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**SERO-EPIDEMIOLOGICAL STUDY OF APOI VIRUS IN BOVINE  
BY ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA)**

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Bovine sera collected in Hokkaido, Gifu and Kagoshima prefectures during 1970-1980 were tested for IgG and IgM antibodies against Apoi virus, a member of the flavivirus, by ELISA.

The results obtained were as follows.

1) IgG antibody to the virus was detected in 14.1 % of the 1741 sera collected from Hokkaido in 1978 and in 12.7 % of the 189 sera collected from Kagoshima in 1970. However, the antibody was not detected in the 144 sera collected from Gifu in 1980.

2) Antibody rates in Hokkaido were 27.5 % of 236 in the Rumoi district; 21.2 % of 340 in Hidaka; 19.3 % of 238 in Hiyama; 10.3 % of 243 in Tokachi; 6.8 % of 234 in Nemuro; 5.5 % of 237 in Iburi; and 4.2 % of 213 in Kamikawa. These findings indicate that Apoi virus is widely disseminated in Hokkaido.

3) IgG antibody rates in Hidaka ranged from 15.8 % to 22.0 % in 1970, 1978 and 1980, which suggest that Hidaka might be an endemic area.

4) IgM antibody was also tested in the towns of Niiikapu and Mitsuishi in Hidaka. In both locations, IgM antibody was detected only in the younger age group. Also, in both locations there was no increase in either of the antibody rates with aging, and the IgM antibody rates were higher than the IgG antibody rates in the under 1 year of age group. These results suggest that the bovine might have been infected with Apoi virus during pasturing.

5) The antibody against Japanese encephalitis (JE) virus was also tested for sera from the Rumoi, Hidaka and Hiyama districts; the above-mentioned high positive rate against Apoi virus was observed. Antibody rates against JE virus were high in the sera from Hidaka (11.8 %) and Hiyama (10.4 %) but low in that from Rumoi (1.0 %). Only 3.6 % of the 56 positive sera against Apoi virus from Rumoi had the JE antibody, which showed that there is a very low cross-reaction between Apoi and JE viruses by ELISA.