

# Conditioning Calves

Feeding management adds value during weaning and preconditioning.

**F**eeder calves are the No. 1 Tennessee agricultural commodity, but too many of them are sold directly off the cow without proper conditioning to withstand the stresses experienced during marketing. This results in a significant percentage of sick and/or dead calves.

Calves that have been weaned and started on feed at least 45 days prior to selling are better able to withstand the stress of transportation and handling associated with typical marketing procedures, with less sickness and lower death loss. This process is termed *preconditioning*.

Since 1999, a series of studies has been conducted at the University of Tennessee Highland Rim Experiment Station to evaluate various weaning procedures. The results of these studies will benefit beef producers as they decide whether to wean calves prior to marketing. The complete studies may be reviewed on the animal science Web site at [www.agriculture.utk.edu/ansci](http://www.agriculture.utk.edu/ansci).

## Supplement recommendations

Recommendations resulting from the trials include:

- ▶ The ration should contain at least 13% crude protein (CP). Protein could possibly be higher during the first three weeks of the feeding period, especially if fed with a lower-quality forage. During the entire feeding period, the average CP should be 13%.
- ▶ The ration should contain at least 72% total digestible nutrients (TDN). This is the minimum to sustain desirable gain and may need to be higher with lower-quality forages.
- ▶ Feedstuffs consisting of highly digestible fiber should be strongly considered. Soybean hulls, cottonseed hulls, wheat middlings, beet pulp, citrus pulp and corn gluten are common examples of feedstuffs that contain significant amounts of highly digestible fiber. These ingredients complement forages, assuring that the least expensive part of the calves' diet is efficiently utilized.
- ▶ Limit feeds high in starch during the early part of the feeding period. Corn is the



PHOTO BY STEPHANIE VELDMAN

**FEEDING  
OPTIONS  
2003**

most common source of starch. If corn is fed at more than 0.4% of body weight, efficiency of forage usage decreases. If the goal is to achieve inexpensive gains from forage, consider limiting corn to 0.5% or less of body weight.

- ▶ Understand and utilize feed additives. Antibiotics are often added during the initial phase to prevent or minimize problems with respiratory and enteric infections. After the initial stress is over, strongly consider feed additives that improve performance efficiency, such as ionophores (Rumensin®, Bovatec®, etc.).
- ▶ Mineral fortification may be very important. Recent evidence has confirmed that a significant proportion of Tennessee forage and cattle are deficient in minerals that are critical to immune system function. Copper, selenium and zinc all play roles in immunity and are commonly deficient. Adding these to concentrate supplements is desirable.

## Other feeding suggestions

If commercial feeds are utilized, follow label instructions. This is important if the feeds are medicated. Consumption at the indicated rate assures the correct level of additives is obtained.

As a rule of thumb, supplemental feeds need to be consumed at a minimum of 0.5% of body weight [3 pounds (lb.) for a 600-lb.

calf] in order to yield measurable results. The maximum level of feeding in a forage-based ration is 1.0% (6 lb. for a 600-lb. calf). At this level, significant gain improvements should be expected.

Calves should be observed for signs that they are becoming too fat. Calves that are too fleshy may be discounted at marketing.

## Summary

Studies and on-the-farm demonstrations conducted by the University of Tennessee have shown that feeder calves can be efficiently and economically weaned and preconditioned using both available and commercial feeds. These calves will make efficient and adequate gains to cover both feed and health costs, plus make a profit. The use of supplements with highly digestible fiber such as soy hulls, wheat middlings, corn gluten, etc., can improve performance.

Data indicate that the preconditioning period should be a minimum of 45 days. Care should be taken to avoid overconditioning calves.

For more information, please visit [www.agriculture.utk.edu/ansci](http://www.agriculture.utk.edu/ansci).



**Editor's Note:** This article was compiled by professors Warren Gill, Clyde Lane and James Neel and assistant Extension specialist Aaron Fisher, University of Tennessee department of animal science, and distributed in the spring 2003 "Beef Cattle Time" newsletter published by the University of Tennessee Agricultural Extension Service.