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ARABIC SUMMARY..	



6- SUMMARY

A total of 525 guinea pigs was used for studying the immune response and efficiency of the Abor sec (S.19) and Abortox (S. 45/20) vaccines, the animals were divided into 9 groups.

Group I: (35 guinea pigs) inoculated with Abor sec vaccine (living attenuated) showed serological response detected by tube agglutination test (T.A.T.), mercaptoethanol test (M.E.T.), Rose bengal test (R.B.T.), Rivanol test (Riv.T.) and complement fixation test (C.F.T.) from the second week after vaccination at various titres. The skin test using brucellin revealed positive results from the 2nd week and strain 19 organisms were recovered only at the 2nd and 3rd week.

Group II: (30 guinea pigs) was challenged with the virulent Br. abortus strain 544 ( $10^4$  Org/ml) 8 week after vaccination with Abor-sec vaccine and Killed 8 weeks later revealed negative serological results and no brucella organisms could be recovered from the spleen of all animals.

Group III: (35 guinea pigs) vaccinated with Abortox vaccine (Killed 45/20 adjuvant) showed negative serological reaction to T.A.T, M.E.T., R.B.T., Riv.T. and C.F.T.

when using smooth antigen, while all animals in the group gave  $1/20$  agglutination titre in T.A.T. when using rough antigen at the 2nd week which increased to  $1/40$  till the 5th week then declined again to  $1/20$  from the 6th week. M.E.T. and C.F.T. titres were detectable when using rough antigen at  $1/20$  from the 3rd week till the 8th week. The skin test was negative during the various weeks of experiments and no brucella organisms were recovered as the vaccine was killed.

Group VI: (60 guinea pigs) was vaccinated with abortox vaccine and challenged with S.544. One half of the animals received a dose of  $5 \times 10^3$  Org/ml and the other half with a dose of  $10^4$  Org/ml at the 8th week. after vaccination and killed 8 week later All animals showed negative results to the serological tests and brucella organisms strain 544 were recovered only from the guinea pigs challenged with a dose of  $10^4$  organisms/ml.

Groups V and VI: (30 guinea pigs each) were vaccinated with Abort sec and Abortox vaccine from each group 6 animals were killed respectively weekly from the second week till the 6th week. Blood samples were

collected on heparine, lymphocytes were separated and extracts were prepared from these lymphocytes by freezing and thawing:

The obtained lymphocyte extracts of group V were injected in 50 guinea pigs in a dose equal to  $10^6$  cells/animal to demonstrate the transfer of immunity by the sensitized lymphocytes.

The guinea pigs showed negative serological results in all serological tests used but gave positive skin reaction when done 5 days after injection of the extracts. These animals showed a positive serological reactions after being challenged with strain 544 ( $10^4$  organisms/ml) but no brucella organisms could be recovered after challenge. The skin test was still positive, however the diameter of erythema increased. The obtained lymphocyte extracts of group VI were likewise injected in 50 guinea pigs equal to  $10^6$  cells/animal. These animals showed negative results both in serological tests and skin test. After challenge with S.544 ( $10^4$  Org/ml) positive serological and skin reactions were demonstrated in all animals, in addition to isolation of Brucella organisms from these animals.

3 other groups VII, VIII and IX were used as controls.

Group VII: (35 guinea pigs) was left untreated as a control for vaccination with Aborsec and Abortox vaccines.

Group VIII (30 guinea pigs) was used as unvaccinated challenged control and group IX (50 guinea pigs) was used as control for the transfer factor experiment. All animals were injected with lymphocytes extracts from non vaccinated animals, 25 animals were challenged thereafter with strain 544 and the other animals were left unchallenged. All control animals in the 3 groups were tested serologically and by skin test in parallel with the experiments in the above mentioned groups.

Field trails to study the immune response of Abortox vaccine in cattle and buffaloes were done in four governmental farms.

In farm -A- a total of 506 Friestan cattle was vaccinated with Abortox vaccine in two doses one month apart and received a booster dose after one year. They showed negative serological results at the time of the 1st vaccination and after 6 months later, but 41.1%, 16.6% and 28.6% were positive to the T.A.T., ME.T. and R.B.T. respectively when examined one month after the

booster dose, The monthly successive examination till the 7th month after the booster dose revealed that only 4 animals were positive to T.A.T., ME.T. and R.B.T. which were considered latent carriers for brucella infection and were slaughtered.

In farm -B- a total of 1927 Friesian cows was vaccinated with Abortox vaccine in two doses two months apart 35.8% of the animals were positive to T.A.T. and 4.3% suspicious at the time of 1st vaccination. The positive animals were slaughtered.

At the time of second vaccination 20% of the remaining animals were positive and 13.7% suspicious. All positive animals were also slaughtered and the suspicious animals (169) were isolated and examined separately every month along with the negative Cows/ The negative animals remained negative till the end of the experiment. Of the suspicious animals 92 showed positive results, they were also slaughtered the remaining 77 animals became negative and were added to the negative herd again.

In Farm -C- a total of 1000 Friesian cattle was vaccinated with a bortox vaccine in one dose and revaccinated 10 months later. They showed negative T.A.T. results at the time of 1st vaccination, but when they were

examined 8 months later one animal was positive and 4 animals were suspicious. The 5 animals were slaughtered.

When the farm was examined again at the time of revaccination all animals were still negative but one month after revaccination there were 10 positive and 5 suspicious cows which were also slaughtered. At two months after revaccination 4 animals revealed positive reactors to T.A.T. and were slaughtered. At 8th month after revaccination 26 positive animals were detected and were immediately slaughtered. In the following month a abortion storm in pregnant vaccinated Cows occurred and 56 animals showed positive results to T.A.T. and 130 animals were suspicious. Brucella organisms were recovered from a aborted foeti. This occurred subsequent to the introduction of infected sheep to the vaccinated herd.

In farm.-D- a total of 100 pregnant buffaloes was vaccinated with Abortox vaccine with one dose. 57% of them showed positive agglutination titre that varied from  $1/20$  to  $1/80$  when examined 4 months after vaccination, this percentage showed gradual decline by the following examinations using T.A.T., M.E.T. and C.F.T. and all were negative 9 months after vaccination.