

SEROPREVALENCE OF BLUETONGUE IN THE MEDITERRANEAN REGION OF TURKEY

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One of the objectives of Medreonet is to identify new serotypes of bluetongue (BT) in some countries of the Mediterranean Basin including Turkey. In May 2008, a cross-sectional study was conducted in cattle to investigate the presence of new serotypes in the provinces of Adana, Antalya, Hatay, Mersin, and Osmaniye. Cattle were the species selected since they had not been vaccinated against BT and the vaccine did not interfere with the serological results. The village was established as the epidemiological unit. The sample size was calculated with the aim to detect at least 2% of positive villages and a within-village prevalence of 30% (with 95% confidence level), resulting in a total of 1168 animals. A competitive enzyme-linked immunosorbent assay (cELISA) and an antigen capture ELISA (BTACE) were used to detect antibody and antigen, respectively. The presence of specific BT serotypes was confirmed by a specific polymerase chain reaction (PCR). To isolate BT virus, all the blood samples that were antigen positive were inoculated into embryonated chicken eggs and into cell cultures.

Of the 1096 sera samples obtained, 994 (90.7%) were from dairy cattle (Holstein and crossbred Holstein), and only 102 (9.3%)

were from beef breeds. A total of 352 (32.1%) sera samples were positive. Of the 140 villages sampled, 99 (71%) presented at least one positive animal, and the prevalence was 31%. The prevalence in dairy cattle was significantly ($P = 0.0002$) higher than in beef breeds (34 and 16%, respectively). Older animals presented a higher level of prevalence. Animals up to two years old had a prevalence of 24.3% ($P < 0.05$), whereas the prevalence in adult animals was 52% ($P < 0.05$). Given that the last BT cases in Turkey were reported in August 2000 (serotypes 9 and 16), these data indicate that BT virus has been circulating in the country in the last years. There were major differences between provinces: 88% of the samples were positive in Osmaniye against only 14% in Antalya. These differences could be attributable to differences in vector densities, but they could also be related to host factors such as breed, density of cattle and small ruminant populations, and age of the animals (animals were older in some provinces than in others).

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