

REPRODUCTIVE PERFORMANCE OF ANESTROUS NON-DESCRIPTIVE COWS TREATED WITH CIDR AND PGF_{2α}

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ABSTRACT

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The present clinical study was carried out to evaluate the reproductive performance in non descriptive cows using (CIDR) and PGF_{2α} under field condition. The cows were divided into two groups comprising of 12 cows in each group. Group I animals were (n= 12) served as control and were inseminated during natural estrus and in group II cows (n= 12) estrous cycle was induced by inserting CIDR for 9 days and PGF_{2α} was given intramuscularly 24 hrs prior to CIDR removal. Fixed time artificial insemination was carried out at 48 and 72 hrs after CIDR removal. The overall conception rate obtained was 41.66 % in group I animals and 91.66 % in group II animals treated with CIDR and PGF_{2α}.

KEY WORDS: CIDR, PGF_{2α}, Anestrous, Non descriptive cows, Reproductive Performance

Inadequate nutrition and uterine infections are two important causes of anestrous in cows. The feeding program in herds with estrous detection problems due to anestrous should be examined carefully to ensure that adequate levels of nutrients, especially energy, are being provided. Cows suffered with dystocia and retained placenta often lead to uterine infections, which can delay the beginning of ovarian activity and subsequent estrus. For anestrous females, the primary requirement for a successful synchronization system is to induce ovulation and initiate the first postpartum estrous cycle.

The objective of the present study was to evaluate the reproductive performance of anestrous non descriptive cows in field conditions following CIDR and Prostaglandin PGF_{2α} administration and timed insemination.

Twenty four apparently healthy true anestrous non descriptive cows were selected for this study. The

experimental animals were 3 - 6 years old, weighing around 200-250 kgs and were found free from palpable abnormalities of reproductive tract. The selected cows were equally divided under two experimental regimens as experiment I and II. The selected cows were fed with 35 g of mineral mixture per day continuously. The treatment was initiated in the selected animals after 30 days of supplementation of mineral mixture. Animals in group I (n= 12) served as control and were inseminated during natural estrus. Cows that failed to conceive in the first service were rebred in the subsequent estrus. Animals in group II (n = 12) were treated with an intra vaginal P4 device (CIDR) for 9 days and PGF_{2α} was given intramuscularly 24 hrs prior to CIDR removal. Fixed time artificial insemination was carried out at 48 and 72 hrs after CIDR removal. Cows that failed to conceive at the induced estrus were rebred in the subsequent estrus.

The first service conception rate for control group was 25.0 per cent (3 / 12). Two out of 9 cows conceived in the second service (22.2 per cent) leading to an overall conception rate of 41.66 per cent (5 / 12). In the treatment

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group, conception rate was 83.33 per cent (10 / 12) in the first service and one out of 2 cows conceived in the second service (leading to an overall conception rate of 91.66 per cent. Overall conception rate obtained was significantly higher in anestrus non descriptive cows treated with CIDR and PGF_{2α} under field condition when compared to group I.

In the present study, the conception rate was 25.0 % in the first service and 16.66 % in the second service in the control group. In the treatment group i.e. animals treated with controlled internal drug release device (CIDR) and PGF_{2α}, the conception rate was 83.33% in the first service and 50.0 % in the second service. Providing mineral mixture and exogenous supplementation of progesterone in the form of CIDR in the treatment group increases the overall conception rate to 91.66 % when compared to the conception rate of 41.66 % in control group. These findings were in concordance with the earlier report of Behera *et al.*, (2012). However El-Shahat, K.H., and Badr, A. (2011) reported that CIDR for 10 days plus intramuscular injection of 2ml PGF_{2α} was the most effective treatment of smooth inactive ovary and the incidences of pregnancy rates of anestrus cows after PGF_{2α} treatment was 71.42 per cent. Similar results were also reported by Busch *et al.*, (2008) who suggested that cows that exhibited estrus after removal of CIDR may have attained concentrations of estradiol necessary to effectively prepare follicular cells for luteinisation. Ando *et al.*, (2005) reported that every cow showed estrus response 2 to 4 days after CIDR removal. Furthermore, Rasby *et al.*, (1998) reported that 80.0% of beef heifers treated with CIDR for seven days exhibited estrus 1 to 3 days after CIDR removal. In addition, Flores *et al.* (2006) found that 56.0% of cows synchronized using CIDR-PGF_{2α} exhibited estrus during the first 3 days in the breeding season.

Treatment of postpartum cows with a 9 day in CIDR- PGF_{2α} protocol results in an increased percentage of cattle showing estrus and getting pregnant early in the breeding season in anestrus postpartum cows. The CIDR is most effective in cycling cows; however it induces estrus in a significant percentage of

anestrus cattle allowing these cattle an opportunity to get pregnant earlier in the breeding season than unsynchronized cattle. This study showed that the CIDR and PGF_{2α} program increased estrous and pregnancy rates of anestrus lactating cows across several environments. It is concluded that overall conception rate obtained was significantly higher in anestrus non descriptive cows treated with CIDR and PGF_{2α} under field condition as compared to controlled group.

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