

Controlling brucellosis in animals and humans in Tajikistan

The challenge...

Brucellosis is a widespread infectious disease of cattle, sheep and goats, which can spread to humans. In Tajikistan, national diagnostic and preventive measures against the disease are limited, and as a result, an increased number of people have been infected. Effective control of brucellosis requires mass education to increase public awareness and a national disease management programme, based on reliable epidemiological data regarding its incidence at individual and herd/flock level. The Government of Tajikistan requested the IAEA's assistance to build national diagnostic and epidemiological capacities, to provide a basis for science based disease control approaches.

The project...

A technical cooperation project was initiated in 2007 to establish nuclear and nuclear related serological (enzyme linked immunosorbent assay (ELISA)) and molecular (polymerase chain reaction (PCR)) technologies at the Veterinary Research Institute (VRI) to improve the diagnosis of brucellosis in cattle, sheep and goats, and thus prevent the spread of the disease between animals and humans. Laboratories using ELISA and PCR were refurbished and modern equipment with computerized data processing capabilities was installed. Associated reagents and supplies were also delivered.

Seven staff were trained in epidemiological and diagnostic procedures, laboratory management and quality control. The Government of Tajikistan has now allocated funds for a large new building, procurement of additional equipment and the provision of land for further VRI development.

The impact...

Through the project, quality controlled diagnostic procedures for the successful control of brucellosis in Tajikistan have been established. Highly sensitive technologies that allow for easy detection of zoonotic disease such as brucellosis and the tracing of the infection to its source have been implemented. The VRI is now the preferred institution for reliable diagnostic results and has been singled out by State authorities for verification purposes, for the establishment of baseline data on the distribution of brucellosis in cattle, sheep and goats, and for planning of control programmes. The VRI is capable of performing at least 1000 serological and up to 150 molecular analyses a day.

The enhanced capacity has benefited farmers, commercial and non-commercial livestock owners, veterinarians and the human population in general. The diagnosis of not only brucellosis, but also tuberculosis, smallpox, bird flu, leptospirosis, rinderpest, distemper, rabies and goat pleuropneumonia has been facilitated. The capacity to diagnose diseases transmissible from animals to humans (zoonoses) is of particular importance.



Dr Karimov of VRI washing an ELISA plate.