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## Studies on anestrus problem of buffaloes in Dholpur (Rajasthan)

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### Abstract

The present investigation was carried out by Krishi Vigyan Kendra, Dholpur during two consecutive year 2014-15 and 2015-16 at village Devi Singh ka Pura (Block- Bari) and Ghanedi (Block-Rajakhera) in District Dholpur (Rajasthan). The main objective of this study was to overcome the problem of anoestrus in buffalo. The 18 anestrus buffaloes were randomly divided into Three groups; the first group (T<sub>1</sub>) buffaloes was Treated with Feeding Concentration + Green Fodder + Mineral Mixture, Second Group (T<sub>2</sub>) was treated with feeding concentration + Green Fodder + Mineral Mixture + Coco Tablets + Prajna Capsule and Third group of buffaloes was treated with T<sub>3</sub> farmers practices. Comparative study of three treatments was carried out by comparing their efficacy for oestrus induction and successful conception. The results showed that higher oestrus induction was found in (T<sub>2</sub>) treated with (feeding concentration + Green Fodder + Mineral Mixture + Coco Tablets + Prajna Capsule), which showed 66.66% and 83.33% of buffalo's oestrus during the year of 2014-15 and 2015-16 respectively.

**Keywords:** Anestrus, buffalo, feeding concentration, calving interval, treatment, incidence

### Introduction

Buffalo is a multipurpose species contributing towards milk, meat production and draft purpose and they are originated in Mediterranean and transgangetic plain region of North-Western India [28, 3]. Buffalo is the premier dairy animal of India as it contributes over 55 per cent of the total milk produced in the country. Besides producing large quantity of milk with high fat and Solid Non Fat (SNF) content, buffalo also plays a significant role as a draught and meat animal [18]. India has 108.7 million (approximately 21.2% of the total world) buffalo population. Productivity of buffaloes which depends largely on age of first calving and calving intervals is still low. There is a plenty of room for increasing productivity of buffaloes through improvement of reproductive performance. In India, the incidence of anoestrus in buffaloes has been reported from 9% to 85.5% and economical losses approximately Rs. 372.90 per day per animal [7]. Anestrus is one of the most commonly occurring reproductive problems in cattle and buffalo in India, affecting livestock productivity and economics to a great extent. The problem is more severe in sub urban and rural areas of the country. It is a functional disorder of the reproductive cycle which is characterized by absence of overt signs of estrus manifested either due to lack of expression of estrus or failure of its detection. Anestrus is observed in post pubertal heifers, during pregnancy, lactation and in early postpartum period in adult animals. The condition may be associated with uterine pathology such as pyometra, fetal resorption, maceration and mummification [15]. Anoestrus is one of the major causes of poor reproductive performance in buffaloes which results in long inter calving period [8, 9, 19]. Major etiological factors included that causes anoestrus in bovine are; nutrition [20] reported that poor and imbalanced diet reduces GnRH secretions) [21], lactation [27] reported in high yielders prolactin hormones secreted more which cause negative effect on GnRH secretion that causes anoestrus due to insufficient FSH and LH hormones) season observed reduced ovarian activity [26], Minerals also play an important role in regulation of reproduction and production in animals. Lower concentration of circulatory minerals mainly Ca, P and Mg results in impaired reproductive function leading to cessation of cyclic activity [17]. A large variation on incidence of anestrus in buffaloes has been reported in literatures depending upon species, breed, parity, and season, level of nutrition, manage mental conditions and geographic environment. In general, it has been reported between 12-29.12% in Jabalpur and Madhya Pradesh [12, 13 & 23] and 9.09- 82.50% in other parts of country [22 & 14]. Incidence of anestrus is higher in adult cattle and buffalo than the heifers [4].

Micronutrients also play a vital role in the control of reproduction. The minerals like calcium and phosphorous are very important in animal production and reproduction. Calcium and phosphorous play intermediate role in the action of reproductive hormones and enzymes at a sub cellular level in an integrated fashion in the initiation of estrus in animals [1, 24]. Opined that the imbalance or deficiency of trace elements (Zn, Cu, etc.) leads to inactive ovaries and repeat breeding in dairy animals. This study was planned to study the impact of mineral Mixtures and Green fodder in anestrus Murrah buffaloes.

### Materials and Methods

Initially trials were conducted during the year 2014-15 and 2015-16 at village of Devi Shingh ka Pura and Ganheri in Dholpur district with an objective to overcome the problem of anoestrus in buffalo. The 18 anoestrus buffaloes were randomly divided into Three groups; the first group (T<sub>1</sub>) buffaloes was Treated with Feeding Concentration + GF + MM, Second Group (T<sub>2</sub>) was treated with feeding concentration + GF + MM + Coco Tablets + Prajna Capsule and Third group of buffaloes was treated with T<sub>3</sub> farmers practices. Oestrus response was observed as percentage of females showing oestrous out of total animals treated. First service conception rate was calculated as percentage of animals conceived in each group. Comparative study of three treatments was carried out by comparing their efficacy for oestrus induction and successful conception.

### Results and Discussion

The results indicated higher oestrus induction was found in (T<sub>2</sub>) treated with (feeding concentration + GF + MM + Coco Tablets + Prajna Capsule). Which showed 66.66% and

83.33% of buffalo's oestrus during the year of 2014-15 and 2015-16 respectively. It helps to induce the behavioral oestrus by means of enhancing ovarian stimulation. It was followed by (T<sub>1</sub>) Treated with Feeding Concentration + GF + MM) which shows 33.33% and 50% during the year of 2014-15 and 2015-16 respectively. The present findings are in accordance with reports of [6] was recorded overall estrus induction and conception rate were found as 50% and 75% in G1 (mineral mixture), 75% and 83.33% G2 (Prajana HS + mineral mixture), 87.50% and 85.71% G3 (*Randia dumetorum* + mineral mixture), 62.5% and 80% G4 (*Tinospora cordifolia* + mineral mixture), 87.5% and 85.71%, G5 (*Randia dumetorum* + *Tinospora cordifolia* + mineral mixture) respectively, whereas no estrus symptom was exhibited in acyclic control group G0 while G6 as cyclic control. Similar finding has been reported by [16]. Dhoble and Gupta (1986) found higher calcium level in cyclic buffaloes as compared to acyclic buffaloes. Low calcium level in acyclic animals might be due to failure to maintain normal calcium level as a result of some metabolic disturbances or due to an increased calcium excretion similar observation in the present study also supports the viewpoint that calcium plays a major role in maintaining the normal reproductive efficiency in buffaloes [11]. Dhoble and Gupta (1987) observed a significantly higher concentration of Ca during the follicular phase as compared to the metestrus and diestrus phases [10]. In contrast, Buhecha *et al.*, 2016 reported significantly higher plasma Calcium concentration under CIDR protocol as compared to the values of other treatment groups [5]. However, the calcium level obtained in the present study was within normal range as reported by various authors in cyclic and non-cyclic anoestrus buffaloes [2, 25].

**Table 1:** Effect of feeding concentration, Green Fodder, Mineral Mixture, Coco Tablets and Prajna Capsule on anoestrus of buffaloes

Treatments	No. of anoestrus buffaloes		No. of Oestrus buffaloes		Conception Rate (%)	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
(T <sub>1</sub> ) Feeding Concentration + GF + MM	6	6	2	3	33.33	50.00
(T <sub>2</sub> ) feeding concentration + GF + MM + Coco Tablets + Prajna Capsule	6	6	4	5	66.66	83.33
T <sub>3</sub> farmers practices	6	6	1	1	16.66	16.66

### Conclusion

The study revealed that higher oestrus induction was found in (T<sub>2</sub>) treated with (feeding concentration + GF + MM + Coco Tablets + Prajna Capsule), which showed 66.66% and 83.33% of buffalo's oestrus during the year of 2014-15 and 2015-16 respectively. It helps to induce the behavioral oestrus by means of enhancing ovarian stimulation.

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