

Whole Grain In Lamb Rations

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Several experiments were conducted at the University of British Columbia on the effects of feeding whole, rolled, or pelleted grains to lambs. One consistent result seen in these experiments is that better growth and feed efficiency rates are produced when whole grains are fed compared to that of the same pelleted ration.

Grinding, rolling, or pelleting grain does not improve the extent to which it is digested. In other words, lambs can digest whole grains just as well as processed forms. Of the various grains, corn produces slightly faster and more efficient gains. However, its value is no more than that of wheat or barley because the advantage of its higher energy value is offset by its low protein content and the increased cost of necessary supplementation. Barley and wheat have produced results similar to one another, perhaps with a slight advantage to barley. Oats fall well behind in terms of live weight gain, feed efficiency, and dressing percentage. The value of oats is no more than 80% the price of barley. There is also some evidence to suggest that oats may produce a less desirable flavor in the meat than other grains. The best choice of grain will vary with location, supply, and price. In British Columbia, barley is probably the best grain for lamb feeding.

ADVANTAGES OF WHOLE GRAINS

As previously stated, in our experiments whole grains have consistently given the best results and have several advantages in addition to eliminating the cost of processing:

1. Feed intake is greater (25%) while feed utilization remains the same for whole compared to pelleted grain.
2. Growth rate is 20 to 30% faster with whole grain.
3. Feed conversion efficiency is improved 5 to 10%.
4. Whole grains produce a firmer more desirable fat finish on the carcass.
5. Whole grains do not cause damage to the lining of the rumen.
6. With whole grain there is less chance of "off feed", overeating disease or acidosis problems.

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Much of the benefit of whole grains can be explained on the basis of better acceptance by the lambs and the higher level of feed intake. The lambs are very efficient at chewing the grains while ruminating, which results in them being digested just as well as pre-ground grain. The physical form of the grain fiber remains intact in whole grain and results in a different kind of fermentation in the rumen. Because of this, the common problems of high grain feeding are greatly reduced and there is, in fact, no need to provide supplemental roughage when feeding whole grain.

In situations where forages are fed with grain there is also evidence that whole grain is preferable to pellets. Feed intake tends to be higher and the utilization of the forage is improved.

METHOD OF FEEDING

How are whole grains fed? The system that can be used is a simple mixture of grain with a pelleted commercial protein (32%) – mineral-vitamin supplement. Nursing lambs up to 30 lbs may be creep fed a mix of 2 parts barley to 1 part supplement. Initially, soya meal added to the mix may provide some additional incentive to early consumption. For lambs of 30-60 lbs the mix is 3 parts barley to 1 part supplement, and beyond 60 lbs a 4:1 ratio is used. These ratios produce levels of about 18%, 16% and 14% protein respectively.

SPECIAL PRECAUTIONS

In formulating finishing rations for lambs care needs to be taken with regard to two items:

- a) Calcium-phosphorus ratio - Unless adequate quantities of calcium are added to grain rations the level of phosphorus may exceed that of calcium. Where this occurs there is a considerable risk of lambs (particularly wethers) developing urinary calcium (water belly). Where commercial protein supplements are used this is normally taken care of. With home mixtures, a minimum of 1.5 % ground limestone is needed to provide satisfactory balance.

- b) Copper – Intensively fed lambs are very susceptible to chronic copper poisoning. Several common feed rations and mineral supplements contain copper in quantities sufficiently high, enough to cause trouble if fed for prolonged periods of time. When sheep consume copper in quantities greater than their need, they tend to store it in their liver. If this continues long enough it may lead to poisoning. The length of time involved depends on the level of copper and many other factors. Cattle and other classes of livestock are better able to excrete excess copper and are much less susceptible than sheep. Protein supplements with copper levels in excess of 20 parts per million (.002%) should be avoided.

On a final note I would like to say that lambs are very efficient converters of feed. However, this potential efficiency can be dramatically reduced if they suffer from parasites. These take two forms:

- (a) external – particularly keds and:
- (b) internal – several species of roundworms.

There are effective treatments available for both internal and external parasites. For lambs to achieve their potential efficiency these pests need to be kept under control.