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Improving Livestock Productivity in Honduras

by Rodolfo Quevenco

An IAEA project is set to move from laboratories to farm.

Honduras is poised to bring a set of integrated laboratory-based services for the benefit of cattle farmers, as an IAEA-supported project to improve livestock productivity moves into its third phase.

The project addresses two main areas. First, it directly assists milk and meat producers by determining the nutritional value of pastures, forages and potential cattle feeds; by reinforcing the sperm bank and selection criteria for cattle for higher meat and milk production; and by improving diagnosis of diseases affecting livestock. Secondly, the project also helps introduce new and laboratory techniques to

ensure quality of the country's meat and milk products bound for export. The ultimate goal of all these activities is to improve livestock production in the country.

"In the first and second phases of the project, we concentrated on building the laboratory infrastructure," says Juan Carlos Ordoñez, the project counterpart at Honduras' "Servicio Nacional de Sanidad Agropecuaria (SENASA)" in the Ministry of Agriculture. The objective was to establish a strong basis for delivering a set of integrated services in areas such as genetic improvement, residue analysis, nutrition, health and reproduction.

Through assistance from international donors, including the IAEA, the laboratories operating under SENASA are well-equipped and efficiently dedicated to accomplish these tasks. Key IAEA contributions included a real-time PCR machine and equipment for the semen processing laboratory, which greatly boosted Honduras capabilities in disease diagnostics and livestock reproduction.

The Agency has also helped train key personnel in the use of these equipment, as well as in the practice of nuclear and molecular techniques including radioimmunoassay (RIA). RIA has been the dominant technology in the field of livestock productivity and one of the most common techniques being used in the IAEA project in Honduras. The technique employs radioisotopes to measure the concentration of a given molecule in a biological sample. For reproduction, the most commonly measured molecule has been progesterone.

"Measuring molecules like progesterone is important because it gives experts a much better understanding of the reproductive physiology of the animals," according to Mario Garcia Podesta, consultant at the Animal Production and Health Section in the FAO/IAEA Joint Division of Nuclear Techniques in Food and Agriculture.

As the Section's technical officer for Honduras, Garcia recently concluded a field review visit of the project and assessed the capabilities and future needs of the laboratories in light of project objectives.

"It is evident that SENASA authorities and laboratory directors play a key role in implementing new technologies to be more efficient and accurate in the results," he said. Garcia recommends that, for the project's next phase, more focus should be made on livestock productivity and direct technical advice to cattle farmers.

"In the third phase of the project, we intend to move out to the farms... strongly!" Juan Carlos Ordoñez emphasized. As a starting point, the project is relying on data provided through a sizeable database of up to 200 cattle farms. For this year alone, data on the production, reproductive and health status of livestock at 6-12 farms out of the 200 will be constantly monitored in an effort to suggest and implement better management practices. The network of diagnostic laboratories now in place in Honduras will play a key role in measuring the technical impact and economic benefit of these intervention efforts.

Improving livestock production is becoming more and more a priority among many developing coun-



tries, as diets shift from plant-based protein to animal-based protein. Also issues as diverse as nutrition, health, reproduction, animal disease and export controls mean that many countries face growing challenges to implement sustainable livestock productivity programmes. The IAEA currently have over 40 livestock productivity programmes in various stages worldwide which aim to help countries improve livestock productivity and health. From 8-15 June, an international symposium is taking place in Vienna that will examine the challenges and opportunities in livestock productivity, as well as the application of technologies, including nuclear-based ones, that would help to support sustainable livestock productivity in developing countries.

For countries like Honduras, livestock productivity has strategic macro-economic importance to the economic well-being of the country and for reducing poverty.

"In Honduras, there is a saying that livestock constitutes the savings of the country," Juan Carlos Ordoñez explains. "Most rural families raise a pig or a small herd of cattle that, come December, they can sell for cash. Thus, it truly is an 'alcancía' (personal savings) of the country." ❄

Technical assistance from the IAEA has helped the livestock reproduction laboratory in Honduras to provide better cross-breeding services to local farmers.

(Photo: D. Calma/IAEA)

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