

## BIOSAFETY AND DIAGNOSTICS OF BRUCELLOSIS AT LMA

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Brucellosis is one of the most common livestock zoonosis in Georgia, resulting in significant economic losses. Many species of animals and humans become ill with Brucellosis. The laboratory of the Ministry of Agriculture (LMA) investigates suspect-Brucella samples each year. Over the last three years, over 7,000 samples were tested. From this, 753 were positive. During the CBR, GG-17 project, suspect samples were collected from three regions: Kakheti, Kvemo Kartli, Imereti. Samples included blood, serum and milk from cattle, sheep, and goats. Samples were tested using serology, bacteriology, and molecular diagnostics. In total, 32 bacterial isolates were recovered and identified: 11 samples contained *B. melitensis*, 22 contained *B. abortus* and were confirmed by AMOS PCR. Samples were also tested using serology, bacteriology, and molecular diagnostics. GIS was also used to map positive cases and suspect isolates to construct maps based on strain location and epidemiological data from the livestock.

## БИОБЕЗПЕКА ТА ДІАГНОСТИКА БРУЦЕЛЬОЗУ В ЛАБОРАТОРІЇ МІНІСТЕРСТВА СІЛЬСЬКОГО ГОСПОДАРСТВА ГРУЗІЇ

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## RABIES IN GEORGIA

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Rabies is a zoonotic and endemic disease in Georgia. The disease is and demonstrates a stable epizootic and unfavorable situation. There are two types of epizootic Rabies. The first one is a forest type. In such case the infection used to be spread via wild animals and a city type when domestic animals are infected and the infection is spread via homeless dogs and cats. Some preventive and elimination measures have been carried out against Rabies though the infection still remains an issue. 1,335 cases of Rabies were registered during 2000–2012. Among them are *Mammalia* 86.6 %, domestic animals 12 % and wild mammals 1.2 %. Epidemiologic researches of Rabies proves that wild animals play a great role in spreading the infection. The incidence of attack of wild animals on domestic animals and humans has become more frequent, especially during seasonal pasturing in the summer. The territory of Georgia includes a vast mountainous area (>50 %) and approximately 36 % of the country is woody where more than 100 species of mammals are the inhabitants. Pathogen samples of 36 different species of wild animals were investigated at the lab from 2006 to 2012. 17 positive cases were registered and revealed. Epidemiological research proves that cases of Rabies in domestic mammals are revealed in the villages directly bordered to the woody areas. (The risk of get infected by Rabies in such vicinities is especially high). The migration process of wild animals directly impacts the increase in Rabies cases of domesticated animals. There is an active planned/scheduled campaign of oral vaccination twice a year at the regional level. A vaccination risk assessment shall be taken into consideration while the oral vaccination campaign is initiated. The vaccination process shall be kept under surveillance and monitored. In order to estimate the effectiveness of the oral vaccination campaign, the lab research of wild animals will be evaluated.

## СКАЗ У ГРУЗІЇ

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## SURVEILLANCE OF FOOT AND MOUTH DISEASE: A STUDY OF 2011-2012 OUTBREAKS IN KAZAKHSTAN

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Foot and mouth disease (FMD) is a highly contagious viral disease which affects cloven-hoofed animals. Its economic impact on the livestock industry in Kazakhstan and neighboring regions is of great importance. In order to assess the epizootic situation of FMD in Kazakhstan, sera samples were collected from cattle, goats, and sheep in 2011-2012, according to our standard disease surveillance plan, which covered three designated areas: FMD-free, vaccinated, and outbreak. A total of 14 areas were covered, including 10 to 20 districts in each region, resulting in a total amount of 76,851 sera from cattle and small ruminants. In the outbreak areas, sera samples were collected and tested by ELISA to detect antibodies to nonstructural proteins of FMD virus (FMDV). In addition, tissue samples from suspect animals were tested for viral antigen by ELISA and viral genes by quantitative PCR (qPCR). To characterize the virus currently circulating in Kazakhstan, tissue samples were sent to the FAO/OIE Regional Reference Lab for FMD (FGI-ARRIAH) in Vladimir, Russia for direct sequencing of the viral capsid protein 1 (VP1) gene. Sequence comparison and phylogenetic analysis of the complete VP1 coding region revealed virus was type O PanAsia strain. It was this same FMD serotype which was responsible for the 2001 pandemic in United Kingdom and outbreaks in other regions including Kazakhstan where it was previously unseen. This study represents the first thorough analysis of the epidemiological situation of Kazakhstan for FMD, and should be of great help for further efforts in the implementation of prevention measures and control of FMD.

**Introduction.** Foot and mouth disease virus (FMDV) is a member of the genus Aphthovirus within the family Picornaviridae. It is a single-stranded, positive-sense, un-enveloped RNA virus. FMDV is typically transmitted by direct contact among infected and susceptible