



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 4 of Feed subproject

Improving Capacity to Analyze the Nutritional Value of Livestock Feeds with Near Infrared Reflectance Spectroscopy

Information about feed quality is indispensable for decisions in all areas of feed production, development, quality control, marketing, and ultimately sustainable improvement of livestock productivity. Reliable feed quality assessments are also important for predicting animal performance and greenhouse gas emissions from livestock production.



The use of wet chemistry, or traditional laboratory analysis, although a common technique for feed analysis in Ethiopia and Burkina Faso, is constrained by technical, financial and logistic limitations. This project aims to develop local capacity among communities of practice to use Near Infrared Reflectance Spectroscopy (NIRS), for feed analysis, which is common in industrial countries. NIRS has great potential to support future feed analysis and characterization in Ethiopia and Burkina Faso at low cost and it will create ample opportunities for research and improved labeling of feeds in the commercial feed sector.

Research locations:

- Ethiopia
- Burkina Faso

Implementing Partners:

- International Livestock Research Institute (ILRI)
- Institute for the Environment and Agricultural Research (INERA), Burkina Faso

Duration: 2017-2022

Donor: Bill & Melinda Gates Foundation

Research Objectives and Activities

- To develop NIRS equations for locally available feed resources in Ethiopia and Burkina Faso
- To map, link and create Communities of Practice around actual and potential NIRS providers and customers in Ethiopia and Burkina Faso
- To develop and employ low cost mobile NIRS devices with backward linkages to stationary NIRS systems
- To establish comprehensive feed price-quality relationships and explore technical and institutional mechanisms for feed quality control, feed ingredient labelling and ration balancing by advisory services

To achieve these objectives researchers will provide trainings to improve the technical capacity of Community of Practice members in the use of NIRS, establish a NIRS lab at INERA in Burkina Faso, update existing NIRS machines in Ethiopia and support development of business plans with private NIRS laboratories.

Anticipated Results and Deliverables

- Capacity for use of NIRS, and equations and calibrations for quick assessment of nutritive value of diverse locally available feed resources
- Community of Practice (CoP) including representatives of institutions that own stationary and mobile NIRS laboratories in Ethiopia and Burkina Faso that will provide affordable and timely feed testing for public and private stakeholders

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