

# Evaluation of Efficacy of Herbal Intrauterine Infusion Uterofix Liquid in Treatment of Various Reproductive Disorders in Cows: A Field Study

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## ABSTRACT

**Objective:** To evaluate the efficacy of herbal intrauterine infusion Uterofix liquid in the treatment of various reproductive disorders in cows.

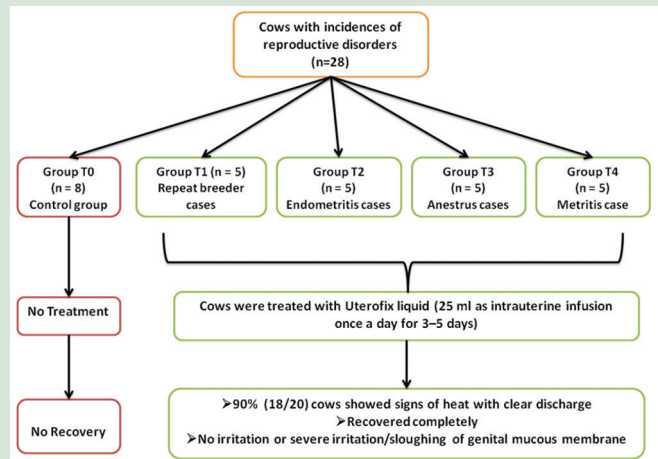
**Materials and Methods:** Based on symptoms of endometritis, anestrus, metritis, and repeat breeders, 28 cows were selected to study the efficacy of herbal intrauterine infusion Uterofix liquid (M/S Ayurvet Limited) in uterine infections study. Group T0 ( $n = 8$ ) cows served as control group, no treatment was given to this group. Group T1 ( $n = 5$ ) repeat breeder cows, Group T2 ( $n = 5$ ) endometritis effected cows, Group T3 ( $n = 5$ ) anoestrus cows, and Group T4 ( $n = 5$ ) metritis suffered cows were treated with Uterofix liquid (25 ml as intrauterine infusion once a day for 3–5 days). Total observational period was 60 days. Number of treatments needed, nature of discharge in first posttreatment estrus (physical examination), after treatment number of animal showing heat/estrus out of total treated, and posttreatment conception rate were used as criteria to judge the success or failure of treatment. **Results:** Results revealed that 18 out of 20 animals (90%) showed signs of heat with clear discharge, recovered completely without causing any irritation, or severe irritation/sloughing of genital mucous membrane after Uterofix liquid treatment. **Conclusion:** Herbal intrauterine infusion Uterofix liquid significantly treated the uterine infections in cows.

**Key words:** Anoestrus, endometritis, metritis, repeat breeder, Uterofix liquid

## SUMMARY

- Uterine infection is a major problem in reproductive management. A wide variety of genital tract diseases of female domestic animals are known to produce significant losses and responsible for poor fertility. Amongst these highly prevalent are metritis and repeat breeding in high-producing dairy cows which if remains untreated are associated with low conception rate per artificial insemination (AI), extended interval to pregnancy, increased culling, and economic losses. As herbal remedy the Uterofix liquid (Ayurvet Limited,

India) was highly efficacious as an intrauterine infusion to treat different reproductive disorders.



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## INTRODUCTION

The uterine environment promotes the normal embryonic development but cattle reproductive system is exposed to the external environment and thus highly prone to the uterine infection and reproductive disorders.<sup>[1]</sup> Sub-clinical, clinical and chronic metritis, endometritis, cervicitis, and vaginitis are frequently diagnosed disease conditions in dairy cows due to uterine infection.<sup>[2]</sup> The postpartum environment of the uterine lumen supports the growth of aerobic and anaerobic bacteria viz. *Escherichia coli*, *Arcanobacterium pyogenes*, *Fusobacterium necrophorum*, and *Prevotella* species. Uterine defense mechanisms help to eliminate these bacterial contaminants.<sup>[3]</sup> These pathogenic bacteria adhere to the mucosa, colonize, or penetrate the epithelium and/or release bacterial toxins that lead to the establishment of uterine disease.<sup>[4]</sup> Cows with uterine infection in the early postpartum period generally have lower conception rates at subsequent breeding. Uterine infections usually increase herd health costs, often reduce feed consumption, cause an appreciable reduction in milk production, and increase culling rate.<sup>[5]</sup> The reduced fertility in dairy herds is one of the most important factors affecting farm profitability. In order to treat and to quantify the severity of

the disease, it is crucial to diagnose uterine problems as soon as possible to have a good subsequent fertility. According to Viegli *et al.*,<sup>[6]</sup> about 70% of the animals (cattle, horses, sheep, goats, and pigs) treated with herbal remedies, followed by poultry (9.1%), dogs (5.3%), and rabbits (4.3%). Herbs with anti-microbial, anti-inflammatory, analgesic, and uterine stimulant properties can be utilized for treatment of uterine infection in animals.<sup>[7]</sup> The objective of this study is to evaluate the efficacy of herbal intrauterine infusion of Uterofix liquid in the treatment of these reproductive disorders in dairy cows.

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## MATERIALS AND METHODS

This study was designed to evaluate the efficacy of herbal intrauterine infusion Uterofix liquid in the treatment of various uterine infections. Total 28 cows with symptoms of endometritis, anestrus, metritis, and repeat breeders were selected for the study and were divided into respective groups. Group T0 ( $n = 8$ ) cows served as control group, no treatment was given to this group, Group T1 ( $n = 5$ ) cows were repeat breeder, Group T2 ( $n = 5$ ) cows suffered from endometritis, Group T3 ( $n = 5$ ) cows were suffered from anoestrus, and Group T4 cows ( $n = 5$ ) suffered from metritis.

All cows were treated with Uterofix liquid at the recommended dose of 25 ml as an intrauterine infusion once a day for 3–5 days or as required depending upon the severity of the disease condition. The treatment may be repeated after 21 days if there is no recovery (anestrus/endometritis persistence). Total observational period was 60 days. The success or failure of treatment was evaluated on the basis of following criteria viz., number of treatments needed, nature of discharge in first posttreatment estrus (physical examination), and after treatment number of animal showing heat/estrus out of total treated and posttreatment conception rate.

**Table 1:** Clinical symptoms of different treatment groups

Group	Cattle	Disease condition	Treatment	Clinical symptoms
T0	Control group	Endometritis (2) Anestrus (2) Repeat breeder (2) Metritis (2)	-----	Turbid discharge, animal didn't show signs of heat, no response to AI, didn't conceive
T1	1	Repeat breeder	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 1 <sup>st</sup> AI
	2	Repeat breeder	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
	3	Repeat breeder (Chronic)	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
	4	Repeat breeder	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 1 <sup>st</sup> AI
	5	Repeat breeder	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
T2	6	Endometritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Conceived after 1 <sup>st</sup> AI
	7	Endometritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
	8	Endometritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Conceived after 1 <sup>st</sup> AI
	9	Endometritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
	10	Endometritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal successfully Conceived after 2 <sup>nd</sup> AI Animal exhibited signs of heat
T3	11	Anestrus	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 1 <sup>st</sup> AI
	12	Anestrus	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 2 <sup>nd</sup> AI
	13	Anestrus	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 2 <sup>nd</sup> AI
	14	Anestrus	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat
	15	Anestrus	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 1 <sup>st</sup> AI
T4	16	Puerperal metritis	Uterofix Liq. @25 ml X 3 days	Discharge turbid Not recovered, no signs of heat exhibited Animal successfully Conceived after 2 <sup>nd</sup> AI
	17	Puerperal metritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 2 <sup>nd</sup> AI
	18	Puerperal metritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat Animal successfully Conceived after 2 <sup>nd</sup> AI
	19	Puerperal metritis	Uterofix Liq. @25 ml X 3 days	Discharge turbid Not recovered, no signs of heat exhibited
	20	Puerperal metritis	Uterofix Liq. @25 ml X 3 days	Discharge cleared Animal exhibited signs of heat

## RESULTS

Each treated case was kept under observation for a maximum period of 23–60 days in order to record the observations on posttreatment estrus, conception rate, nature of discharge, and for bacteriological culture examination studies.

In untreated control Group T0, no animal was recovered from the various uterine infections in absence of Uterofix treatment. Whereas in Uterofix liquid (25 ml × 3 days) treated groups, the recovery rate from the uterine infections was remarkable.

The percentage of the recovered animals from repeat breeding, endometritis, anestrus, and puerperal metritis were 90% (18 out of 20 animals exhibited signs of heat) [Table 1]. Conception rate was 40% (2) in Group T1, 60% (3) in Group T2, 80% (4) in Group T3, and 60% (3) in Group T4 after Uterofix liquid treatment. Overall after artificial insemination (AI), 12 out of 20 animals successfully conceived [Table 1] indicating the efficacy of herbal intrauterine infusion Uterofix liquid in the treatment of different reproductive disorders in cows by 60% for successful conception in animals in 1–2 AI.

## Immediate observations upon infusion

To study the side effect of the therapy, immediate postinfusion observations were also made. No symptoms of indigestion or off feed or inappetence after treatment recorded in any of the treated cases. In none of the treated cases, any symptom of the bloat or tympany developed. In none of the treated cases, any irritation in mucous membrane of the uterine membrane was observed, since there were no symptoms in animal such as uneasiness. No other discomfort observed in the animal.

## DISCUSSION

Repeat breeding can be a major factor involved in infertility. A “repeat breeder” defined as any cow that failed to conceive even after three or more number of services, has normal estrus cycle length.<sup>[8]</sup> Abnormal uterine environment may cause repeat breeding. According to Gani *et al.*,<sup>[9]</sup> from the bacterial isolates recovered from the uterus of the repeat breeders as well as from normal cyclic cows have a positive correlation ( $r = 0.94$ ), which agreed with the relationship between uterine infection and repeat breeders. In current study, all animals with history repeat breeding showed signs of heat and successfully conceived after the 1<sup>st</sup> AI on herbal intrauterine Uterofix liquid infusion. This may be because of antibacterial property of Uterofix liquid constituent herbs viz. *Plumbago zeylanica*, *Azadirachta indica*, and *Acacia catechu*.<sup>[10–12]</sup> Endometritis is uterine lining inflammation that is commonly initiated at parturition.<sup>[13]</sup> Immunomodulators of the uterine defense mechanisms act as chemoattractants and increase the number of polymorphonuclear cells in the endometrium and help to resolve endometritis in cows.<sup>[14]</sup> On treatment of cows suffering from endometritis with herbal intrauterine liquid Uterofix, all animals exhibited signs of heat and successfully conceived after 1<sup>st</sup> or 2<sup>nd</sup> AI. The improvement was because of Uterofix liquid constituent herbs viz. *Curcuma longa* and *Saraca indica*, which possess immunomodulatory properties.<sup>[15,16]</sup> Similarly, cows suffered from anestrus and metritis also gets recovered after intrauterine infusion of Uterofix liquid. Hence, it can be recommended that intrauterine infusion Uterofix liquid was useful for treating the animals with reproductive disorders in the field condition.

## CONCLUSION

As all 18 out of 20 animals (90%) recovered completely showed signs of heat with clear discharge, remained good state of health, production, and reproduction. This suggested that the product Uterofix liquid was highly efficacious as an intrauterine infusion to treat different reproductive disorders and was nonirritating, safe to genital tract.

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## Conflicts of interest

There are no conflicts of interest.

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