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## **Feeding Cattle Feather Meal May Provide Low Cost Protein**

**By Rick Machen**

*University of Florida, Range Cattle REC*



For questions or comments regarding this publication contact [William F. Brown](#)

As oilseed meal prices continue to rise, the search for alternate sources of dietary protein for ruminants is becoming much more intense. Feather meal, a by-product of the poultry industry, may, indeed be an economically suitable alternative for beef producers in the southeast.

Feather meal is not new to the cattle industry. Researchers have been evaluating feather meal as a protein source for ruminant diets for the past 15 years. However, due to the recent widening of the difference in cost per unit of protein between feather meal and the oilseed meals, feather meal is receiving a serious look here in the southeast. For example, the eight year average (1980-1987) cost per unit of protein figures for feather meal, soybean meal and cottonseed meal are \$2.39, \$3.99, and \$3.74, respectively. However, for the past three years (1985-1987), the same figures are \$1.72, \$3.47 and \$3.10, respectively. (Figures based on southeast feather meal quotes, Illinois 44 percent soybean meal and Mississippi valley cottonseed meal.)

As the name implies, feather meal consists of ground poultry feathers. Feathers (collected from a slaughter facility) are cooked at 140-150 degrees centigrade for 30 minutes under live steam pressure. After cooking, the product is then dried and ground to produce a free flowing meal. The average product contains 85 percent crude protein, 10 percent fat and 4-7 percent moisture. When fed alone or in high concentrations (greater than 40 percent of a feed), palatability problems have been observed. However, when fed as part of a protein supplement for complete diets (feedlot situation) or when incorporated in a molasses based liquid supplement, palatability problems have not arisen.

Feather meal also has a higher rumen escape potential than traditional protein sources. Escape (or bypass) protein refers to the amount of dietary protein escaping microbial degradation in the rumen and arriving at the small intestine. Efficiency of dietary protein use by the ruminant animal is dependent upon the amount of high quality protein appearing at the primary site of absorption--the small intestine. This higher escape potential will allow producers to decrease, but not necessarily eliminate the amount of expensive natural proteins fed. The incorporation of urea to boost crude protein content and provide a readily available source of nitrogen for the rumen microbes will compliment feather meal in cattle diets and supplements. The bottom line for feather meal is maintenance of animal performance with lower feed costs when compared to traditional feeding programs.

With respect to Florida's cow/calf industry, feather meal may have the greatest impact in winter supplementation programs for brood cows and cost effective supplements for nursing calves. Results of studies conducted here at Ona have demonstrated the benefits of including a natural protein (cottonseed meal) in a molasses slurry for winter supplementation of brood cows. Substitution of feather meal and urea for these oilseed protein sources will decrease feed costs and improve the flow characteristics of these slurries. Feather meal may also prove to be an economical, efficiently utilized protein source for high protein supplementation programs for calves.

In summary, if the protein requirements of cattle are being met with the current natural protein supplement, an increase in performance will not be realized by using feather meal. However, that same performance can be achieved with a reduced feed cost. Ongoing research with feather meal by IFAS and the Florida feed industry will hopefully result in feeds and feeding programs that improve the efficiency and increase the profitability of beef production in Florida.