

# USING WHOLE COTTONSEED IN DAIRY 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 cows healthy and optimize performance. WCS is easy to add to a ration, and its unique composition helps provide cows 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\*

\*on a dry matter basis

#### PROTEIN

23%

#### ENERGY (FAT)

20%

#### CRUDE FIBER

24%

## WCS in Dairy Rations

- WCS is used as a source of energy, protein and fiber. It is particularly attractive for high producing, early lactating dairy cows that need both energy and fiber. The fiber in WCS assists in maintenance of normal milk fat percentage.<sup>1</sup>
- WCS can be used to supplement poor quality grass hay for lactating cows, supplying energy and protein in a single feed ingredient.
- WCS is proven to increase milk production and milk fat in dairy cattle.<sup>2</sup>
- The oil in WCS is released slowly into the rumen when the seed is chewed. This slow release helps protect microbial populations in the rumen to help maintain healthy rumen fermentation and fiber digestibility.<sup>3</sup>
- The energy content makes it a valuable addition for cows with reduced appetite, such as those that have just freshened or are under weather-related stress.
- WCS' fat content helps improve body condition, which is vital for successful breeding.

- Whole Cottonseed reduces the number of feed ingredients and often reduces the total number of other feedstuffs needed in the ration.
- WCS is an excellent forage extender, a high-fiber roughage designed to help replace a portion of forage in the diet.<sup>4</sup>
- Typical rations include up to 15% cottonseed on a dry matter basis.<sup>1</sup>
- Five to ten pounds of whole cottonseed per cow per day is considered economical, effective and safe.<sup>5</sup>
- When storing, protecting cottonseed from moisture is a necessity as with other feedstuffs to prevent mycotoxins from developing.
- A commodity shed is preferred for storing whole cottonseed, but a vacant silo, horizontal sealed silage bags or even bunker silos are also used.

## 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.
- 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](#).



cotton  
seed

<sup>1</sup> Oguz, F. Karakas, et al. "Effects of Varying Levels of Whole Cottonseed on Blood, Milk and Rumen Parameters of Dairy Cows." *Asian-Australasian Journal of Animal Sciences*, vol. 19, no. 6, 2006, pp. 852–856., doi:10.5713/ajas.2006.852.

<sup>2</sup> Smith, N.E., et al. "Digestibility and Effects of Whole Cottonseed Fed to Lactating Cows." *Journal of Dairy Science*, vol. 64, no. 11, 1981, pp. 2209–2215., doi:10.3168/jds.s0022-0302(81)82831-7.

<sup>3</sup> [https://afs.ca.uky.edu/files/using\\_byproducts\\_to\\_feed\\_dairy\\_cattle.pdf](https://afs.ca.uky.edu/files/using_byproducts_to_feed_dairy_cattle.pdf)

<sup>4</sup> <https://fyi.extension.wisc.edu/forage/files/2014/01/ShortFeedStrat-Shaver13.pdf>

<sup>5</sup> [https://projects.ncsu.edu/cals/an\\_sci/extension/dairy/205-d.pdf](https://projects.ncsu.edu/cals/an_sci/extension/dairy/205-d.pdf)

