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Serological evidence of Brucella and Leptospiral infection in cases of abortion in bovines

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Abortion is a common condition reported in cows and buffaloes and is known to be responsible for loss of calf, lowered milk production and a subsequent period of infertility, (Arthur, *et al.,* 1989). Abortion is commonly caused by brucella infection, which is prevalent in 95 out 153 countries, (Thim and Wundt, 1976). Laptospirosis has long been known to occur in cattle (Amartredjo and Campbell 1975) and is a common cause of fetal death and abortion, still birth and weak calves. The pregnancy rates also were low due to infection with leptospira hardijo, (Hanson, 1980). This study was undertaken to correlate the history of abortion cases in cows and buffaloes from field with the serological evidence of brucella / leptospira agglutinins.

MATERIALS AND METHODS

Serum samples were obtained from 580 cows and buffaloes, with a history of problem breeding. Complete history of animals was taken from the owner and the animal was examined clinico-gynaecologically in order to assess the status of genital organs. All the serum samples were tested for brucella antibodies by serum tube agglutination test (STAT) and for the leptospiral antibodies by the microscopic agglutination test (MAT).

The serum samples positive for brucella and leptospira antibodies with or without a history of abortion were then taken up for a detail analysis.

RESULTS AND DISCUSSION

In all 580 animals i.e. 303 cows and 277 buffaloes were taken for study.

(a) Brucella Positive Cases:

Among 580 Animals studied, there were 23 animals (one cow heifer, seven cows, four buffalo heifers and eleven buffalo cows) Positive for brucella agglutins by serum tube agglutination test (STAT).

Out of the 23 animals positive for brucella antibodies, only six animals (one buffalo heifer and five buffalo cows) had a history of abortion. The remaining seventeen animals had a history of abortion but were brucella negative to STAT.

During the study, twenty animals, eight cows, two buffalo heifers and ten buffalo cows; were positive for brucella by STAT but had no history of abortion. It is possible that such animals may have been carrier of brucella infection and may have exhibited symptoms, which were not noticed by the owners.

(b) Leptospira Positive Cases

Out of the twenty three cases with the history of abortion, no case was positive for leptospiral antibodies by microscopic agglutination test (MAT).

There were seven cases without the history of abortion, (three cows, one buffalo heifer and three buffalo cows), were positive for leptospiral antibodies. All these seven animals were positive for leptospira serotype patec.

(c) A case Positive for brucella as well as leptospiral antibodies:-

Among the cases studied, one buffaloe, which has had 2 calvings and had calved 18 months earlier was positive for brucella agglutinins by STAT as well as for antibodies of leptospira serotype pomona, but there was no history of abortion in this buffalo.

Mallick *et al.,* (1988) Studied ten cases with a clinical history of abortion in cows and buffaloes and reported four cases positive for leptospiral agglutinins. They observed agglutinins of L. Ictero-haemorrhagie RGA (in a goat), L. Copenhageni M-20 (in a cow) and L. Pomona (in one buffalo), with L. Patec (in another buffalo).

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