

## **Cattle Business in Mississippi – September 2006** **“Beef Production Strategies” article**

### **Alternative Feedstuffs for Beef Cattle Operations – Part II**

*Jane Parish – Extension Beef Cattle Specialist, Mississippi State University*

The Stocker Cents article presented information on a variety of feedstuffs available to Mississippi beef producers. This article continues the focus on alternative feeding options with additional feedstuff highlights. This information is intended to help beef producers (both cow-calf and stocker operators) better evaluate feeding options this year and is part of a more comprehensive publication: “Mississippi Beef Producer Guide to Coping with Drought Conditions”. It is available on the Internet at: [msucares.com/livestock/beef/drought.html](http://msucares.com/livestock/beef/drought.html). Contact your local Extension office for a copy of this publication or for more information on beef cattle nutritional programs.

#### **Cotton Products**

##### ***Whole Cottonseed***

Whole cottonseed is a major by-product of the cotton ginning process.

- ✓ **Excellent beef cattle feed, good energy and protein levels**
- ✓ **2 lbs. cottonseed roughly equal to 1 lb. each of corn and cottonseed meal**
- ✓ **Readily available in cotton-producing areas**
- ✓ **High fat content limits use levels to 25% or less of total dry matter intake**
- ✓ **Feed no more than 5 to 6 lbs. per head per day to mature cattle**
- ✓ **Feed no more than 2 to 3 lbs. per head per day to weaned calves**
- ✓ **Do not feed at more than 20% of the diet for cattle in stocker or finishing programs**
- ✓ **Must be hand fed**
- ✓ **Flow limitations in feeding bins and equipment, difficult to auger or gravity flow**

##### ***Cottonseed Hulls***

Cottonseed hulls are a by-product of the cotton industry.

- ✓ **Extremely palatable**
- ✓ **High in crude fiber, lowly digestible**
- ✓ **Can be used as the sole roughage source in cattle diets**
- ✓ **Good hay-replacer diet ingredient or alternative to chopped hay in mixed feeds**
- ✓ **Bulky with excellent mixing qualities at low levels in concentrate diets**
- ✓ **Should not exceed 10 to 25% of diet for growing or finishing cattle**
- ✓ **Often expensive**

##### ***Cottonseed Meal***

Cottonseed meal is a by-product of the cottonseed oil milling process.

- ✓ **Excellent locally available protein source**
- ✓ **Works well in a hot-mix (mixed with salt and offered free-choice)**

##### ***Cotton Gin Trash***

Cotton gin trash is a by-product of the cotton ginning process. Gin trash contains boll residues, leaves, stems, and lint.

- ✓ **Bulky**
- ✓ **Unpalatable, high fiber, low energy feed**
- ✓ **Inexpensive feed with limited uses**
- ✓ **Practical use is in hay-replacer diets when mixed with other feeds**

### ***Cotton Mote***

Cotton mote is the cotton extracted by a gin's lint cleaner during the cotton ginning process.

- ✓ **High fiber, low energy feed**
- ✓ **Palatability usually not a problem**
- ✓ **Most baled into 4' x 4' x 5' bales**
- ✓ **Can be handled and fed with same equipment used for large round hay bales**
- ✓ **Practical use is in hay-replacer diets with other supplemental feeds**

### **Wheat Products**

#### ***Wheat***

- ✓ **Should be mixed with other ingredients to reduce acidosis risk**
- ✓ **Feed at no more than 0.5% of animal body weight**
- ✓ **Coarsely cracked or rolled wheat is more digestible than whole grain wheat**
- ✓ **Not commonly used as a feed grain in Mississippi**

#### ***Wheat Middlings (Midds)***

Wheat midds result from the wheat milling process.

- ✓ **Good energy and protein content**
- ✓ **Available as loose meal or pellets**
- ✓ **Pelleted form cannot be stored for any length of time during hot, humid weather**
- ✓ **Practical use in Mississippi only during winter**
- ✓ **Should be combined with other ingredients to reduce risk of founder and bloat**
- ✓ **Moderately palatable**
- ✓ **Limit to 50% or less of total dry matter intake**
- ✓ **High phosphorus levels relative to calcium levels**

### **Peanut Products**

#### ***Peanut Hay***

Peanut hay is composed of the vines and leaves of peanut plants after the peanuts are harvested.

- ✓ **Protein content is fair to good**
- ✓ **Energy content is low**
- ✓ **Extremely palatable to cattle**
- ✓ **Highly susceptible to spoilage and losses unless stored under wrap or cover**
- ✓ **Can be used as the primary forage in cattle diets when supplemented properly**

#### ***Peanut Hulls***

Peanut hulls are the by-product of the peanut shelling process.

- ✓ **Extremely bulky and difficult to handle**
- ✓ **High in fiber, extremely low in energy and protein**
- ✓ **Availability depends upon proximity to shelling plant**
- ✓ **Uses in hay-replacer diets and as an extender in stocker concentrate diets**
- ✓ **Do not use finely ground or pelleted peanut hulls (health risk to cattle)**

#### ***Peanut Skins***

Peanut skins are the result of skin removal from the peanut kernel.

- ✓ **Very limited potential in beef cattle diets**
- ✓ **Difficult to handle, light, bulky, flow problems, can be blown by wind**
- ✓ **Moderate protein and energy levels**
- ✓ **High tannin levels that reduce protein digestibility and decrease palatability**
- ✓ **Do not use at levels of more than 10% of dietary dry matter**

### ***Raw Peanuts***

Raw, whole peanuts are typically valued higher for uses other than as cattle feed.

- ✓ **Very good energy and protein levels**
- ✓ **High fat content limits feeding levels**
- ✓ **Maximum of 4 lbs. per day should be fed to mature cattle**
- ✓ **Must be introduced to cattle gradually**
- ✓ **Check aflatoxin levels before feeding (do not exceed 200 ppb in cattle diets)**

### **Rice Products**

#### ***Rice Bran***

Rice bran is a by-product of the rice milling process.

- ✓ **Finely ground material, handling and storage in bins difficult, blending with other feeds improves flow**
- ✓ **Moderate protein levels**
- ✓ **High fat content unless defatted, limit to no more than one-third of diet**
- ✓ **Substantially less energy than soybean hulls even with high fat levels**
- ✓ **High fat rice bran less palatable and susceptible to rancidity in warm weather**
- ✓ **High phosphorus content**

#### ***Rice Millfeed***

Rice millfeed is a by-product of the rice milling process.

- ✓ **Finely ground material**
- ✓ **Combination of rice hull and rice bran**
- ✓ **Often highly variable in composition**
- ✓ **Founder is possible when fed at high levels**
- ✓ **Handling characteristics similar to rice bran**
- ✓ **Typically less expensive and longer storage life than rice bran**

#### ***Rice Hulls***

Rice hulls are a by-product of the rice milling process.

- ✓ **Extremely low nutritional value in beef cattle diets**

### **Additional By-Product Feeds**

#### ***Brewers Grains***

Brewers grains are a by-product of beer production.

- ✓ **With wet brewers grains, 75% of product transported is water**
- ✓ **Shelf life is a concern with wet feed**
- ✓ **Should be stored in anaerobic conditions or stacked and fed rapidly**
- ✓ **Good protein content**
- ✓ **Usefulness limited due to high water content**

#### ***Cane Molasses***

Cane molasses is a by-product from sugar manufacture.

- ✓ **Extremely palatable**
- ✓ **Excellent energy source**
- ✓ **Commonly blended with vitamins and minerals**

### ***Citrus Pulp***

Citrus pulp is made by shredding, liming, pressing, and drying the peel, pulp, and seed residues from citrus fruit.

- ✓ **Availability and cost-effectiveness for use in Mississippi is limited**
- ✓ **Good energy supplement**
- ✓ **Very digestible, low protein, high fiber feed**
- ✓ **Excellent feed if acquired, best deals usually in mid-winter**
- ✓ **Should be limited to one-third or less of the diet for growing beef cattle**
- ✓ **Initial palatability problems with calves quickly overcome**
- ✓ **Often pelleted to facilitate transportation**
- ✓ **Darkening toward a black color indicative of overheating**