

ABSTRACT

An enzyme-linked immunosorbent assay (ELISA) was developed using heat-stable antigen of *Pasteurella multocida* (serotype 6:B) to detect antibodies to haemorrhagic septicaemia (HS) in serum from cattle and buffaloes. The optical density produced by a single dilution of test serum (1:400) was compared with a standard curve and results expressed in ELISA units. The ELISA results were compared with those of indirect haemagglutination test (IHA) using field samples. An agreement of 91% was obtained when reciprocal IHA titres greater than or equal to 10 and ELISA units greater than or equal to 8 were taken as indicative of a positive reaction. Following vaccination with HS oil adjuvant vaccine the ELISA detected specific antibodies in buffalo calves. During the first three months after vaccination there was a gradual rise in the HS antibody concentration followed by a marked increase 14 days after a booster given at three months. The animals were challenged intranasally with a viable culture of *Pasteurella multocida* at 9 months. All vaccinated animals survived the challenge which indicated that the ELISA is capable of detecting antibodies implicated in protection. The assay was also used to detect colostrum derived antibodies to HS in new born buffalo calves. The antibody concentration showed a marked increase within 24 hours of colostrum consumption followed by a decline with advancing age. When the heat-stable antigen was used in an ELISA to examine the immune response to *Pasteurella multocida* in rabbits, the assay demonstrated a 50-fold increase in the antibody concentration on day 36, compared with pre-immunisation level. The ELISA developed is sensitive in detecting postvaccinal antibodies to *Pasteurella multocida* in cattle and buffaloes and the assay will assist in detecting HS-specific antibodies in vaccination experiments and in studies related to the pathogenesis of the disease.