# Livestock Notes

### Effects Of Early Weaning On Feedlot Performance

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A research study from Oklahoma State University (Gill et al.) has shown the effects of early weaning on feedlot performance. In this trial, calves were weaned:

- at 3 1/2 months and shipped directly to the feedlot;
- at seven months and shipped to the feedlot; or
- wintered in drylot and then allowed to graze native range for 122 days before entering the feedlot.

Slaughter ages were 13.1, 14.5, and 20.7 months of age for early weaned, normally weaned, and backgrounded steers, respectively. All steers were slaughtered at about .5 in rib fat.

The purpose of the study was to examine how early-weaned calves may differ from their conventionally-weaned counterparts during a finishing phase. There are times when early weaning may be a beneficial practice for the cow-calf producer, particularly when drought or other conditions prevent cow herd from receiving adequate nutrition during late lactation.

The results of the Oklahoma study are shown in the table below. The early-weaned calves had a lower average daily gain, were lighter at slaughter, and were fatter than the other groups. The authors indicate that it was harder to visually determine fat thickness in these cattle. However, with all other costs considered, the early-weaned calves may have been more profitable because of the time when they were marketed. This group was marketed in April, which is historically a seasonal high point in fed-cattle price. The backgrounded steers were marketed in summer and fall.

A glaring omission from the data is the health of the steers. One of the major problems with feeding young calves is the higher morbidity and mortality rates generally found when feeding calves compared to yearlings. At Penn State, we plan to examine this issue in a fall trial where we will early wean calves, but leave them on pasture for two months before moving them to the feedlot. This will allow us to determine if the stresses of weaning can be overcome with two additional months on pasture, and how the early weaned calves for production and health early in the feedlot phase. Coupling these results with the Oklahoma study should give a clearer picture of how to handle the early-weaned calf.

| Treatment | ADG (lb/day) | Slaughter weight (lb) | Fat thickness (in) | Profit per head ($) |
|---|---|---|---|---|
| Early weaned | 2.93 | 1154 | .61 | 143.11 |
| Normal weaned | 3.22 | 1178 | .56 | 60.73 |
| Backgrounded | 3.02 | 1222 | .51 | -20.48 |

### Economics Of Supplemental Feeding Of Beef Cattle

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Thanks to the state's large food processing industry, Pennsylvania livestock producers can choose from a wide variety of supplemental feeds, such as bakery waste, livestock byproducts, food waste, and feed-grain byproducts. In addition, many supplemental feeds are transported like commodity feeds, and are available to Pennsylvania livestock producers. Brewers and distillers grains, wheat bran, cottonseed, and whole grains are readily available from feed suppliers.

Livestock producers need to make informed economic decisions when purchasing any feed. The primary consideration for any producer should be how to get the most gain for the least cost. Consequently, feed purchase decisions should be based both on animal nutritional requirements and the cost of meeting those requirements.

***What does the feed cost?***

Livestock producers are interested in purchasing feed with nutritional value. Of course, nutritional value varies from feed to feed, even from load to load for the same type of feed. Variation in nutritional value is due partly to the quality of different feeds, with respect to a specific nutritional component (e.g., protein). Other variation comes from the different moisture content in feeds. Producers should purchase feed based on dry matter content. Otherwise they are buying high-priced water.

For example, two loads of corn are available at $100 and $105 per ton. The load selling for $100 has a dry matter content of 80 percent, and the other tests at 90 percent dry matter. If we price the corn based on dry matter content, the load at 80 percent dry matter costs $125 per ton of dry matter ($100 divided by .80). The other load costs $116.67 per ton of dry matter ($105 divided by .90). The *more expensive* corn turns out to be cheaper of the two when priced on the actual feed value per ton.

Producers should purchase individual nutrients in the same way — buying per pound of nutrient, not per pound of product. For example, if a livestock producer is interested in buying a protein source, the feed alternatives should be compared based on the price of protein in each feed. Suppose there are two protein feed alternatives, one at 20 percent protein and one at 35 percent on a dry matter basis. Both feeds contain 90 percent dry matter. The feed with the lower protein content is selling for $180 per ton, while the other sells for $220 per ton. Which feed is the better deal? Both contain 1,800 pounds of dry matter per ton of feed (2000 pounds x .9). The first feed contains 360 pounds of protein (1800 pounds x .2) or $0.50 per pound of protein ($180 divided by 360 pounds). The second feed contains 630 pounds of protein (1800 pounds x .35) or $0.35 per pound of protein ($220 divided by 630 pounds). Once again, the *more expensive* feed has turned out to be a better buy.

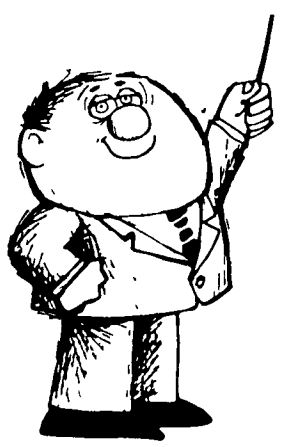
Although both of the above examples indicate that the more expensive feed is a better buy, that is not always the case. Livestock producers should evaluate all alternatives themselves. They also should remember that many feeds have other nutritional components in addition to protein. For example, price differences must also consider energy, vitamin, and mineral differences, as well as toxicity levels and palatability.

The costs of storage also should be included in supplemental feeding cost estimates. These include not only the cost of the storage structure, but also storage losses, handling, and feed losses. A 3 to 7 percent storage loss is common on livestock farms, although that will vary somewhat depending on the type of feed. Handling costs also will vary across feeds and farms. In general, bagged feeds will be more expensive than the same feeds sold in bulk, but the additional cost of bagging may or may not offset the costs of handling and storing bulk feeds, depending on the farm situation. The use of some supplemental feeds may require on-farm grinding and mixing. Costs for equipment and labor can be substantial. Finally, feeding losses will also vary across feeds. Palatability and feeding systems will determine the extent of feeding loss. Again, a 2 to 8 percent feeding loss is not uncommon. When all the storage and feeding losses are accounted for, the actual cost of the feed fed to cattle may increase 10 percent or more.

***What supplemental feeds are economical?***

The best buys for supplemental feeds vary with a number of factors. First, supplemental feeding

(Turn to Page A39)

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