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However, over the decades, the livestock industry has been confronted by occasional flare-ups of transboundary animal diseases (TADs).

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Through their Joint Division, support from FAO and the International Atomic Energy Agency (IAEA) enabled Mongolia to strengthen capacities in controlling animal diseases, especially transboundary diseases, by boosting research on safe nuclear and nuclear-derived techniques for diagnosis for quicker detection of the disease, training personnel on these techniques, and providing equipment and expert services.

MONGOLIA ENHANCES CONTROL OF CROSS-BORDER ANIMAL DISEASES THROUGH INNOVATIVE APPROACHES

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EFFECTIVE FOOT-AND-MOUTH DISEASE CONTROL IN MONGOLIA

A major animal health problem in Mongolia has been the frequent outbreaks of FMD, particularly in the eastern provinces. The genetic differences among the FMD virus strains responsible for these outbreaks make it difficult and time consuming for inexperienced laboratories to accurately characterize the field virus strain and to match it to the most appropriate FMD vaccine for controlling the disease. As a result, when FMD first emerged in Mongolia, the spread of the virus and the damage to the farmer’s economy were much more destructive than in other countries with better diagnostic facilities.

With the Joint FAO/IAEA Division’s assistance, Mongolia’s capacities in the diagnosis of animal diseases, especially transboundary diseases, were strengthened.

Mongolia’s Biosecurity Level 3 Laboratory was renovated. Additionally, its staff has been trained, standard operating
KEY FACTS

THE LOSS OF FARMERS’ ANIMALS CAUSED BY TRANSBOUNDARY ANIMAL DISEASES HAS BEEN REDUCED BY THE IMPROVED RESEARCH AND DIAGNOSTIC Capacities OF MONGOLIAN LABORATORIES AND VETERINARIANS USING SAFE NUCLEAR AND NUCLEAR-DERIVED TECHNIQUES

THE MONGOLIAN GOVERNMENT IS NOW ABLE TO EFFECTIVELY IMPLEMENT APPROPRIATE AND TIMELY RESPONSE MEASURES TO DEAL WITH ANIMAL DISEASE OUTBREAKS

NUCLEAR TECHNIQUES FOR CONTROLLING ANIMAL DISEASES INVOLVING DIAGNOSIS, SURVEILLANCE, AND QUALITY ASSURANCE AT VETERINARY DIAGNOSTIC LABORATORIES, HAVE BEEN SUCCESSFULLY APPLIED

THE RECENT QUICK CONTAINMENT OF FMD OUTBREAKS AND THE DETECTION OF PPR EMERGENCE IN THE COUNTRY DEMONSTRATE THE EFFECTIVENESS OF INSTITUTIONAL CAPACITY TO CONTROL ANIMAL DISEASES

JOINT FAO-IAEA PROGRAMME

E-MAIL
NAFA.Contact-Point@iaea.org

WEBSITES
http://www.iaea.org/topics/livestock

NUCLEAR TECHNOLOGIES TO MINIMIZE THE SPREAD OF HIGHLY CONTAGIOUS ANIMAL DISEASES

Since 1987, the Joint FAO/IAEA Division has provided technical support to the animal production research group at the Mongolian State University of Agriculture, the animal health group at the Institute of Veterinary Medicine (IVM), and the State Central Veterinary Laboratory (SCVL).

This has included capacity building on animal production and health research, training of personnel, and provision of equipment and expert services to the IVM and SCVL on the diagnosis of animal diseases, especially transboundary animal diseases.

Individual and group training were conducted, and more than 100 participants were trained on the use of nuclear-derived and molecular techniques for animal disease diagnosis, surveillance of TADs, and quality control in veterinary diagnostic laboratories.

The training also included essential aspects on how to correctly collect samples and manage potentially infected livestock, in order to ensure the early, rapid, and accurate analysis of biological field samples.

An irradiation unit was delivered to Mongolia to evaluate the protective capacity of irradiated vaccines against various bacterial and viral diseases. As a first step, a research protocol was devised for a Mycoplasma agalactiae vaccine and experimental work was initiated.

Before PPR was reported in Mongolia, the risk was already high due to its prevalence in neighbouring countries. Preparatory research was therefore initiated at IVM and SCVL in 2014 to validate the diagnostic techniques for yaks and camels and to increase surveillance.

Thanks to the increased capacity, awareness, and monitoring, PPR was reported in 2016 in domestic small ruminants as well as in wildlife. Since then, three regional veterinary laboratories in the PPR affected areas have been equipped with diagnostic instruments for disease surveillance.

FAO and IAEA continue to assist Mongolia with training, equipment, consumables, and reagents for laboratory diagnosis of TADs.

SCVL staff were trained on the use of the one-step multiplex assay, developed by the Joint FAO/IAEA Division, for the detection of bacterial and viral pathogens such as PPR virus and Capripoxvirus from small ruminants and on its panpox assay for detection and genotyping of the eight poxviruses.

More recently, IVM staff were trained on the analysis of whole genome sequencing data of influenza virus, using free software.

MONGOLIA IS ON TRACK TO MANAGE ANIMAL DISEASES

These dedicated efforts place Mongolia in a good position to control transboundary animal diseases and to use these tools as a springboard towards re-establishing the country’s position in export markets as a source of high quality meat.