Feed the Future Innovation Lab for Livestock Systems

INNOVATION SUMMARY:
NIRS COMMUNITY OF PRACTICE

Near Infrared Reflectance Spectroscopy (NIRS) is a rapid and accurate alternative to wet chemistry analyses that evaluates the chemical components of forages and feeds. NIRS can help meet a growing need to characterize locally available forages and feeds. However, the use and adoption of NIRS in developing countries is limited by currently available technical knowledge and resources. A Community of Practice approach is being applied for NIRS in Ethiopia and Burkina Faso in order to resolve this issue.

Lead Institution:	**Developed In:**	**Innovation Type:**	**New/Adapted:**	**Created For:**	**Nutrition Linkage:**
International Livestock Research Institute	Ethiopia & Burkina Faso	Approach	Adapted	Women and Men	Improved Productivity

The Problem and Its Importance

Several factors contribute to the limited adoption of NIRS technologies in Africa, including lack of robust calibration equations to represent samples, limited samples from diverse feed types available across different production systems, lack of skilled scientists to calibrate, validate and update equations, and poorly equipped laboratories. These issues can be addressed in a holistic manner through the Community of Practice approach by developing a network of scientists and laboratories to foster mutual collaboration and sharing of best practices. Additional key issues include start-up costs for desk-top instruments and software, and service or technical support for proper maintenance.

The Innovation and Potential Benefits

Members of the Community of Practice will be able to share resources such as feed reference samples, spectral data and equations. Members, including animal nutrition laboratories (commercial and university), NIRS equipment companies, feed processing firms, and commercial farms, can obtain relevant resources and share improvements or findings in their respective domains. Through sharing of data and resources, the prediction power and accuracy of NIRS will increase, which will contribute to greater adoption and use. When local laboratories and other members of Community of Practice participate in the generation of data, then there is a chance that feed types that are not normally represented in the universal FOSS equations get represented. More accurate feed nutritive values will contribute to improved feeding practices, leading to increased animal productivity.

Application of the Innovation

This innovation is applied through the creation of a Community of Practice among NIRS stakeholders, such as those who own, use or produce NIRS machines. The Community of Practice can foster the cooperation and communication needed to implement collaborative activities that can improve NIRS performance for the entire group, such as networking NIRS machines so that they can share wet chemistry and spectral data. The Community of Practice members meet regularly to evaluate progress in the implementation of collaborative activities as well to identify potential problems.