



Research Article

EFFICACY OF CLOMIPHENE CITRATE TO INDUCE ESTRUS AND SUBSEQUENT FERTILITY IN DAIRY CATTLE

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Abstract- The dairy and livestock sector play a very important role in national economy of India. The present study was taken up to ascertain the incidence of anestrus in dairy cattle and its management of Navsari/district Vansda taluka of the south Gujarat region. A total of 60 case reported of anestrus of cow and heifer and treated with Ivermectin @ 1 ml per 50 kg body weight subcutaneously and initial treatment with injection vitamin AD3E, 5 ml I/M, injection Tonophosphan 20% w/v per ml @ 5 ml I/M and then treated with clomiphene citrate bolus. Among them 49 cow/heifer responded to clomiphene citrate bolus and comes in heat at 5th day of treatment.

Keywords- Clomiphene citrate, cow, heifer, anestrus.

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Introduction

Reproduction is the back bone of animal production [1]. The different treatment like herbal heat inducer drugs [2], biostimulation [3], vitamin and mineral mixture supplementation [4] and hormonal preparations [5] are practiced to induce estrus. Among them clomiphene citrate given orally [6] is most convenient and effective practiced by dairy owners whereas, the Ovsynch is synchronization of ovulation widely utilized by veterinarian [7, 8]. Clomiphene citrate, which belongs to be a group of drugs known as selective estrogen receptor modulators (SERM), is most commonly prescribed drug to treat fertility disorders due to ovulation failure in women [9]. Clomiphene citrate, a non-hormonal substance with the properties of inducing ovarian activity and promoting ovulation by feedback effects on pituitary gland have been successfully used in domestic animals to induce ovulation and conception [10]. Clomiphene inhibits estrogen receptors in hypothalamus inhibiting negative feedback of estrogen on gonadotropin release leading to up regulation of hypothalamic-pituitary-gonadal axis. After administration of clomiphene citrate, FSH level rises steadily resulting in to the development of new follicles. Those follicles in turn produce estrogen which circulates in the blood and thus the onset of estrus takes place. The efficacy of clomiphene citrate for improving fertility in anoestrus condition with inactive and smooth ovaries was reported by [11, 12] in cows and buffaloes.

Materials and Methods

The present study was taken up to ascertain the incidence of anestrus in dairy cattle and its management of Navsari district Vansda taluka of the south Gujarat region. The work was undertaken from July 2017 to October 2017. All the cow and heifer were dewormed using Ivermectin @ 1 ml per 50 kg body weight subcutaneously and initial treatment with injection vitamin AD3E, 5 ml I/M, injection Tonophosphan 20% w/v per ml @ 5 ml I/M after this initial treatment all

animal treated with clomiphene citrate.

Result and Discussion

Among 60 cow/heifer, 49(81.66%) cow wereresponded to clomiphene citrate bolus and comes in heat at 5th day of treatment [Fig-1].

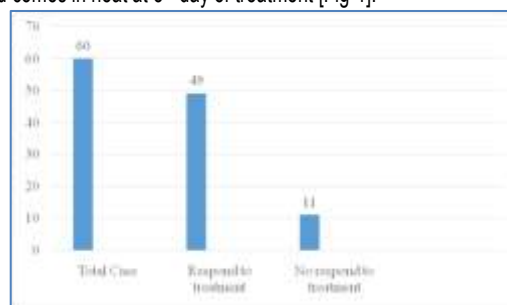


Fig-1 Total case respond to clomiphene citrate bolus.

The result of present study for estrus exhibition after clomiphene citrate treatment is in concurrence with Hukeriet *al.* (1979) and Deshpande *et al.* (1976) as 85.72 and 100 per cent, respectively in anoestrus buffaloes [13, 14]. A much lower estrus induction response was reported by More (2012), reported 50 per cent estrus induction rate in anoestrus cows and cross bred cows, respectively [15]. However, the slightly lower estrus induction rate/ response was reported by Purohit and Bishnoi (1993) as 57.1% as compared to present findings in anoestrus cows [16]. Varma and Kharche (1983) recorded 60.00 percent induction rate in anoestrus cows [17]. Deen and Tanwar (1988) while Kurien and Madhavan (1985) recorded 68.42 per cent and 63.64 per cent induction rate in anoestrus cows and heifers [18, 19].

Conclusion

The variation in the result of clomiphene citrate for induction of estrus might be difference in the body condition of animals, heat detection methods, season and follicular status of animal at the time of initiation of treatment.

Application of research: We know about variation in the result of clomiphene citrate for induction of estrus so this work helpful for farmer and they can determine the applicability of this bolus in anestrus case of their dairy cow

Research Category: Veterinary Science

Abbreviations

SERM-Selective estrogen receptor modulators

FSH- Follicle stimulating hormone

LH- Luteinizing hormone

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