

Enhancing feed quality and safety in developing countries: ongoing capacity development activities of some international organizations

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Addressing the feed quality and safety challenges is vital for sustainable development of the livestock sector. Inadequate feed quality and safety assessments could adversely impact a country's export and increase wastage of feed and food items for not meeting the quality and safety standards. Generation of sound data is fundamental to implementation of nutritional principles and for getting benefits from them. Feed industries are neither able to resource good quality ingredient nor prepare balanced feeds without having reliable chemical and nutritional value data on feed ingredients. In addition, without robust data on chemical composition, precision feeding or balanced feeding approaches that demand nutrient provision, as per the nutrient requirements of the animal cannot be used. Unbalanced feeding results in lower profit to farmers, production below the genetic potential of animals, reproductive inefficiencies and increased release of environment pollutants. Feeding of safe feeds free of contaminants is imperative to produce safe animal products – a prerequisite for human health and wellbeing. Feeds containing physical, chemical and biological hazards also adversely affect animal health and productivity. Ensuring good laboratory practices increases efficiency of the laboratories, enhances the health and safety of the laboratory workers and protects the environment from laboratory-discharged pollutants. Other spin-offs are enhanced research and education capabilities of students graduating from R&D institutions, increased quality of research, and meeting requirements of international standards. Use of the good practices also enhances confidence of the customers towards analytical laboratories serving them. Because this ensures that all technical, administrative and human factors that influence the quality of the results being generated are under continuous supervision with the aim to prevent non-conformity and make improvement where needed. During the last two years proficiency tests conducted by FAO and International Analytical Group (IAG) for feed analysis laboratories have consistently showed higher coefficient of variation (up to 9-fold) for almost all the analyses conducted in developing country laboratories than developed ones, suggesting greater need to improve functioning of such laboratories; and capacity development of feed analysts and laboratory managers being an important step towards its realization. Some of FAO's capacity building activities include producing laboratory manuals for quantification of chemical constituents including mycotoxins and microbiological agents in feeds (with a focus on integration of quality control systems) and for providing guidance on setting up and accreditation of feed analysis laboratories and organizing training workshops and develop e-learning courses based on these manuals; managing and coordinating a network of experts that provides guidance on laboratory analyses to developing country laboratories; making available feed factsheets through a Feed Resource Information System (Feedipedia) that helps to prepare and use quality and safe feeds; conducting proficiency tests for chemical constituents, jointly with IAG, and for aflatoxins, jointly with Texas A&M University (TAMU); building capacity in member states to conduct aflatoxin quantification in feed; assisting countries to develop feed quality and safety standards; conducting e-learning courses on risk assessment of biological and chemical hazards in feeds, generation of sound data on feed composition, validation of analytical assays, putting in place quality control systems for feed analysis, accreditation of laboratories jointly with TAMU, and on quality feed preparation and use; and providing trainings on near infrared spectroscopy (NIRS) for feed analysis. The capacity development is carried out by organizing workshops through FAO Regional Offices, FAO Technical Cooperation Projects and national bodies; online and hands-on trainings; webinars; and conferences. A large number of trainees have benefitted from these efforts. A number of other organizations such as ILRI, World Bank, CIRAD are also actively engaged in various capacity building activities in the area of feed quality and safety, which will also be presented.