

## **Utilizing co-product feeds for the stocker operation**

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For many years, stockering calves in the Southeastern U.S. has been a very profitable enterprise for some producers. According to Rankins, Jr. and Prevatt (2013), the best opportunity for profit has historically lied with a system that purchases lightweight calves in the fall adding 200-400 lbs of gain, and marketing those calves in truckload lots in the spring. This system, however, is only successful if the value of that gain is worth more than it cost to put on that gain. Rising feed, fuel, and fertilizer prices have changed some of the traditional dynamics of this system. Producers are looking for cheaper ways to add on additional valuable gain. With the rise of the ethanol industry and other alternative markets for processing grain, and there are an abundance of co-products available for Mississippi producers.

Seasonal price trends are available by evaluating weekly price trends from USDA market reports. These trends can be used to calculate an average value of body weight gain for calves, and this was done in 2013 by Rankins, Jr. and Prevatt (2013) for years from 1979 to 2010 in a review of forage and co-product systems for stockers in the south. Perhaps what is most interesting from this analysis is that although the value of gain has increased particularly over the last decade, it has also become more volatile. That same review also noted that the best cost of gain is typically found in systems utilizing cool-season forages.

Although all beef producers dream of always abundant forage to produce ample gains for their cattle, that is not always the reality. The greater number of days that calves can be grazed producing gains close to 2 lbs per day the better chance at profitability. However, when forage is availability is low, producers must consider a supplementation strategy that will spare forage and increase gains. The wide availability of reasonably priced co-products has many producers utilizing them as viable options for increasing gains. These co-products offer the producer the opportunity to decrease feed costs and realize lower cost of gain.

There are many options available for co-product feeds. Some feed options are more suited to roughage substitutes or supplementation of mature cows, and as such will not produce sufficient gains in growing calves to justify the cost of gain. While crops such as cotton and peanuts are abundant in Mississippi, and produce whole product that can be used as cattle feed, their high fat content limits their use and palatability for growing cattle.

Below are several options that are popular:

- Soybean Hulls
  - Soybean hulls are a co-product of the soybean oil milling process. They are a very palatable and digestible feed. Soybean hulls are also a good energy (77% TDN) source, particularly on forage-based diets. Soybean hulls are roughly equal to corn as a supplement at feeding levels of 0.5% of body weight or less on high-forage diets. Previous research has shown similar gains to corn when supplemented to stocker cattle on forage based diets. They are a moderate protein (12%) source, but can vary widely from load to load. They are sometimes fed in self-feeders

along with hay or pasture, but are conducive to bloat when fed at high levels (over 7 pounds per head per day). Soybean hulls are bulky and dusty, so they are best used pelleted or mixed with silage or molasses to reduce dust. They are a good source of calcium while low in phosphorus. Soybean hull pellets are a widely used ingredient in Mississippi beef cattle diets.

- Corn Gluten Feed
  - Corn gluten feed is a co-product of the corn milling process which produces high-fructose corn syrup used as a sweetener. It consists primarily of the bran and meal remains from the grain after starch removal. It has good protein (22%) content but protein quality too low for poultry and swine diets. Corn gluten feed works as a protein and energy (80% TDN) supplement in beef cattle diets. At feeding levels of 0.5% of body weight or less on high-forage diets, the TDN value is about equal to corn. It often prices in as a cost-effective feed ingredient, but should not make up more than 50% of daily dry matter intake. Corn gluten feed is often fed in self-feeders along with hay or pasture, however, caking is possible in humid conditions. Corn gluten feed is low in calcium and can contain high sulfur levels that necessitate mixing it with other feeds in the diet. Due to the nature of the extraction process, the protein content of corn gluten feed is highly digestible, and is rapidly degraded in the rumen.
- Distillers Grains
  - Distillers grains are a co-product from the fermentation of grain to produce alcohol (e.g., ethanol). They are an excellent source of bypass protein (27%) and energy (86% TDN) for beef cattle and can be fed as a majority of the total diet for mature beef cattle. They are high in digestible fiber, thereby making them a relatively safe feed from a rumen health standpoint. However, due to the excessive sulfur content from the distillation process, care should be exercised when feeding distillers grains. Stocker diets benefit from inclusion levels of up to 15 to 25% of the total diet, with the top end being no more than 50% of the total diet. Levels higher than 50% of the diet may result in sulfur toxicity. Drying aids storage, transportation, and handling of distillers grains. Due to the high level of phosphorus in distillers grains, it is recommended that a mineral supplement with an adequate level of calcium be offered to cattle fed distillers grains. The wet form is roughly  $\frac{3}{4}$  water and has a limited storage life in Mississippi, particularly during hot conditions. Depending upon the time of year and the physical location of the plant, the grain used may change (typically corn to sorghum). This leads to some changes in the nutrient content of the feed as well as some physical properties such as color. Most plants will give producers a nutrient analysis of the current product leaving the plant.

There are a wide range of options available for stocker producers to supplement cattle on pasture. It is important before purchasing and feeding any byproduct feed to consider its nutrient content, moisture content, storage, availability, and palatability. A cheap feed can turn expensive quickly if cattle refuse to eat it. Many co-products can by nature be very variable in their nutrient content so an analysis of the chosen feed is important. While their price can make co-product feeds a tempting alternative, they are not always the right option for every producer. Some producers may not have the equipment or facilities necessary to handle bulk amounts of these feedstuffs. It is important to research and to take into consideration all aspects of a feed and feeding program before purchasing.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit [msucares.com/livestock/beef](http://msucares.com/livestock/beef).

References:

Rankins, Jr., D.L. and J.W. Prevatt. 2013. Forage and co-product systems for stockers in the South: Have fundamental shifts in the markets changed the optimal system. *J. anim. Sci.* 91: 503-507

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