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## Efficacy evaluation of oral phytogetic formulation (Liquid) in the uterine health and reproductive performance in dairy cows

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### Abstract

Reproductive disorders have been found to be a major reason for decreased reproductive efficiency in cattle and consequently reproductive efficiency is the major determinant of lifetime productivity of cows. Hence, there is a need for oral formulations which can improve the reproductive health without causing any adverse systemic effects on bovine health. The present study aimed to investigate the efficacy of a phytogetic uterine cleanser and restorative toner Ergovet in timely expulsion of placenta and maintenance of post-partum reproductive health. For this a clinical trial was conducted in 20 advanced pregnant HF cross cows which were divided randomly into two equal groups (I & II), (n=10). Group-I served as untreated control group. Group II animals were orally administered Phytogetic uterine tonic and restorative product Ergovet @ 200 mL/cow/day on first day followed by 100 mL once daily for next three days. Reproductive health parameters of parturition, time taken for expulsion of foetal membrane, uterine involution, first post-partum oestrus induction, incidence of retained placenta, repeat breeding, number of artificial inseminations required for successful conception and pregnancy status of animals were observed. Average time taken for expulsion of placenta, involution of uterus and oestrus induction was significantly lower in Ergovet supplemented group II as compared to untreated control group I. It may be concluded that the prophylactic administration of Ergovet is helpful in prevention of post-partum reproductive disorders in cattle, induces early expulsion of foetal membrane, accelerates the process of uterine involution, reduce the time period for first postpartum oestrus and reduce the number of AI for successful conception and for improving conception rate.

**Keywords:** Estrous cycle, phytotherapy, reproductive herbal medicine, dairy cow, endometritis, polymorphonuclear leukocytes

### 1. Introduction

Despite of advancement in controlling reproductive diseases in cattle, serious losses are still incurred and fertility remains a major concern for the cattle farmers worldwide. Fertility in cattle is hampered by major parturient problems (Patel *et al.* 2014) [1]. The two important factors for normal post-partum reproductive health are timely expulsion of foetal membrane and involution of uterus. Retention of placenta is one of the commonly occurred problem having significant effects on subsequent fertility.

The puerperal period is a very critical phase in the reproductive cycle of dairy cows (Frazer, 2005) [2]. Uterine involution includes reduction of uterine size, regeneration of endometrium, and disposal of bacterial defilement and resumption of ovarian cyclicity and is a prerequisite for subsequent gestation (Sheldon *et al.*, 2008) [3]. Retention of foetal membranes is the most common condition occurring in domestic animals following parturition (Noakes *et al.*, 2009) [4]. It is commonly followed by delayed involution of the uterus; drop in milk production and infertility resulting economic loss to the owner (Lalrintluanga *et al.*, 2010) [5]. It causes considerable economic losses in the herd due to decreased milk production, illness and high treatment cost, beside a decreased market value of the animal (Ahmed *et al.*, 2010) [6]. The intervals from calving to first service and conception are also significantly prolonged in animals that have suffered retention of placenta (Ahmed *et al.*, 2010) [6].

Without any appropriate and absolute involution of the uterus in the post-parturient period, the re-establishment of reproductive cycle activity might get unreasonably delayed. Additionally, even residual infection in the uterus might forestall the secretion of prostaglandin F2 alpha in an amount adequate to ensure luteolysis. Many medication arrangements are normally utilized for uterine cleansing and initiating involution (Han *et al.*, 2005; Rajashri *et al.*, 2017) [7, 8].

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The appropriate nutritional, diagnostic and treatment methods would undoubtedly help in alleviating these disorders. In view of the higher cost and invariable effects of hormonal therapy, the alternative approach in present scenario is non-hormonal therapy. Ergovet is a Phytogetic ecobolic preparation scientifically validated to be efficacious in cleaning up the uterus, for optimum uterine tone, and for timely involution of the uterus. The present clinical trial is designed to study the efficacy of phytogetic uterine cleanser and restorative product Ergovet manufactured by (M/S Carus Laboratories Ltd. Karnal) in improving the reproductive function of the dairy cow.

## 2. Material and Methods

### 2.1 Experimental design

For this study, 20 Holstein Friesians (HF) cross cows in their advance pregnancy were selected in Rajnish Dairy farm, Nilokhedhi, Karnal, Haryana and were randomly divided into two group of 10 animals each. Group I is untreated control and group II is the treatment group. The present study was conducted in accordance with the guidelines set by Animals Ethics Committee of the Institute.

Control group animals were not given any treatment or supplemented with any uterine tonic or cleanser or cleanser product. Treatment group II animals were prophylactically administered with Phytogetic uterine cleanser or restorative product Ergovet @ 200 mL orally once on day one, two hours after parturition followed by 100 mL once daily for next 3 days. The dose rate of the product is chosen on the basis of pre-experimental studies done to standardize dose rate of the

product and it was followed as per manufacturer's instruction. Being a phytogetic based formulation, the dosage is not body weight dependent.

### 2.2 Parameters studied

Different reproductive parameters were studied for clinical assessment of reproductive efficacy i.e. time required for expulsion of placenta, time required for involution of uterus, post-partum oestrus induction days, number of AI's required for successful conception, conception rate and incidence of reproductive disorders like retained placenta and repeat breeding.

Oestrus occurrence was detected daily with the help of teaser bull parading in morning and evening hours and females were with good quality frozen semen through AI. They were palpated per-rectum for confirming pregnancy at 60-90 days post-breeding.

## 3. Result and Discussion

### 3.1 Expulsion of Placenta

Average time taken for the expulsion of placenta in Ergovet supplemented treatment group II ( $7.4 \pm 0.59$  hrs) was significantly ( $P \leq 0.1$ ) lower than that of untreated control group ( $10.25 \pm 1.26$  hrs) (Table 1). No incidence of retention of placenta was recorded in the treated group II, however, 20% incidence of retained placenta was recorded in untreated group I (table 2). Ergovet gave desired level of activity in different puerperal disorders, and resulted in expulsion of foetal membranes, restoration of lochial discharge and involution of uterus.

**Table 1:** Reproductive parameters and status in Control Group

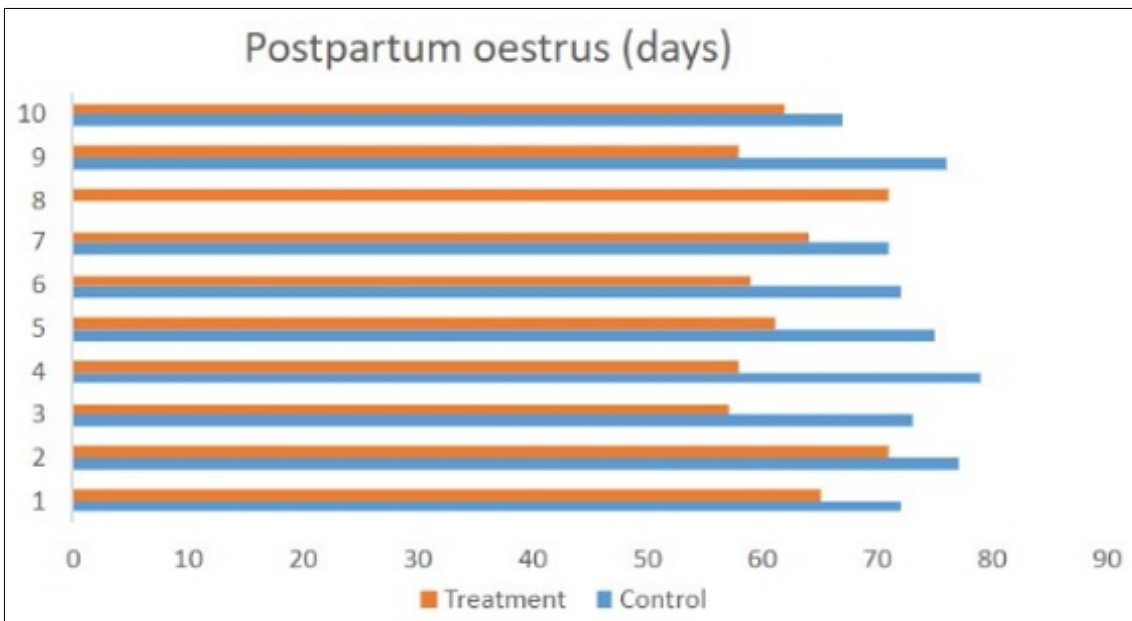
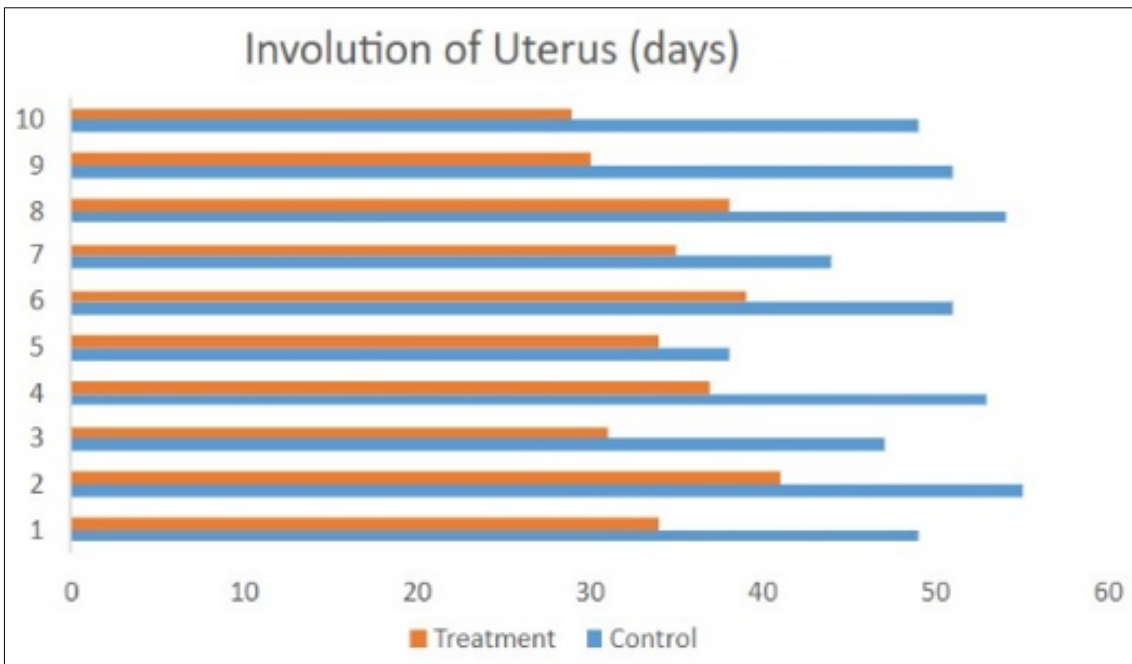
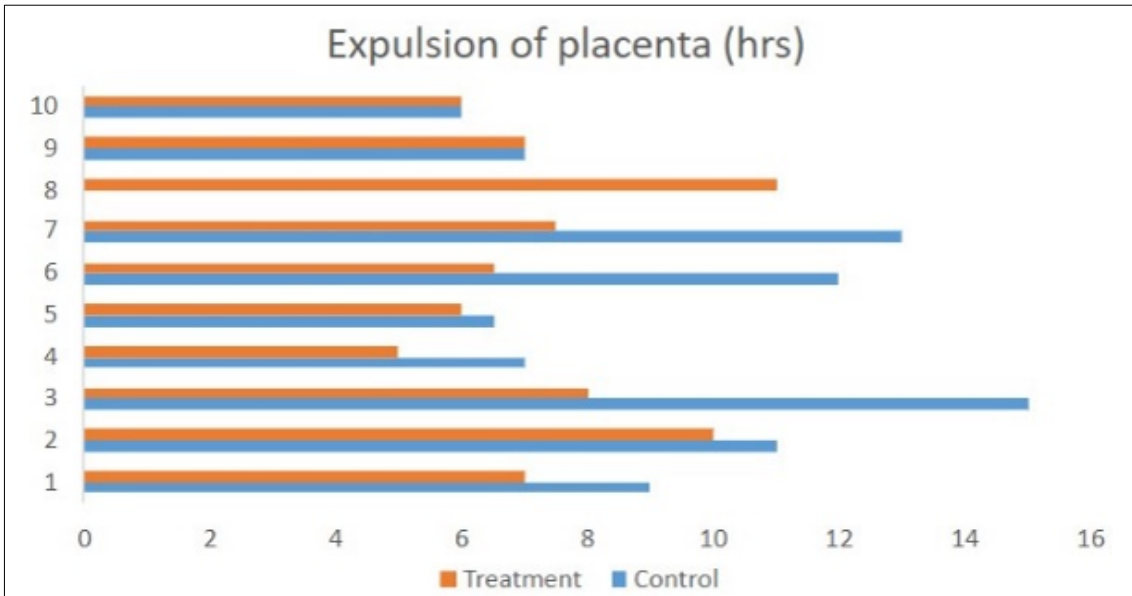
S. No.	Expulsion of placenta (hrs)	Involution of Uterus (Days)	Postpartum oestrus (Days)	Retained Placenta	Repeat Breeding	Metritis or Pyometra	No. of AI done	Pregnancy status
1	9	49	72	-	-	-	1	Pregnant
2	11	55	77	-	Positive	-	3	Non-Pregnant
3	15	47	73	-	-	Positive	3	Non-Pregnant
4	7	53	79	-	-	-	2	Pregnant
5	6.5	38	75	-	-	-	2	Pregnant
6	12	51	72	-	-	-	3	Pregnant
7	13	44	71	-	-	-	1	Pregnant
8	-	54	-	Positive	Positive	Positive	3	Non-Pregnant
9	7	51	76	-	-	-	3	Non-Pregnant
10	6	49	67	-	-	-	2	Pregnant
Avg. $\pm$ SE	$10.25 \pm 1.16$	$49.1 \pm 1.62$	$73.56 \pm 1.14$	10%	20%	20%	$2.3 \pm 0.26$	60%

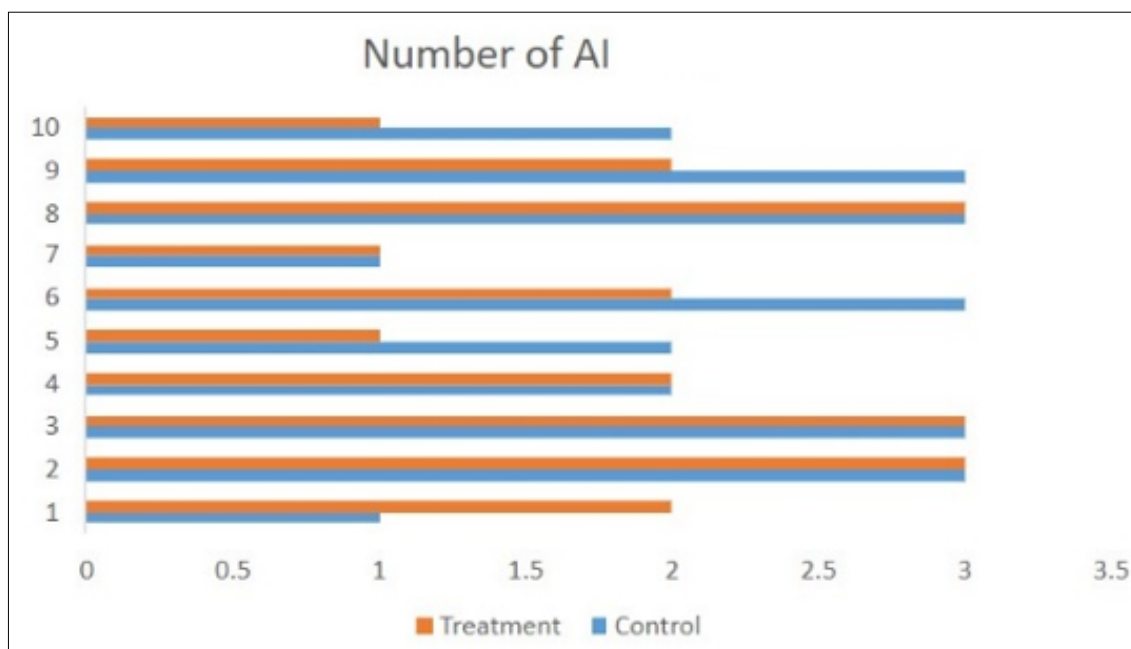
Values indicated are Mean  $\pm$  SE

**Table 2:** Reproductive parameters and status in Treatment Group (Ergovet)

S. No.	Expulsion of placenta (hrs)	Involution of Uterus (Days)	Postpartum oestrus (Days)	No. of AI done	Pregnancy status
1	7	34	65	2	Pregnant
2	10	41	71	3	Non-Pregnant
3	8	31	57	3	Pregnant
4	5	37	58	2	Pregnant
5	6	34	61	1	Pregnant
6	6.5	39	59	2	Pregnant
7	7.5	35	64	1	Pregnant
8	11	38	71	3	Non-Pregnant
9	7	30	58	2	Pregnant
10	6	29	62	1	Pregnant
Avg. $\pm$ SE	$7.4 \pm 0.59$	$34.8 \pm 1.26$	$62.6 \pm 1.63$	$2 \pm 0.26$	80%

Values indicated are Mean  $\pm$  SE





**Fig 1:** Graphical representation of reproductive parameters and number of AI required.

### 3.2 Involution of Uterus and post-partum Oestrus

No incidence of delayed involution of uterus was recorded in the treatment group. Involution of uterus occurred on an average about  $34.8 \pm 1.26$  days post-partum in treatment group as compared to that of  $49.1 \pm 1.62$  days of post-partum in untreated control group (table 1). In treatment group II, first post-partum estrus appeared on  $62.6 \pm 1.63$  days after parturition in comparison to  $73.56 \pm 1.14$  days post-partum in untreated control group (table 2). Beneficial effect of herbal uterine tonic-cleansing product in induction of post-partum oestrus and in improving the reproductive efficiency in cows and buffaloes has earlier been documented (Verma *et al.*, 1994; Khanna *et al.*, 1996) [9, 10]. Similar results are recorded in present trial also. Along with the uterine cleanser the uterine tonic or uterine immuno-stimulant activity of the Phytogetic solution is shown as it significantly reduced the time period required for the involution of the uterus as compare to the treatment group. Improvement of the puerperal condition in dairy cattle with the help of immune-stimulant drugs were also reported by Hussain *et al.*, 1991 [11].

### 3.3 Incidence of Reproductive Disorders

No incidence of repeat breeding, post-partum anestrus or any other reproductive disorders such as metritis, cervicitis, vaginitis or pyometra was recorded in Ergovet supplemented group II (Table 2). In contrast, one animal out of 10 untreated exhibited the signs of retained placenta, and two out of ten cows were found to be repeat breeders and two cases of metritis were recorded which later complicated into pyometra.

### 3.4 Conception Rate

Average Artificial inseminations (AI) done so as to achieve successful conception in treated group II was  $2 \pm 0.26$  as compared to that of  $2.3 \pm 0.26$  in the untreated control group. The average conception rate was 80% in treatment which was significantly higher as compared to that of 60% in control. The significant improvement in fertility & estrus induction in cows may be attributed to the constituent herbs of phytogetic uterine tonic and restorative solution. It has been documented that absence of proper involution in post-parturient period or metritis, in case of retained placenta, interferes with the

timely re- establishment of reproductive cyclicity. The phytogetic formulation was found to improve uterine tonicity, cervical relaxation, estrus inducing activity in early post-partum anestrus periods in addition to good conception rate. The product is found to be safe for animal usage and do not exert any detrimental effect on animal health. No incidence of retention of placenta, post-partum anestrus, incidence of metritis or pyometra or repeat breeding was recorded in the treatment group.

### 4. Conclusion

The polyherbal formulation containing tubers of *Cyperus rotundus*, *Moringa pterygosperma*, rhizome of *Zingiber officinale*, and *Allium cepa* has the potential to induce estrus response and luteal activity in dairy cows and is a possible treatment for ovarian inactivity in dairy farms. Our study indicated that oral administration of the polyherbal formulation (containing tubers of *C. rotundus*, *M. pterygosperma*, rhizome of *Z. officinale*, and *A. cepa*) was beneficial in improving the reproductive performance of dairy cows that administration of polyherbal formulation treated the ovarian inactivity in dairy cows as it had the potential to resume ovarian activity, induce oestrus and luteal activity, increase P4 concentrations, and finally increase the conception rate in dairy cows. However, a limitation was that our study was conducted on a group of postpartum anoestrus dairy cows in one herd, and another limitation was that the levels of macro-elements and micro-elements were not determined before and after treatment. Therefore, for clinical application, further studies are required on large numbers and different herds with multiple doses and concentrations of polyherbal supplementations along with the evaluation of the levels of the related essential minerals before and after treatment. This would help in elucidating the most appropriate and economic use of polyherbal formulation to generalize its clinical use in the treatment of ovarian inactivity and improvement of reproductive performance in dairy cows. Further studies on the effect polyherbal formulation's administration on milk production could be more economical and beneficial in improving both the milk production and reproductive performance of dairy cows.

## 5. Acknowledgement

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## 6. References

1. Patel RV, Khasatiya CT, Chaudhary JH, Parmar SC, Chaudhary JK. Therapeutic Efficacy of Methylethylgometrine maleate during Puerperal period in Cows. *Intas Polivet*. 2014;15(2):373-375.
2. Frazer GS. A rational basis for therapy in the sick postpartum cow. *Vet Clin North America Food Anim Pract*. 2005;21:523-68.
3. Sheldon IM, Williams EJ, Miller AN, Nash DM, Herath S. Uterine diseases in cattle after parturition. *Vet J*. 2008;176:115-21.
4. Noakes D, Parkinson J, England G. *Veterinary Reproduction and Obstetrics*. Edn 9, China: Saunders Elsevier; c2009. p. 418-425.
5. Lalrintluanga K, Lalnuntluangi H. Incidence of Retention of Fetal Membranes in Crossbred Dairy Cows in Mizoram. *Indian J Anim Res*. 2010;44(3):217-218.
6. Ahmed WM, El-Khadrawy HH, Amal RAH and Amer HA. Applied investigations on ovaries inactivity in buffaloes heifers. *Inter J Acad Res*. 2010;1(2): 26-32.
7. Han IK, Kim IH. Risk factors for retained placenta and the effect of retained placenta on the occurrence of postpartum diseases and subsequent reproductive performance in dairy cows. *J Vet Sci*. 2005;6(1):53-59.
8. Rajashri M, Kesharwani S, Srinivas G, Kumar PV and Reddy KR. Clinical Management of Retention of Fetal Membranes in Does (*Capra hircus*): Case Report. *Research Journal of Agricultural Science*. 2017;8(1):262-263.
9. Verma HK, Singla VK, Sidhu SS, Singh J. Role of Replanta in post-partum anoestrus buffaloes. *Indian J Anim Health*. 1994;33:133-134
10. Khanna S, Khurana KL, Tripathi VN, Manuja A. Effect of Exapar (herbal uterine cleanser and restorative) on some parameters of reproductive efficiency in buffaloes. *Indian Journal of Animal Reproduction*. 1996;51:231-237.
11. Hussain AM, Daniel RCW. Bovine Normal and Abnormal Reproductive and Endocrine Functions during the Postpartum Period: A Review. *Reprod Domest Anim*. 1991;26(3):101-111.