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**RESEARCH ARTICLE**

# Efficacy of Exapar, Janova and Mintrus (EJM) in the treatment of various reproductive disorders in Jaffrabadi buffaloes

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## *Abstract*

This study examined the impact of combined therapy of herbal heat inducer and mineral supplementation in the treatment of various reproductive disorders. A trial in two district of Gujarat namely Anand & Kaira was conducted in collaboration with Gujarat progressive dairy farmers association (GPDFA). Total 89 animals reported with the history of infertility, anestrous, repeat breeding, endometeritis and retained placenta were selected in present investigation. The animals were given treatment with Exapar, Janova & Mintrus combination (*M/S Ayurvet Ltd., Baddi*). Exapar Liq was given orally for 5 days @100 ml bid on first day followed by 50 ml bid for 3-5 days along with capsule Janova @ 3 cap/day for 2 days on day 6$^{th}$ and 7$^{th}$, and tablet Mintrus @1 tab/day for 20 days. The analysis of the result revealed that overall recovery was 89.9 % in terms of exhibiting signs of heat. Out of total 89 cases, 73 animals (82.02%) showed clear discharge & total 67 animals conceived (75.52 %). EJM combination was efficacious in inducing estrus and positive conception. It was concluded that EJM combination therapy was successful in treatment of different reproductive disorders.



## INTRODUCTION

The world buffalo population is continuously increasing and was estimated to be more than 170 million in 2003. More than 95 percent of the world population is found in Asia where buffalo play a leading role in rural livestock production. India possesses the highest 15% cattle population of around 199 million in the world. But in spite of having highest cattle population in world, the average productivity of cows and buffaloes is still very low (Mishra, 2010). During the last decades, genetic selection and improved management of herds have dramatically increased milk production of dairy cows but at the same time fertility has decreased (Butler, 1998). Anestrous and repeat breeding in buffaloes and cattle are two of the most serious reproductive problems affecting 30-40% of the total cattle and buffalo population. Reproduction disorders can lead to economic losses in term of reduced fertility, low life time reproduction, longer calving interval and increased medication costs in farm animals and ultimately cause complete or partial reproductive failure (Chaudhry *et al.*, 1993). The majority of cows and buffaloes resume ovarian cycles within the first month of calving (Patel *et al.*, 2005) but failure to resume ovarian activity after calving is the main reason for delay in conception. This results in a loss of 20-30 million tones of milk annually which translates to a loss of nearly Rs. 50000 crores annually. The present study was undertaken to study the efficacy of combination therapy of herbal products Exapar, Janova and Mintrus (M/S Ayurvet Limited, India) in the treatment of various reproductive disorders in Jaffrabadi buffaloes & Cross bred cows.

## MATERIAL AND METHODS

**Experimental design**

A field trial was carried out in collaboration with Gujarat Progressive dairy farmers association at Anand Gujarat. The experiment was conducted on a total of 89 Jaffrabadi buffaloes & crossbred cows with the history of infertility and repeat breeding reported from different villages of Dist. Anand & Kaira of Gujarat. The animals were categorized as anestrous animals, retained placenta, repeat breeder, endometritis and suffering from infertility. Treatment with combination of herbal uterine tonic and cleanser, Exapar Liq. at 100 ml bid on first day followed by 50 ml bid for 3-5 days, mineral supplementation, Tab. Mintrus 1/day daily oral administration for 20 days and herbal heat inducer, Capsule Janova 3 cap. /day for 2 days on day $6^{th}$ and $7^{th}$ was given to all the suffering animals.

Out of 89 animals 4 animals were found to be suffering from Retained placenta, 67 from anoestrous, 11 from endometritis, 4 from repeat breeding and 3 from infertility.

## RESULTS

**Retention of placenta:**

Retained placenta is defined as the failure to pass all or part of the placenta from the uterus within 24 hours of calving. Retained placenta is due to the failure of the villi of the fetal cotyledons to separate from the crypts of the maternal caruncle. Cows having a history of retained placenta, have an increased chance of retention on subsequent calvings. The incidence in cows varies from 4.0-16.1%. However, it can be much higher in problem herds and also increases during summer with increased parity, milk yield in the previous seasons and following birth of male fetus (El-Malky *et al.,* 2010; Ahmed *et al.,* 1999). In the present study, 4 animals, represented with history of placenta retention, exhibited the estrous after treatment with EJM (Table 1). The average no. of AI required for successful conception was 1 and conception rate was found to be 75 % (3 out of 4) after treatment with EJM and (Table 1). 3 out of 4 animals exhibited clear nature of discharge after treatment with EJM.

**Anoestrous:**

Anestrous is the lack or absence of the expression of estrus. Insufficient energy and protein intake and insufficient body condition at calving are limiting factors (Williams, 1990). The incidence of anestrous among crossbred cattle has been reported between 2.55–40.4 per cent (Narladkar *et al.,* 1994). Out of 67 animals represented with history of anestrous 64 (95.52%) animals exhibited the estrous after treatment with EJM (Table 1). Average number of AI required for successful conception was 1.8 and conception rate was found to be 85.07% (57 out of 67) after treatment with EJM. 89.55% (60 out of 67) of the animals suffering from anestrous showed clear nature of discharge following treatment with EJM (Table 1).

**Endometritis:**

When bacterial infection of the uterus persists beyond 4 weeks postpartum, the uterine infection is referred to as endometritis. It is a prevalent condition in postpartum dairy cows resulting in substantial economic losses due to decreases in both milk production and fertility (Sheldon *et al.,* 2004). In the present study, 9 out of 11 (81.82%) animals exhibited estrus after treatment with EJM. The average number of AI required for successful conception were 2.5 and conception rate was found to be 45.45% (5 out of 11) and (Table 1). 63.64% (7 out of 11) animals showed clear discharge after EJM therapy (Table 1).

**Table 1: Classification of reproductive disorders and response to herbal drugs and mineral supplementation**

| Disorder type | No. of animals suffering from disorder | No./ % exhibiting cyclicity after treatment | Clear Nature of discharge after treatment in animal (No.) | Avg. No. of AI required | No of animals conceived |
|---|---|---|---|---|---|
| **Retention of Placenta** | 4 (4.49 %) | 4 (post partum) (100%) | 3 (75 %) | 1 | 3 (75%) |
| **Anoestrous** | 67 (75.28 %) | 64 (95.52 %) | 60 (89.55 %) | 1.8 | 57 (85.07) |
| **Endometritis** | 11 (12.35 %) | 9 (81.82 %) | 7 (63.64 %) | 2.5 | 5 (45.45) |
| **Repeat Breeding** | 4 (4.49 %) | 2 (50%) | 1 (25%) | 2 | 1 (25%) |
| **Infertility** | 3 (3.37 %) | 1 (33.34 %) | 2 (66.67%) | 2 | 1 (33.34%) |
| Total no. | **89** | **80** | **73** | **1.86** | **67/ 89** |
| **Overall results (%)** | -- | 89.9% | 82.02 % | 1.86 | 75.52 % |

**Repeat Breeding:**

Cows that fail to conceive after 3 or 4 inseminations are termed as repeat breeders (Parkinson *et al.*, 2001). Inadequate estrous detection is the most frequent cause of repeat breeding. Repeat breeding in buffaloes and bovines is the most serious reproductive problems affecting 30-40% of the total cattle and buffalo population (NAAS, 2013). Out of 4 animals represented with history of repeat breeding 2 animals exhibited the estrous cycle after EJM therapy (Table 1). The average number of AI required for successful conception were found to be 2 and conception rate was 25 % (1 out of 4) and (Table 1).

**Infertility:**

The infertility component is common to any estrous cycle and reduces potential fertility by 20 to 30% (Short *et al.*, 1990). Cows with infertility has longer intervals from calving to first service and to conception and required more services per conception and lower pregnancy rate and conception to first service (Shiferaw *et al.*, 2005). Out of total 89 cases presented with different reproductive disorders, 3 animals (3.37%) were having the history of infertility. After EJM therapy 1 out of 3 animals (33.34%) exhibited the estrous and 2 animals (66.67%) showed the clear nature of discharge (Table 1). The average number of AI required for successful conception was 2 and conception rate was 33.34% (1 out of 3) and (Table 1).

## DISCUSSION

Genital abnormalities play an important role in animal breeding either by causing infertility or sterility and thus inflict heavy economic losses. Postpartum infertility is caused by delayed uterine involution, short estrous cycles and anestrous (Short *et al.*, 1990). The incidence of anestrus among crossbred cattle has been reported between 2.55–40.4 per cent (Narladkar *et al.*, 1994) from different parts of the country. Endometritis may be caused by inadequate hygienic conditions during parturition and on postpartum period and due to retained placenta (Azawi *et al.*, 2008). In the present study, out of 89 animals suffering from various reproductive disorders 80 animals exhibited estrus (89.9%) and 67 animals conceived (75.52%) following EJM therapy. The significant improvement in oestrus induction may be attributed to the constituent herbs of Exapar liquid viz., *Plumbago Zeylanica, Gloriosa superb and Aloe barbadensis* which have potent ecbolic, uterine stimulant, antimicrobial, anti-inflammatory, analgesics and muscular tissue stimulant properties (Shapira *et al.*, 1999; Bensky *et al.*, 2004; Oyedapo *et al.*, 2006).

In addition to it, capsule Janova is also scientifically well proven for its estrus inducing and synchronizing activity. Janova with ingredients viz., *Citrullus collocynthus, Piper longum and Piper nigrum* is known to exert gonadotropin like action and synchronizes the release of physiological hormones (FSH, LH and estradiol) for inducing ovulatory anoestrus (Srivastava, 1997).Trace elements are essential for reproductive health Boland (2003), reported that mineral deficiency effects the ovarian functions. In current study, the increase in conception rate may be attributed to tablet Mintrus containing Iron, Manganese, Selenium, Zinc, Cobalt, Copper and Iodine which are known to normalize the reproduction via contributing to the normal health of reproductive organs and reproductive cycles (Ceylan *et al.*, 2008; Rabbie *et al.*, 2010).

## CONCLUSION

The combined therapy was found to improve oestrus inducing activity and conception rate. It can be concluded that EJM combined therapy was successful in treatment of retained placenta and for endometritis.

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