

# Animal Feed Efficiency in Finishing Beef Cattle and Feed Ingredients from Animals

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## Description

Animal feed efficiency plays an important role in the overall performance and sustainability of beef cattle production, particularly during the finishing phase. The finishing phase refers to the period when cattle are fed a high-energy diet to promote rapid weight gain and muscle development before slaughter. This stage is pivotal in determining both the economic viability of beef production and the welfare of the animals. Feed efficiency is a measure of how well cattle convert feed into body weight and improving this efficiency can lead to reduced production costs, enhanced profitability and less environmental impact. At the same time, the selection and quality of feed ingredients, particularly those derived from animal sources, are need factors influencing feed efficiency.

### Feed efficiency in finishing beef cattle

The efficiency with which cattle convert feed into weight gain, known as Feed Conversion Ratio (FCR), directly affects the cost of production. Lower feed efficiency means that more feed is required to achieve a given weight gain, which increases feeding costs. As feed represents one of the largest expenses in beef cattle farming, improving feed efficiency is a key strategy for reducing production costs. Cattle that are more feed-efficient require fewer resources to reach market weight, which also has positive implications for sustainability.

Feed efficiency is influenced by various factors, including genetics, age, health and management practices. However, one of the most influential factors is the type and quality of feed ingredients used during the finishing phase. In this phase, cattle are typically fed a diet rich in energy to promote rapid growth and the ingredients chosen for this diet can significantly affect how efficiently the animals utilize the feed.

Animal-derived feed ingredients are commonly used in finishing diets for beef cattle due to their high nutritional value, particularly their protein and energy content. These ingredients can include animal by-products, such as meat and bone meal, fishmeal, blood meal and feather meal. These ingredients provide a rich source of need amino acids, minerals and vitamins that are vital for the growth and development of beef cattle.

Derived from the rendering of animal carcasses, meat and bone meal is a high-protein ingredient that supplies a balance of need amino acids. It is particularly valuable in finishing diets because it promotes muscle development and overall weight gain. However, its use must be managed carefully to avoid potential risks, such as the spread of diseases like Bovine Spongiform Encephalopathy (BSE), though strict regulations have mitigated these concerns.

Fishmeal is another animal-derived feed ingredient rich in high-quality protein and omega-3 fatty acids. It is a valuable source of need nutrients that support the growth and health of finishing cattle. Fishmeal has been shown to improve feed efficiency in cattle by enhancing their overall metabolic processes, including fat deposition and muscle growth. This is a highly concentrated source of protein, derived from the dried blood of slaughtered animals. Blood meal is rich in lysine, an need amino acid and has been used to supplement cattle diets to improve protein intake and growth rates. It is particularly beneficial in boosting the overall feed conversion rate during the finishing phase.

Feather meal, made from the hydrolyzed feathers of poultry, is a high-protein ingredient often used to enhance the nutritional value of cattle feed. Though it is rich in protein, its digestibility can be lower than other protein sources, so it is typically included in a balanced diet with other feed ingredients.

### Animal feed ingredients on feed efficiency

The use of animal-derived ingredients in cattle diets offers several advantages in improving feed efficiency. The high protein and energy content of these ingredients contribute to more rapid growth and better feed conversion. By ensuring that cattle have access to the necessary building blocks for muscle growth and fat deposition, these ingredients help maximize weight gain, which is particularly important during the finishing phase when cattle are being prepared for slaughter.

Moreover, animal-based feed ingredients often contain bioavailable nutrients that are easily digestible for cattle, improving their ability to utilize the nutrients in the feed more effectively. This enhanced digestibility leads to better feed

efficiency, as less feed is required to achieve optimal growth. The balance of need amino acids, vitamins and minerals in animal-

derived ingredients supports the metabolic processes that are critical for cattle growth, further enhancing feed efficiency.