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STUDY OF ESTRUS SYNCHRONIZATION IN CROSSBRED ANIMALS AND BUFFALOES IN KUTCH DISTRICT

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ABSTRACT:

An on farm study has been carried out to evaluated pregnancy rate and estrus responses to treatment of crossbred animals and buffaloes with estrus synchronization protocols. Animals belonging to both the species were selected at random, irrespective of parity, milk yield and body weight. The estrus synchronization protocols were evaluated. Treatment included an injection of receptal @ 2.5ml followed by lutalyse @ 5.0ml im and fixed time artificial insemination (FTAI) was done 16-24 hr after second dose of receptal @ 2.5ml im injection. It was observed that according to the protocols, the percentage of total pregnant animals was 54%. The results for percentage of successful pregnant animals to first service resulting on application of protocol for crossbred animals and buffaloes were 57% (42/74) and 46% (12/26) respectively.

KEY WORDS: *Estrus synchronization, Crossbred, Buffaloes, Hormone.*

INTRODUCTION:

Estrus synchronization is a useful technique in cattle practice as it allows the use of fixed time AI or improved heat detection efficiency. Estrus synchronization with fixed time AI eliminates the practical problems of heat detection in dairy cattle.

The gonadotropin releasing hormone (GnRh) and prostaglandin (PGF2α) method of estrus synchronization has proven to be very successful in synchronizing estrus in cattle and buffaloes (Odde 1990; Lamb et al 2000, 2004; Amaya-Montoya et al 2007; Brito et al 2002; Battista et al 1984) or in

combination with GnRh, the use of artificial insemination techniques has been successfully used in breeding farms for genetic improvement of animals. In buffalo there is difficulty in identification of estrus manifestations and for application of AI, at the accurate time. The use of protocol that do not require the identification of estrus, allow for the increase use of AI at fixed time and are more efficient in cattle and buffalo for increasing productivity. Studies by Pursley et al (1995) verified that, administration of GnRH after PGF2α injection increases the rate of synchronized ovulation in bovines. It has been observed that when PGF2α is administered on palpation of functional CL, about 60-70% of treated animals were detected in estrus within 4 days post PGF2α injection (Twagiramungu et al 1995). The pregnancy rate achieved in relation to the usage of different protocols with fixed time AI in cows and buffaloes were observed to range between 30-50% (Pursley et al 1997: Baruselli, 1997: Baruselli et al 2003). Ovulation and estrus activity after calving are delayed when the positive feedback effects of estradiol on release of LH from the pituitary are reduced due to various factors.

Estrus synchronization technique improves reproduction efficiency by reducing the length of breeding and calving seasons and increasing calf weaning weights. Artificial insemination technique can also be used more efficiently. PGF2α causes CL to regress during the responsive phase and a consequent decrease in the levels of progesterone leading to the development of follicles to the next wave (Galina and Orihuela 2007). Studies carried out by Dhaliwal et al (1988) and Kamonpatana et al (1979) revealed that PGF2α is effective in inducing estrus. We have use the protocol is better known as Ovsynch protocol.

OBJECTIVES:

- To study the conception rate in crossbred animals.
- To study the conception rate in buffaloes.
- To compare the conception rate in crossbred animal and buffaloes.

METHODS AND METHODS:

The local breeds of buffaloes in this particular area is Banni and crossbred animals were considered for treatment and the study was conducted at two villages *viz.* Bhujpur and Zarpara of Mundra taluka, Dist-Kutch in Gujarat. The body weight of the crossbred ranged between 300-400 kg BW and that of the buffaloes ranged between 300-500 kg BW. Animals suffering from reproductive problems like metritis, endometritis and cystic ovary were not included. A total of 100 no. of animals were considered for application of this protocol. For this protocol (table 1), 74 buffaloes and 26 crossbred were selected. After selection of animals, following protocol for estrus synchronization has been used. All animals were diagnosed for pregnancy via rectal palpation on day 90 post AI by a trained area supervisor.

PROTOCOL FOR ESTRUS SYNCHRONIZATION IS AS FOLLOW:

- Before treatment dewormer and mineral mixture will be given for 10-15 days before estrus synchronization.
- 0 days- Inject Receptal @ 2.5ml im.
- 7 days- inject Lutalyse @ 5.0ml im.
- 9 days- inject second dose of receptal @ 2.ml im.
- 10 days- AI (16-24 hrs).

RESULTS AND DISCUSSION:

It was observed that according to protocol, the percentage of pregnant animals was 54% (table 1). The results for percentage of pregnant animals to first service resulting on application of above protocol for buffaloes and crossbred animals was 57% (42/74) and 46% (12/26) respectively. The major limiting factor for optimum reproductive performance on many farms is failure to detect estrus in a timely and accurate manner.

CONCLUSION:

Presence of *cad*F, *cdt*B and *flg*R gene in all isolates shows that they are the specific targets for *Campylobacter* identification and are capable of producing gastroenteric illness to humans. Application of good hygiene procedures during milking, personal hygiene and health education will be necessary to protect the consumer from this zoonotic pathogen.

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A number of controlled or breeding programmes have been developed for synchronizing groups of lactating cattle. Controlled breeding can be directed to cows that pass a corpus luteum test as determined by rectal palpation of the overies and for further administering PGF2α to these animals. It was observed that all the cows and buffaloes were in heat after 16-24 hrs in second dose of receptal injection. It has been observed that cows in early and late stages of the cycle tend to exhibit heat within 48-72h after receptal administration.

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Table 1: Data of estrus synchronization in crossbred and buffaloes.

Sr. No.	Breed	No. of animals	AI done	Successfully pregnant	Percentage (%)
1	Buffaloes	74	74	42	57
2	Crossbred	26	26	12	46
Total		**100**	**100**	**54**	**54**