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*Short communication*

# Efficacy of pre-insemination treatment with GnRH for improving conception rate in repeat breeder cows

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## ABSTRACT

An attempt was made to asses pre-insemination use of Gonadotropin Releasing Hormone (GnRH) in 20 noninfectious repeat breeding Gir Cows and its crossbreds (G x HF, G x J ). Buserline 10 ug was injected intramuscularly just before insemination in treatment group of animals. Conception rate in the treatment group was 20% higher than the control. GnRH had no influence on subsequent serum progesterone level on 14th and 22nd day post-insemination. The properties of estrual mucus discharge (pH, Spinnbarkeit test and in-vitro sperm penetration test) differed significantly between fertile and nonfertile estrus.

**Key words** : Repeat breeding, GnRH, cows, conception

Repeat breeding is major problem of infertility in dairy cows causing great economical losses to the farmers. Low endocrine profile of indigenous cattle and delayed ovulation are common contributing factor of repeat breeding ( Bostedt. 1976). Delayed ovulation or unovulatory estrus is due to delayed LH. GnRH plays an important role for the LH surge. Therefore, an attempt was made to study the pre-insemination use of GnRH on conception rate of repeat breeder Gir and its crossbred cows.

In the present study 20 repeat breeder cows (Gir and its crosses) were selected from Cattle Breeding Farm Kandivli, Mumbai. All cows were maintained under standard feeding and managemental conditions. Cows with history of more than three non- fertile estruses at regular interval of 18-24 days were screened by rectal palpation for any adhesion, anatomical abnormalities etc. Estrual mucus was critically watched for pus flakes as well as colour, consistency, fern pattern, pH, Spinnbarkeit test and in-vitro sperm penetration test. The circulating levels of serum progesterone were monitored on 0th, 14th and 22nd day post-insemination by RIA. Twenty animals with normal genitalia with clear thick mucus discharge having typical fern pattern were selected for the studies. The experimental animals were randomly divided into control and treatment group. In control group 10 cows were inseminated after 10 to 12 hrs of commencement of estrus i.e. "standing estrus". In treatment group 10 cows were inseminated at "standing estrus" and 2.5 ml *Receptal® (10 ug Buserelin) was injected intramuscularly at the time of insemination. Pregnancy was confirmed 60 days post insemination by per rectal palpation.

The mean pH value of cervical mucus in fertile and nonfertile estrus was 8.3 and 7.9 The mean Spinnbarkeit value of fertile and nonfertile estruses was 14.7 and 10.9 cm The mean in-vitro sperm penetration of cervical mucus for fertile and nonfertile estruses was 13.5mm/5min and 9.5mm/5min. The difference in mean value of pH, Spinnbarkeit, in-vitro sperm penetration of cervical mucus for fertile and nonfertile estruses was found to be highly significant. The serum progesterone level in pregnant cows of GnRH group on 0th, 14th and 22nd day of post insemination were 0.23, 3.12and 5.12ng/ml respectively while in control group levels were 0.27, 3.39 and 4.63ng/ml. In treatment group serum progesterone level on 22nd day was slightly higher than control group but statistically it was non-significant. It was observed that GnRH treatment had no influence on

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(*Receptal®: - GnRH analogue - Hoechst )

subsequent serum progesterone profile of 14th and 22nd day of post-insemination. The conception rate of control group was 40% and GnRH treatment group was 60%. The present study indicates that there is an improvement of 20% conception rate over control group. Finding of present study are in agreement with Shankar et al. (1989), Majumdar (1989) and Ileri (1995). However Phatak et al. (1986), Stevenson et al. (1990) and Bon Durant et al. (1991) reported an increase of 5 to10% conception rate, which is lower than the present study. Archbald et al. (1993) reported only 2% increase than control. Variable results obtained regarding the conception rate after pre-insemination use of GnRH might be because of difference in doses, synthetic GnRH or analogue used by different research worker.

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