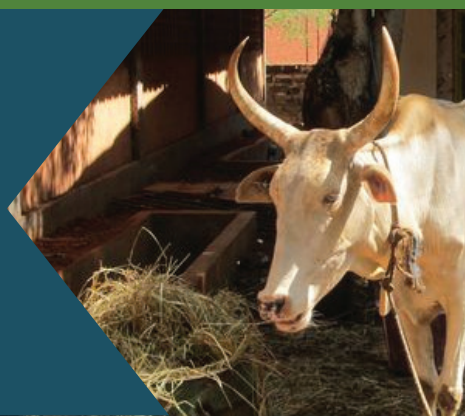
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future Innovation Lab for Livestock Systems

INNOVATION SUMMARY: IMPROVED NUTRITIONAL REQUIREMENT DATA FOR LOCAL LIVESTOCK BREEDS

This innovation involves the formulation of nutrient requirements specific to local or indigenous livestock breeds in Ethiopia and Burkina Faso. Currently, specific nutrient requirements formulated for local livestock breeds are lacking, although these are the predominate types of animals in both countries. These nutrient requirements are being determined through a meta-analysis of existing data for dairy cattle and through experiments for tropical and sub-tropical sheep.



Lead Institution: University of California, Davis

Developed In: Ethiopia & Burkina Faso

Innovation Type: Technology

New/Adapted: Adapted

Created For: Women and Men

Nutrition Linkage: Improved Productivity

The Problem and Its Importance

The majority of livestock kept in Ethiopia and Burkina Faso are local breeds or cross breeds. In developing countries, ration formulation and other nutrition interventions in livestock production systems depend on nutrient requirement formulas developed from research on breeds in developed countries. However, given the differences in genetics, environmental and other factors between local and Western breeds, the nutrient requirements may not be the same. Inaccurate nutrient requirement formulas can hinder targeted feed improvement efforts by calculating diets that lead to nutrient deficiencies or wastage of feed.

The Innovation and Potential Benefits

Nutrient requirements in livestock vary with age, breed, sex, physiological status, management and environmental conditions. Recommendations by the United States (US) and United Kingdom (UK) national research councils are the most commonly used guidelines to formulate diets for livestock, which do not take into account these differences among livestock in Africa. Research in Burkina Faso on energy requirement of local sheep breeds and a meta-analysis on the requirement of tropical dairy cattle revealed that the guidelines from US and UK national research councils do not accurately represent the requirements of local livestock breeds. The results of the study with local sheep breeds in Burkina Faso suggest that the energy requirements of Djallonke sheep are greater than the requirements recommended by the US National Research Council and the UK Agricultural and Food Research Council. Similarly, results of meta-analysis of energy requirements of tropical dairy breeds revealed that energy parameters estimated through the meta analysis was different than commonly used values derived from Bos taurus or temperate breeds. This innovation can help to improve animal productivity among both smallholder farmers and commercial livestock producers that depend on local and crossbred animals.

Application of the Innovation

This innovation will be of importance to livestock extension agents, who assist smallholders and commercial producers in the formulation of balanced rations. The use of accurate nutrient requirement data in formulating ration for a given breed will result in improved productivity and save costs of production. The innovation is also important for local feed processors, since it can help them formulate commercial concentrates specifically suited for local breeds, which are not currently available.

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