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# EFFECT OF ILIREN AND NORGESTOMET ON SYNCHRONIZATION OF OESTRUS IN COWS*

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## ABSTRACT

**Fifteen healthy cyclic indigenous cows of Assam at first and/or second lactation were randomly divided into three groups *viz.* I, II and III, each comprising of five cows. Group I cows were kept as untreated control. The cows under group II and III were treated with "Iliren" (a $PGF_2$ α analogue) and "Crestar" (3 mg Norgestomet, 5 mg Estradiol valerate) respectively. All experimental animals of group II exhibited oestrus between 96 and 108 hrs with a mean of 99.00 ± 3.00 hrs following treatment while 4 cows under group III, responded to treatment. Mean interval between withdrawal of Crestar ear implant and exhibition of oestrus was 29.80 ± 0.91 hrs with a range from 24 to 48 hrs. The physical symptoms of oestrus were similar in hormonally treated and control animals. Duration of oestrus was found to be significantly higher ($p<0.01$) in "Iliren" treated (26.50 ± 1.89 hrs) and "Crestar" implanted cows (36.00 ± 3.89 hrs) than that of the control cows (18.20 ± 2.13 hrs).**

**Key words :** Cows, Crestar, Iliren, Oestrus, Synchronization.

## INTRODUCTION

Many a hormone(s) have been used for synchronization of oestrus in the recipient animal in relation to its counterpart donor with varying results. "Iliren" an analogue of $PGF_2$ α and "Crestar", a combination of Norgestomet and Estradiol valerate have been proved potential to synchronize oestrus in cattle (Singh *et al.*, 2001, Reddy *et al.*, 2001). However, information on this aspect during the oestrous cycle is scanty. Hence the present study was undertaken to assess the effect of Iliren and norgestomet on synchronization of oestrus in indigenous cows of Assam.

## MATERIAL AND METHODS

Fifteen (15) healthy cycling indigenous cows of 1st and/or 2nd lactation were divided into 3 groups of 5 animals each .Group I animals were injected with 5 ml of normal saline solution (i/m), while Group II animals were administered with a single injection of 5 ml "Iliren" (i/m) each on day 11 of the oestrous cycle. The Group III animals were subjected to "Crestar" ear implant during the follicular phase, followed by 5 mg estradiol valerate injection. The implanted Crestar was removed on day 9 and the occurrence of oestrus was observed closely on the basis of receptivity to male and behavioural and physical signs of oestrus . The data was statistically analysed by t-test, as per methods of Snedecor and Cochran (1967).

## RESULTS AND DISCUSSION

The response of oestrus synchronization in the present study revealed that all the animals of group II exhibited behavioural and physical signs of oestrus between 96 and 108 hrs following the Iliren treatment as reported earlier in different breeds of cattle (Agarwal *et al.*, 1987; Krishnakumar and Subramanium, 1999; Reddy *et al.*, 2001). The present observation of mean time interval (99.00 ± 3.00 hrs) between the injection of Iliren and onset of oestrus also showed similarity with the findings of

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Kastov *et al.* (1986), who conducted study on exotic breed of cattle. Effectiveness of "Iliren" – a $PGF_2 \alpha$ analogue was therefore, proved efficacious in indigenous cattle of Assam. The group III animals which received the treatment of Crestar ear implant and Crestar injection also showed encouraging synchronization response. The mean time interval from withdrawal of Crestar ear implant to the onset of oestrus was significantly ($p<0.01$) less than that of Iliren treated group (29.80 ± 0.91 Vs 99.00 ± 3.00 hrs). Similar efficacy of "Crestar" in respect of synchronization of oestrus was reported in Murrah buffaloes by Rao and Rao (1979) and Tregaskes *et al.* (1994). However, Logue *e.t al.*(1991) and Kastelie *et al.*(1999) reported much lower synchronization response in different breeds of cattle.

Relatively more prominent manifestations of oestrus characteristics as well as higher degree of synchrony following "Iliren" injection than that of "Crestar" ear implant coincided well with the findings of earlier studies (Tregaskes *et al.*, 1994). Although there were differences in the oestrus manifestations in response to "Iliren" and "Crestar" treatment their sequential effect on the ovarian functions in respect of degree of luteinization, formation of corpus luteum etc. supported the efficacy of the treatment of both the hormonal compounds.

The physical characteristics of oestrus in hormonally treated animals were comparable with that of control animals in the present study. However, individual differences in the animals of both contol and treatment groups in respect of vaginal mucous discharges were observed. The other behavioural characteristics noticed in the present study were acceptance to male, mounting on herd mate and on the male, smelling and licking of the herd mates and the male, bellowing and frequent urination.The behavioural signs were prominent in control animals, less prominent in "Iliren" treated animals and much less in "Crestar" implanted animals (Singh *et al.*, 2001). The present experiment indicated that there was difference in the degree of behavioural prominence between hormonally treated and control animals, which indicates that such differences might be attributed to differences of oestrogenic profile during the period of oestrus. (Hafez, 1987).

In the present study duratrion of oestrus was more in crestar treated cows (36.00±3.89hrs) than the "Iliren" treated cows (26.50±1.89hrs) and control group (18.20±2.13hrs). Sarmah (2001) also reported similar findings on application of "Crestar" for induction of oestrus in heifers.

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