

IMPROVING FERTILITY IN POSTPARTUM MARATHWADI ANOESTRUS BUFFALOES USING OVSYNCH AND SELECTSYNCH PROTOCOLS*

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ABSTRACT

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The present experiment was undertaken to study the comparative efficacy of Ovsynch protocol (GnRH + PGF_{2α} + GnRH, Group I) and Selectsynch protocol (GnRH + PGF_{2α}, Group II) for the improvement of fertility in Marathwadi buffaloes. The buffaloes under group I showed induction of oestrus, and conception rate to be 87.50, and 85.71 per cent respectively. The buffaloes under group II responded with induction of oestrus, and conception rate by 75.00, and 83.33 per cent respectively. The estrous induction interval and duration of oestrus were found to be 41.25 ± 2.26 and 11.25 ± 0.73 hours in Group I, 29.5 ± 1.65 and 12.25 ± 0.73 in Group II and the duration of estrous in Group III was 10.50 hours. Ovsynch protocol was found to be effective than Selectsynch protocol for improvement of fertility in post partum anoestrus Marathwadi buffaloes.

Key words: Ovsynch, Selectsynch protocol, Fertility improvement, Marathwadi buffalo

The Marathwadi buffaloes are found in the Marathwada region of Central India, especially in Parbhani, Nanded, Beed, Hingoli and Latur districts of Maharashtra State. Marathwadi buffaloes are reared under low input system and have moderate milk production varying from 4 to 8 liters per day. Controlled breeding programmes are considered as fertility management techniques and are closely related to dairy animals in the problems of unobserved oestrus for which use of pharmaceutical agents like prostaglandin, progesterone, GnRH are considered for therapeutic use (Sabo *et al.*, 2008). Response of ovaries to GnRH is dependent on the stage of follicular growth at the time GnRH is administered (Geary *et al.*, 2000). Many synchronization programmes have successfully used GnRH, including Ovsynch, Co-Synch, and Selectsynch

(Patterson *et al.*, 2001). Taking into consideration, it was planned to study the comparative efficacy of ovsynch and selectsynch protocols for improvement of fertility in postpartum anoestrus Marathwadi buffaloes.

A total of 24 Marathwadi buffaloes, being clinically healthy, free from any reproductive disorders and absence of heat since 60 - 90 days postpartum period were selected for the study. Deworming and vaccinations were carried out regularly as per the routine schedule. Heat detection was done by close observations in morning-evening hours.

All the selected buffaloes were maintained on routine managemental and feeding practices and were divided into three groups and subjected to regular gynaeco-clinical examination throughout the course of the study.

In the Group I (Ovsynch protocol), the buffaloes (n=8) were treated with i/m inj. GnRH @ 10 µg on day 0 followed by inj. PGF_{2α} @ 500 µg on day 7. Second inj. of GnRH @ 10 µg was administered on day 9. In the Group II (Selectsynch protocol), the buffaloes (n=8)

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were administered with inj. GnRH @ 10 µg on day 0 followed by inj. PGF_{2α} @ 500 µg on day 7. No treatment was given to the buffaloes under control group III. All the treated animals were closely observed for heat detection after 24 hours and animals confirmed in oestrus were bred by natural service at an appropriate time.

The statistical analysis of the data was done as per the methods described by Snedecor and Cochran (1994).

In Ovsynch protocol (Group I), out of eight treated buffaloes, seven buffaloes exhibited oestrus (87.50%) and one buffalo did not exhibit oestrus. Oestrous induction interval and duration of oestrus were 41.25 ± 2.26 and 11.25 ± 0.73 hours, while conception rates were (85.71%) and (75.00 %), respectively.

The present findings of rate of induction of estrus are in close agreement with Ingawale *et al.* (2007) who reported 86.66 per cent induction of oestrus in postpartum anoestrus buffaloes with Ovsynch protocol. Paul and Prakash (2005) recorded 90 per cent success rate after the second GnRH treatment in Ovsynch protocol in Murrah buffaloes.

Chaudhary *et al.* (1990) who tested 106 Nili-Ravi buffaloes for oestrus using teaser bulls during the peak breeding season and recorded the average duration of oestrus as 16.66 ± 0.67 hours with a range of 4-60 hours. Usmani (2001) reported average duration of oestrus 19.3 ± 1.5 hours after studying 53 buffaloes of 1 to 9 parity.

In Selectsynch protocol (Group II), out of eight treated buffaloes, six buffaloes exhibited oestrus (75.00%) and remaining two buffaloes did not exhibit oestrus. oestrus induction interval and duration of oestrus were 29.50 ± 1.65 and 12.25 ± 0.73 hours while conception rates were (83.33%) and (62.50%), respectively.

The present finding of rate of induction of oestrus is higher than that of Thakur *et al.* (1996) who observed 60.00 per cent induction of oestrus in 10 postpartum anoestrus Murrah buffaloes with Selectsynch protocol. Twagiramungu *et al.* (1995) and Thompson *et al.* (1999) reported that the injection of GnRH initiated turnover of large follicles by emergence of new follicular wave.

Kanai and Shimizu (1982) who reported average duration of oestrus as 11.9-19.6 hours in swamp buffaloes. Ingawale (2001) reported 66.66 per cent conception rate in postpartum suboestrus cows after use of selectsynch protocol.

In Control group (Group III), out of eight buffaloes, only one exhibited spontaneous oestrus (12.50%). The duration of oestrus was 10.50 hours. Over all conception rate was 12.50 %.

From the above findings it can be concluded that in postpartum anoestrus Marathwadi buffaloes responded well to both the protocols with the Ovsynch Protocol being better than Selectsynch protocol in terms of induction of oestrus and conception rate.

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