



FEED THE FUTURE

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

FEED THE FUTURE INNOVATION LAB FOR LIVESTOCK SYSTEMS EQUIP—STRENGTHENING SMALLHOLDER LIVESTOCK SYSTEMS FOR THE FUTURE Component 3 of Feed subproject

Determining and Meeting Nutrient Requirements of Indigenous Livestock with Balanced Rations

Detailed knowledge of the nutrient requirements of livestock is important for optimizing their productivity. This knowledge is indispensable when formulating balanced rations that match the nutrient requirements of animals. Poor knowledge of the nutrient requirements of indigenous animals that supply 97% of the milk in Ethiopia, and all of the small ruminant meat in Burkina Faso, prevents formulation of balanced rations for the livestock in these countries.

Consequently, even where good feed is available in the more intensive Ethiopian and Burkinabe production conditions, rations are not properly formulated. Therefore, the animals are typically underfed, leading to considerable productivity gaps for milk in Ethiopia and for meat in Burkina Faso, and significant losses of potential income for smallholders, and feed wastage.

Research locations:

- Ethiopia
- Burkina Faso

Implementing Partners:

- University of California Davis
- Ethiopian Institute of Agricultural Research (EIAR)
- Institute for the Environment and Agricultural Research (INERA), Burkina Faso

Duration: 2017-2022

Donor: Bill & Melinda Gates Foundation



Research Objectives and Activities

- To undertake a review of the nutrient requirements of indigenous breeds of dairy cows and small ruminants in Ethiopia and Burkina Faso, respectively
- To develop software and a mobile app for formulating least-cost balanced, and environmentally sensitive rations with local ingredients
- To formulate least-cost balanced rations to enable accurate feeding of livestock using locally available feed resources

To achieve these objectives, researchers will first undertake a comprehensive review of nutrient requirements of tropical cattle and small ruminants. These activities will be followed by experiments to determine the nutritive value of feeds, and nutrient requirements of indigenous animals. A ration formulation software for formulating least-cost rations based on locally available feeds will be developed. Trainings and demonstrations will be provided to help build the capacity of local farmers to use the ration formulation software.

Anticipated Results and Deliverables

- Documentation of nutrient requirements of the indigenous breeds of dairy cows and small ruminants in Ethiopia and Burkina Faso, respectively
- Least-cost balanced rations to enable accurate feeding of livestock will be developed, which will considerably increase production of meat and milk in both countries

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