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**PJBS**

ISSN 1028-8880

**Pakistan  
Journal of Biological Sciences**

**ANSI***net*

Asian Network for Scientific Information  
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

## Effect of Brucellosis on The Serological Response of Exotic Cattle Vaccinated with Oil Adjuvant Haemorrhagic Septicemia Vaccine

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**Abstract:** A total of hundred exotic cattle were used during this study Based on serum agglutination test for detection of brucellosis, they were divided into two groups. Fifty Brucella positive animals were kept in group A and fifty negative in group B. All the animals were inoculated with oil adjuvant haemorrhagic septicemia vaccine. Serum samples were collected on 30, 60 and 140th days post inoculation. It was observed that geometric mean titre was 9.8 and 12.1 on 30th day 12.1 and 9.2 on 60th day in group A and B, respectively. On 140th day titres in both groups were 5.3.

**Key words:** Brucellosis, oil adjuvant H.S. vaccine, Immunity, exotic cattle

### Introduction

There are some diseases which affect the immune system of animals, when these animals are vaccinated the immune response mounted are not upto the level. Keeping in view this problem this study was conducted to know the serological response of exotic cattle vaccinated with oil adjuvant Haemorrhagic septicemia (H.S) vaccine having history of brucellosis.

### Materials and Methods

One hundred exotic cattle were taken during this study. They were divided into two groups i.e. A and B. Fifty animals which were positive for brucellosis were kept in group A (based on serum agglutination test) and rest of the fifty negative in group B. An oil adjuvant Haemorrhagic septicemia vaccine (H.S.V) manufactured by Veterinary Research Institute was inoculated as per directions. Serum samples of animals both in group A and B were collected on 30th, 60th and 140th day post inoculation of oil adjuvant H.S.V. Immune response was

evaluated by studying the serological response of animals to oil adjuvant H.S.V. by using Indirect Haemagglutination Test (IHA) as described by Carter (1955).

### Results and Discussion

The geometric mean antibody titres (GMT) of animals of the both groups are given in Table 1. The antibody titres of oil adjuvant H.S.V. were observed in both groups on 30, 60 and 140 days post inoculation (Fig. 1). On day 30th the geometric mean titres (GMT) were 9.8 and 12.1 in group A and B respectively. The highest GMT (12.1) was in animals of group B. On day 60th GMT were 12.1 and 9.2 in group A and B. The highest GMT was (12.1) in group A. On day 140th GMT were 5.3 in both groups A and B. Similar study was conducted by Hoct *et al.* (1997) who studied 7.5% Levamisal in an immuno-modulatory dose, triple bacterin concentrate of *Cl. chauvoei Cl.septicum* and *P.multocida* and Oil adjuvant F.M.D. Vaccine did not induce any cross reactivity to brucellosis test.

Table 1: Geometric Mean Titre of animals of both groups at different intervals after vaccination

Groups	Sample size	Days post vaccination	Number of animals on the basis of IHA antibody titres									GMT
			0	1:2	1:4	1:8	1:16	1:32	1:64	1:128	1:256	
A	50	30	2	1	17	10	9	6	2	3	-	9.8
	50	60	-	1	17	10	9	6	2	3	2	12.1
	50	140	10	6	9	16	3	3	-	3	-	5.3
B	50	30	5	-	9	6	16	5	5	4	-	12.1
	50	60	5	-	8	10	12	6	4	5	-	9.2
	50	140	10	8	9	9	6	4	3	1	-	5.3

GMT = Geometric Mean Titre

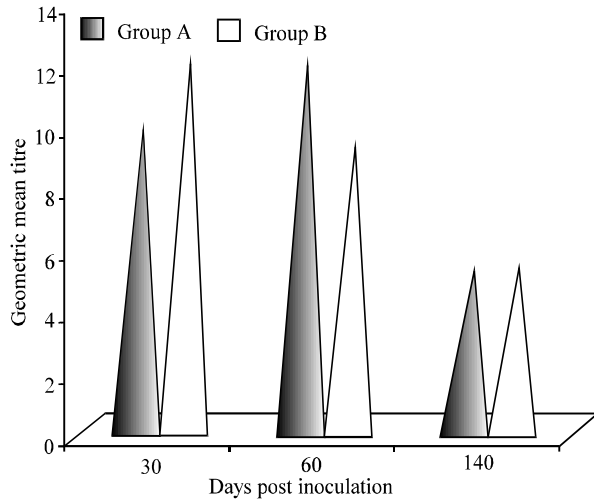


Fig. 1: Pattern of geometric mean antibody titre of animals

Garcia and Carrillo (1987) studied the possible effect of oil adjuvant FMD vaccine on immunity to brucellosis in

guinea pigs with strain 19 vaccine and concluded that S19 vaccine should not be used within one month before and after any other vaccine containing oil adjuvant. It is concluded from this study that brucellosis did not show any immuno-modulatory effect on the immune response of exotic cattle vaccinated with oil adjuvant H.S.V. However, further study is suggested regarding this aspect.

#### References

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