

USING WHOLE COTTONSEED IN BEEF RATIONS

About Whole Cottonseed

- Whole cottonseed (WCS) has a unique triple-nutrient composition of protein, available fat and effective fiber.
- Rations are formulated to keep cattle healthy and optimize performance. WCS is easy to add to a ration, and its unique composition helps provide cattle with the vital nutrients they need to perform.
- The seed's kernel is the source of its energy and protein. Its fiber is found in the linters, which are short, white, hair-like strands that remain on each seed following ginning.
- When fed appropriately, WCS is safe and provides energy without affecting rumination or causing gossypol toxicity.
- WCS should not be fed to young, pre-ruminant calves.

WHOLE COTTONSEED CONTENT*	PROTEIN	ENERGY (FAT)	CRUDE FIBER
*on a dry matter basis	23%	20%	24%

Feeding WCS to Beef Cattle

- WCS can be used to supplement poor quality grass hay for pregnant and nursing cows, supplying energy and protein in a single feed ingredient.
- WCS' fat content helps improve body condition, which is vital for successful breeding.
- A study conducted by Oklahoma State University and the University of Arkansas found that cotton byproducts can be effectively used as a source of fiber, fats and protein in feedlot rations without adverse effects on performance or carcass characteristics.¹
- In another study conducted by Oklahoma State University and Texas Tech University, it was found that WCS, or products derived from processing WCS, can replace feedstuffs commonly used in beef cattle's finishing diets with no adverse effects on animal performance or carcass characteristics.²

- Whole cottonseed can be economically beneficial in feedlots, reducing the need for traditional roughages and additional protein and fat supplementation.²
- The general rule of thumb is to feed at a half-percent of a cow's weight,³ with the most effective amount of WCS in a ration for beef cattle is between 15-20% of the total ration.⁴
 - E.g., if a 1,000 lb. animal is consuming about 2.5% of its body weight as dry matter and given that 18% whole cottonseed is the maximum effective level, it's recommended a maximum of 4.5 lbs./head/day of whole cottonseed supplementation for that animal.⁴

Feeding Considerations

- Feeding methods should be considered when adding WCS to rations. Hand feeding in troughs prevents over-consumption. Some producers feed WCS in a self-feeder, although individual intake can be variable. A poor quality feed can greatly increase intake.⁵
- It's recommended to conduct a forage analysis and ask a nutritionist to accurately determine the amount of cottonseed needed to meet protein and energy requirements.

Adding WCS to Rations

- Cotton Incorporated suggests producers get in touch with their cottonseed merchant or feed dealer to check prices, or submit a request for cottonseed quotes through its [Cottonseed Marketplace](#).



¹ Warner, Andrea L, et al. "Effects of Utilizing Cotton Byproducts in a Finishing Diet on Beef Cattle Performance, Carcass Traits, Fecal Characteristics, and Plasma Metabolites." *Journal of Animal Science*, vol. 98, no. 2, 2020, doi:10.1093/jas/skaa038.

² Cranston, J. J., et al. "Effects of Feeding Whole Cottonseed and Cottonseed Products on Performance and Carcass Characteristics of Finishing Beef cattle." *Journal of Animal Science*, vol. 84, no. 8, 2006, pp. 2186-2199, doi:10.2527/jas.2005-669.

³ www.aces.edu/wp-content/uploads/2019/12/ANR-2608_WholeCottonseed112219L-G.pdf

⁴ http://media.clemson.edu/public/extension/beef_cattle/bc_3002.pdf

⁵ http://cottonpickin.tamu.edu/GeneralProduction/GeorgiaCottonByproductsforBeefCattleB1311_2.pdf