

Comparative Evaluation of Ovsynch and Heat Synch Protocols in Post-partum Anoestrus Cows

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Abstract

Thirty anoestrus post-partum crossbred cows were randomly selected and divided into three groups. Animals getting treatment with Ovsynch and Heat synch protocol in group I and II, respectively and groups III was control group with mineral supplementation and deworming was undertaken. The conception rate after insemination was 60 and 50 percent in group I and II, respectively as compared to control groups 20 percent. It is concluded that Ovsynch protocol along with mineral mixture supplement improvement the conception rate in post-partum cows.

Keywords: Anestrous; cow; heat synch; ovsynch; post-partum

Introduction

Minerals like calcium, phosphorus and deworming are very important in bovine female reproduction. Area based minerals play an intermediate role in activity of hormone and enzymes at sub-cellular level in integrated fashion in animals (Ali *et al.*, 1991). Trace mineral imbalance or deficiency leads to inactive ovaries and repeat breeding then anoestrus in crossbred dairy cows.

Materials and Methods

Thirty anestrous post-partum crossbred dairy cows located in different villages of Jehanabad district were randomly selected and subjected to treatment with Ovsynch, Heat synch protocol and control group, respectively. In group I, animals were administered Buserelin 4 mcg/ml (Gynarich^a inj) 2.5 ml I.M. on day 0 following by Cloprostenol (Pragma^a) 250 mcg/ml, 2 ml injection I.M. on 7th day and again Buserelin 4 mcg/ml (Gynarich^a inj) 2.5 ml I.M. on 9th day, there after occurrence of heat (10th day), fixed time insemination. In group II, animals were administered Buserelin 4 mcg/ml (Gynarich^a inj) 2.5 ml I.M. on day 0, followed by Cloprostenol (Pragma^a) 250 mcg/ml, 2 ml inj on 7th day and then Estradiol benzoate at 1 mg on 8th day. Ovulatory response was assessed by rectal examination performed 10 days after induction oestrus in group I and II and control group mineral (Minotas^a) bolus one bolus daily for one month and Fentas XP^a (Fenbendazole and

Ivermectin) bolus single dose orally and Inorganic Buffered Phosphorus (Novizac^a) inj 15 ml alternate day for ten day. After treatment, animal's oestrus observed externally and internally by rectal palpation for corpus luteum in any one of the ovaries. Pregnancy was confirmed by rectal palpation at 60-90 days post insemination.

Result and Discussion

Estrus induction response in group I, II and control in crossbred post-partum cows treated with Ovsynch and heat synch protocol were 60 and 50 percent respectively in treated groups as compared to control group (20 percent). The overall conception rate was 6/10 (60 percent) in group I and group II 5/10 (50 percent) as compared to control group 2/10 (20 percent). Estrous synchronization and fertility with combination of GnRH and prostaglandin F₂α are good for cyclic female and combination may induce cyclicity in cow experiencing post-partum anoestrus (Prusley *et al.*, 1995). GnRH injection for bovine estrus cycle causes regression or ovulation of dominant follicles and initiates emergence of new wave of follicular growth an average of 25 D follower treatment (Pursley *et al.*, 1995). Ovulation of the dominant follicle depend upon the status of dominant follicle at the time of GnRH injection reported by Silcox *et al.* (1993) and Twagiranmugu *et al.* (1994). Ovulation of growing dominant follicle occurred 100 percent of the time of follicle GnRH administered the rang of timing of ovulation in lactating dairy cow following GnRH and PGF₂α treatment extended from 84-120 hours post PGF₂α.

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Table 1: Treatment protocols advocated in different groups

Groups treatment advocated	Conception rate (%)	Milk production (in litre)
Control group: Gr I: D ₀ : Buserelin 4 mcg/ml (Gynarich ^a inj) 2.5 ml D ₇ and D ₉ : Cloprostenol (Pragma ^a) 250 mcg/ml, 2 ml D ₉ : Buserelin 4 mcg/ml (Gynarich ^a inj) 2.5 ml D ₁₀ : Fixed time AI. (Ovsynch)	+ve (6) 60%	8.0
Gr II: D ₀ : (Buserelin 4 mcg/ml (Gynarich ^a inj) 2.5 ml D ₇ : Cloprostenol (Pragma ^a) 250 mcg/ml, 2 ml D ₈ : Oestradiol /Diethylstilbestrol :10 mg D ₁₀ : Fixed time A.I. (Heat synch)	+ve (5) 50%	7.9
Gr III: Fenbendazole 4.5 g + Inj. Inorganic Buffered Phosphorus (Novizac ^a) 15 ml, i/m +alternate day for one month + mineral (Minotas ^a) bolus	+ve (2) 20%	7.5

They demonstrated that the range in ovulation time in cow could be reduced to 8 hours (72-80 hours post PGF₂ α). The mean calcium and phosphorus level were significantly ($P < 0.05$) heifer in cyclic than anoestrus buffaloes (Daheriya *et al.*, 2004). Role of iron in hemoglobin synthesis is well known and its deficiency causes malnutrition stress resulting in normochromic anemia in animals which in turn affect the response of ovarian receptors to estrogen hormone.

Summary

Estrus induction response in crossbred anoestrus post-partum cows treated with ovsynch and heat synch protocol was 60 percent and 50 percent respectively in these groups. The overall conception rate was higher in ovsynch (60 percent) and heat synch (50 percent) than that control group (20 percent).

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