FEEDS & FEEDING

A TECHNICAL PUBLICATION OF THE ANIMAL NUTRITION ACADEMY
Volume 2 – Issue 31

How major beef regions use cottonseed products

Ioannis Mavromichalis, MSc, PhD

This issue examines where cottonseed products remain important in beef cattle feeding, how whole seed, meal, cake, and hulls are used, and what reported feeding rates mean.

Cotton is cultivated primarily for its fiber, but its seed also supplies vegetable oil and animal feed. Major producing countries include China, India, Brazil, and the United States, with Australia and several Asian and African countries contributing additional supplies. Where cotton gins and oil mills operate near cattle farms, their coproducts can become established ingredients. International trade extends their use beyond producing areas. Their importance depends on processing infrastructure, transportation costs, storage, and competition from other protein, energy, and fiber sources. The examples below illustrate regional use rather than rank countries by consumption.

Whole cottonseed retains oil, protein, hulls, and usually lint, supplying energy, protein, and fiber together. Representative values are approximately 20–25% crude protein, 15–20% fat, and 18–37% crude fiber on a dry-matter basis. Cottonseed meal serves mainly as a protein source, while mechanically extracted cake generally retains more residual oil. Dehulling changes both protein and fiber, and product names are not consistent across markets. Hulls provide a separate, low-energy fibrous ingredient. Feeding rates therefore require the actual analysis, total dietary fat, gossypol exposure, and cattle class.

Brazil remains a major feedlot user

A survey published in 2025 describing Brazilian feedlot nutritionists' practices reported whole cottonseed averaging 14.1% of diet dry matter among seven respondents naming it their primary concentrate coproduct. Recommendations ranged from 5% to 20%. Cottonseed cake averaged 15.7% among six comparable respondents. These are respondent-group means, not national averages or feeding limits. At 10 kg daily dry-matter intake, they represent approximately 1.4 kg of whole-cottonseed dry matter or 1.6 kg of cake dry matter. The survey also documented substantial use of distillers grains, illustrating competition among locally available coproducts.

United States has regional markets

Cottonseed products have an established place in cattle feeding across the southern states. Whole cottonseed supplies protein, oil, and fiber, while cottonseed meal and hulls serve different formulation roles. Oklahoma State University tested whole cottonseed in place of distillers grains and prairie hay in balanced finishing rations. Separate OSU receiving-cattle formulas include cottonseed hulls at 14–20% as fed. This range describes hulls in receiving diets, not whole cottonseed in finishing diets. Dairy demand also influences availability and price. Consequently, the economic opportunity for beef producers depends on the product, freight, competing feeds, and the complete ration.

Australia feeds whole cottonseed

Australia combines cotton production with beef feedlots and extensive grazing systems. Historical Meat & Livestock Australia feedlot guidance described whole cottonseed inclusions around 8–12%, while discussing research potential at higher levels. These figures provide context rather than a universal ceiling or current industry average. Whole seed contributes protein, fat, and fiber, but its oil limits how much can be accommodated alongside other fat sources. Queensland grazing research also evaluated 1 kg/head daily for weaners on buffel grass pasture. That supplement rate should not be confused with a complete-ration inclusion. Seasonal supply, storage, and freight influence commercial use.

China draws on Xinjiang supplies

China has a large cotton-processing industry, especially in Xinjiang, generating meal and other cottonseed fractions for livestock. In general, based on local observations, finishing cattle can receive various amounts of cottonseed coproducts ranging from 10 to 20% total diet dry matter. Cottonseed products compete with other feedstuffs, especially imported protein sources. The potential to use more cottonseed coproducts is substantial, but largely unrealized.

India uses cake in concentrates

India's cotton and oil-extraction industries supply cake and meal for cattle feeding. India has large dairy and buffalo herds, which account for much of the country's cattle-concentrate use. In general, mechanically extracted cake is the main coproduct. It retains variable amounts of oil and fiber, depending on local processing and dehulling procedures. Kerala Agricultural University examples include cottonseed cake at 10% or decorticated cake at 15% of concentrate mixtures. Locally available cottonseed cake complements or replaces other oilseed meals depending on quality.

Other regions produce and trade

Cottonseed products also enter cattle-feeding markets in parts of Asian and African cotton-producing areas. Local oil extraction makes meal and cake available, while hulls provide another outlet for the crop. Greece and Spain account for nearly all European Union cotton production and supply associated feed materials. Trade can extend availability beyond producing regions, but cotton production alone does not establish how much is fed to cattle. Reliable region-wide feedlot inclusion averages are generally unavailable. Product composition, quality, delivered price, competing ingredients, and the complete ration determine whether cottonseed products are attractive to individual buyers.

In Brief, cottonseed remains relevant because a fiber crop also provides energy, protein, and fibrous feeds for cattle. Whole seed, meal, cake, and hulls serve different purposes. This discussion demonstrates continuing use of a traditional feedstuff, not recommendations. Nutritional advantages and limitations deserve a separate discussion.

DISCLAIMER Feeds & Feeding is published by Animal Nutrition Academy for educational and reference purposes. Although reasonable care is taken to ensure accuracy, the author(s) and Animal Nutrition Academy accept no liability, to the extent permitted by law, for loss or damage arising from reliance on or application of this material. Readers remain responsible for its interpretation and use.

COPYRIGHT NOTICE © Animal Nutrition Academy. All rights reserved. No part of this publication may be reproduced, stored, or transmitted in any form without prior written permission. www.animalnutritionacademy.com.