, *this characteristic is highly undesirable to the consumer.*

## Bottom line

In summary, the Callipyge mutation results in extremely heavy muscling in lambs. These lambs grow more efficiently and have superior carcass and meat yields, all of which are very positive traits. On the other hand, their meat is very tough, which is a very negative trait. In fact, concern about tough meat has led Superior Packing Company to reject any Callipyge lambs. Therefore, at this time these lambs have no ready market or application. Researchers are trying to find ways to overcome this problem, but until then producers (and show-ring exhibitors) should not raise Callipyge lambs and risk having no outlet for the finished animal.

A.



B.



**Figure 1A, B. Note the enlarged muscles in the hindquarters of Callipyge lambs (the two on the right) compared with normal lambs (on the left).**