# SUMMARY

The attenuated strains of *Babesia bovis* and *B. bigemina*, developed at EMBRAPA-CNPGC, and the attenuated strain of *Anaplasma marginale*, developed at the University of Illinois, USA, were tested in 291 Holstein heifers divided in five groups of six and one group of 261 heifers. Group 1 was vaccinated with *B. bovis*, group 2 with *B. bigemina*, group 3 with *B. bovis* and *B. bigemina*, group 4 with *A. marginale* and groups 5 e 6 with the three organisms simultaneously. The vaccine dose was $10^7$ parasitized erythrocytes (PE). Groups 1 to 4 were challenged with $5x10^7$ PE of the virulent isolates and groups 5 and 6 were field-challenged with the cattle tick. The vaccinal strains were inocuous for this category of animals and promoted protection rates of 100% for the three species of parasites when needle-challenged. When field-challenged by the tick, the protection rates were 97.0, 98.9 and 100% for *B. bovis*, *B. bigemina* and *A. marginale*, respectively.



KEY WORDS: bovine, babesiosis, anaplasmosis, vaccines.