

Heifers immunized with whole-cell and membrane vaccines against *Tritrichomonas foetus* and naturally challenged with an infected bull.

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Abstract

The performance of a whole-cell vaccine and the other vaccine with cellular membranes of *Tritrichomonas foetus* applied to heifers naturally challenged by mating with an infected bull was determined. Forty heifers were divided into three groups: a control group (n=16) without immunizing, another group (n=12) immunized with whole cells (10(8)/dose) and a third group (n=12) immunized with cellular membranes (300 micro g of membranes/dose protein). The females were subcutaneously vaccinated at 3-week on two occasions and received a third intravaginal booster dose. After 3 weeks of the last vaccinal doses, the heifers were served by a *T. foetus* infected bull over 90-day period. The mean duration of infection for membrane-vaccinated heifers was 60 days +/-25, compared with 63 days +/-35.8 of infection for whole-cell-vaccinated heifers and 79 days +/-41.3 for control heifers. Calving rates were 6/12 for membrane-vaccinated heifers, 3/12 for whole-cell-vaccinated animals, and 2/16 for control animals. Fetal mortality rates were 3/12 for membrane-vaccinated animals, 4/12 for those vaccinated with whole cells and 10/16 for control animals. These reproductive parameters were significantly different ($P<0.05$) between heifers vaccinated with membranes and control heifers. The hemolytic test and enzyme-linked immunoabsorbent assay (ELISA) with *T. foetus* antigen showed that serum immunoglobulins peaked before and during the breeding period. The heifers vaccinated with membranes developed an important response during the critical period of fetal loss, second and third month of the breeding time, and another month after the same period. The ELISA method was more sensitive and more reliable than the hemolytic test for the evaluation of the systemic immune response in females infected and/or vaccinated with *T. foetus*.