



# IJASVM

**International Journal of Agricultural  
Sciences and Veterinary Medicine**



**ISSN : 2320-3730**

**Vol. 5, No. 4, November 2017**



[www.ijasvm.com](http://www.ijasvm.com)

**E-Mail: [editorijasvm@gmail.com](mailto:editorijasvm@gmail.com) or [editor@ijasvm.comm@gmail.com](mailto:editor@ijasvm.comm@gmail.com)**

*Research Paper*

## ESTRUS SYNCHRONIZATION USING CIDR PROTOCOL IN POST PARTUM ANESTRUS BUFFALOES DURING SUMMER SEASON

A D Kundulkar<sup>1</sup>, M V Ingawale<sup>1\*</sup>, S W Hajare<sup>1</sup> and R S Ingole<sup>1</sup>

\*Corresponding Author: M V Ingawale, ✉ drmvingawale@rediffmail.com

Received on: 25<sup>th</sup> September, 2017

Accepted on: 30<sup>th</sup> October, 2017

Sixteen lactating multiparous post partum anestrus buffaloes devoid of any reproductive abnormality as well as infection were randomly divided into two groups (n = 8) and administered with PSMT treatment. The first group was treated with CIDR while second group was kept untreated control. The number of buffaloes exhibited estrus were 87.50 and 37.50% in CIDR and in control groups, respectively. The first service pregnancy rate was 42.85 and 33.33% in Group-I and Group-II, respectively.

Keywords: Anestrus, Buffalo, Progesterone, Post partum, Ovsynch

### INTRODUCTION

India has over 97.7 million which are approximately 56.6% of the total world buffalo population and almost 20% of total livestock of the country. Buffalo traditionally have a pivotal and pre-eminent importance in the livestock sector of the country. Reproductive performance has direct bearing effect on economic viability of dairy farming. Breeding of buffaloes throughout the year plays a vital role for maintaining dairy as viable unit. In fact production only follows after the successful reproduction. Due to lower reproductive efficiency in buffaloes the life time production is not only hampered but also the net calf crop decrease leading to basic economic

losses to buffalo owners. Prolonged post-partum acyclicity and anestrus are major sources of economic loss to buffalo owners. This leads in longer period to exhibit first post partum estrus and increasing dry as well as inter calving period leading economic loss.

The estrus synchronization is a hormonal regulation of estrus cycle at a time in a group of animals with timed artificial insemination. Estrus synchronization by exogenous administration of progesterone exerts a negative feedback effect over the hypothalamus and pituitary and blocks the release of pituitary gonadotropin. Upon withdrawal of progesterone, the block is removed and larger quantities of gonadotropins are

<sup>1</sup> Post Graduate Institute of Veterinary and Animal Sciences, Akola 444104.

released which in turn ensures growth and maturation of ovarian follicle and thus synchronize the estrus in animals. The insertion of a progesterone-releasing intravaginal device (CIDR-B) provides the basis of many fixed-time AI programs. The synchronization of estrus was carried out using CIDR by Macmillan and Peterson (1993) in cows and Caser *et al.* (2011) in buffaloes.

In the view of above-mentioned work the present research was planned to study efficacy of CIDR synchronization protocol in anestrus buffaloes during summer season.

## MATERIALS AND METHODS

The experiment was conducted at farmer's doorstep and sixteen lactating multiparous buffaloes were selected from Madaykhed and Wadshingi Villages of Jalgaon Jamod taluka of Buldhana district during month of March to June. The selected buffaloes of two to five lactations and devoid of any reproductive abnormality as well as infection were randomly selected. On the basis of history and gynaeco-clinical examinations, anestrus buffaloes which were non-exhibiting estrus symptom, even after 90 days after calving were selected for the study. The multiparous buffaloes selected were maintained under village condition with similar management condition and vaccinated. The selected buffaloes were examined gynaeco-clinically and buffaloes with no palpable ovarian structure like follicle and corpus luteum were divided irrespective of age, milk production and parity. These randomly selected buffaloes were divided into two groups containing eight buffaloes in each group (n = 8). All the selected buffaloes were given pre-synchronization medicinal treatment like Inj. Ivermectin @ 1 ml per 50 kg

body wt. s/c., Inj. Toldimtos sodium 20%, sodium salt of 4 dimethyl amino 2 methyl phenyl phosphinic acid 0.2 g/ml 10 ml i/m, Inj. Vit. A 2.5 lakh IU, Vit. D3 25000 IU, Vit. E 100 IU/ml 5 ml i/m and chelated mineral mixture @ 50 g orally daily.

### CIDR (Group-I)

One week after presynchronization treatment, CIDR was inserted intravaginally in buffaloes on day first and on 7<sup>th</sup> day CIDR was removed and also inj. Cloprostenol sodium 526 µg was injected intramuscularly. Buffaloes were observed for estrus exhibition and inseminated after 48-72 h after PGF<sub>2α</sub> injection.

### Control (Group-II)

One week after presynchronization treatment, buffaloes from this group were treated with Inj. Normal Saline 2 ml on day first as well as on day 7. The buffaloes were observed for estrus exhibition and those exhibited estrus after second dose of NS were inseminated as per AM-PM rule. The pregnancy diagnosis was carried out per-rectally.

## RESULTS AND DISCUSSION

The number of buffaloes exhibited estrus were 87.50% in CIDR group and 37.50% in control group, respectively. The first service pregnancy rate was 42.85 and 33.33% in (Group-I to II), respectively.

The result of the present study for estrus exhibition or synchronization after CIDR treatment (Group-II) are in corroboration with the results reported by Ali *et al.* (2010) reported 83.33%, Rajamahendran and Thamoatham (1983) reported 80%, Barile *et al.* (2005) reported 80 and 94.40% estrus induction in PRID and PRID plus PMSG treated buffalo heifers, respectively while Caesar *et al.* (2011) reported 71.40% estrus induction rate in anestrus buffaloes.

Table 1: The Efficacy of CIDR Synchronization Protocol in Post-Partum Anestrus Buffaloes

S. No	Group	No. of Buffaloes Treated	No. of Buffaloes Exhibited Estrus	No. of Buffaloes Exhibited Premature Estrus	No. of Buffaloes Inseminated	No. of Buffaloes Pregnant and Pregnancy Rate
1	CIDR	8	7(87.50%)	0	7	3(42.85%)
2	Control	8	3(37.50%)	0	3	1(33.33%)

The present findings regarding pregnancy rate in CIDR treated buffaloes (Group-II) are in agreement with Barile *et al.* (2001) reported 50.00% in buffalo heifers and Lucy *et al.* (2001) reported 54.00% in dairy heifers. The higher pregnancy rate than the results of present study are reported by Singh *et al.* (1983) reported 77.79% under village condition during summer season. Martinez *et al.* (2000) reported 69% in cross bred heifers. Meharajuddin *et al.* (2010) reported 50% in anestrus Mehasana buffalo during breeding season. The variation in the pregnancy rate may be due to duration of CIDR insertion, different managemental and nutritional conditions, season nature of service and exogenous supplementation of hormones during implant removal as well as at the time insemination.

## CONCLUSION

From present study it may be opined that CIDR synchronization protocol is quiet effective estrus synchronization in post-partum anestrus buffaloes during summer season. 🌀

## REFERENCES

1. Ali R, Shukla S P, Nema S P, Pandey S S and Shukla M K (2010), "Studies on Induction of Ovarian Cyclicity and Conception Rate in Postpartum Anestrus Buffaloes Using Different Hormone Protocols, International Symposium on 'Biotechnologies for Optimization of Reproductive Efficiency of Farm and Companion Animals to Improve Global Food Security and Human Health'", and xxvi Annual Convention of ISSAR: 67.
2. Barile V L, Galasso A, Marchiori E, Pacelli C, Montemurro N and Borghese A (2001), "Effect of PRID Treatment on Conception Rate in Mediterranean Buffalo Heifers", *Livestock Production Science*, Vol. 68, pp. 283-287.
3. Barile V L, Malfatti A, Todini L, Barbato O, Pacelli C, Terzano G M, Allegrini S, Mazzi M and Borghese A (2005), "LH Peak and Ovulation in Buffalo Cows Treated for Estrous Synchronization Using Two Different Hormonal Schedule", *Ital. J. Anim. Sci.*, Vol. 4, No. 2, No. 307-309.
4. Caesar N K, Shukla S N, Shrivastava O P, Agrawal S and Agrawal R G (2011), "Studies on Fertility Response in Anoestrus Buffaloes Using a Modified CIDR-Based Synchronization Protocol", *Buffalo Bulletin*, Vol. 30, No. 3, pp. 184-187.
5. Lucy M C, Billings H J, Butler W R, Ehnis L R, Fields M J, Kesler D J, Kinders J E, Mattos, R C, Short R E, Thatcher W W, Wettmann R P, Yelich J V and Hafs H D (2001), "Efficacy of an Intravaginal Progesterone Inserts and an Injection of PGF<sub>2</sub>α for Synchronizing Estrous and Shortening the Interval to Pregnancy in Postpartum Beef Cows, Peripubertal Beef

- Heifers, and Dairy Heifers”, *J. Anim. Sci.*, Vol. 79, pp. 982-995.
6. Macmillian K L and Peterson A J (1993), “A New Intravaginal Progesterone Releasing Device for Cattle (CIDR-B) for Estrus Synchronization Increasing Pregnancy Rates and the Treatment of Post Partum Anoestrus”, *Anim. Reprod. Sci.*, Vol. 6, pp. 245-325.
  7. Martinez M F, Adams G P, Kastelic J P, Bergfelt D R and Mapletoft R J (2000), “Induction of Follicular Wave Emergence for Estrous Synchronization and Artificial Insemination in Heifers”, *Theriogenology*, Vol. 54, pp. 757-769.
  8. Mehrajuddin N, Patel D M, Sarvaiya N P and Killader A (2010), “Estrous Synchronization in Postpartum Anestrous Mehsana Buffaloes Using Different Hormone Protocols”, *Indian Journal of Field Veterinarians*, Vol. 6, No. 2, pp. 20-24.
  9. Rajamahendran R and Thamotharam M (1983), “Effect of PRID on Fertility in the Post Partum Buffalo Cows”, *Anim. Reprod. Sci.*, Vol. 6, pp. 111-118.
  10. Singh G, Singh G B, Sharma R D and Nanda R S (1983), “Experimental Treatment of Summer Anoestrous- Buffaloes with Norgestomet and PRID”, *Theriogenology*, Vol. 19, No. 3, pp. 323-329.

## APPENDIX

Plate 1: Insertion of CI DR-B in Vagina of Buffalo



Plate 2: Removal of CI DR-B from Vagina of Buffalo





**International Journal of Agricultural Sciences and Veterinary Medicine**

**Hyderabad, INDIA. Ph: +91-09441351700, 09059645577**

**E-mail: editorijasvm@gmail.com or editor@ijasvm.com**

**Website: www.ijasvm.com**

