

## **FERTILITY IMPROVEMENT PROGRAMME FOR THERAPEUTIC MANAGEMENT OF ANESTROUS – SURVEY REPORT OF BHAVNAGAR DISTRICT, GUJARAT**

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**Abstract:** The study was carried out in a randomly selected 25 villages of Bhavnagar district of Gujarat state through fertility improvement programme organized by Sarvottam dairy, during July-2017 to January-2018. A total of 1,327 observed anestrus cases were taken into consideration for therapeutic management of infertility in large ruminants. Clinical data obtained reveals causes for infertility conditions are mainly due to underdeveloped reproductive organs, pyometra/metritis and cystic ovarian cases at 52.52%, 33.98% and 13.49% respectively. It is also noticed that the mineral/vitamin deficiencies in heifers, unscientific practices for retention of placenta cases which is leading to pyometra and unnecessary hormonal practices are the main causes for anestrus conditions in large ruminants.

**Keywords:** Anestrus, Fertility Improvement Programme (FIP), Sarvottam dairy, Bhavnagar.

### **Introduction**

Anestrus is one of the most commonly encountered cause for infertility conditions in large ruminants affecting livestock productivity and economy of the farmers. It is mainly 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. Expression of estrus is also influenced by seasonal changes, stress and aging. In heifers, it poses a herd problem possibly due to low plane of nutrition, stress of seasonal transition or extremes of climatic conditions (Kumar *et al.*, 2014). Kumar *et al.*, 2014 reported that 24.73 per cent and 20.84 per cent anestrus cases were observed in cattle and buffalo respectively. According to 2012 livestock census, Gujarat have 9.98 million cow population which is increased to 25.18% from 2007 to 2012 whereas buffalo population have 10.38 million which is increased to 18.37% from 2007 to 2012 (Anonymous, 2017). Fertility

improvement programme is a government scheme to support livestock farmers and objective has to improve fertility by reducing Non Pregnant Dry (NPG-Dry) and Not Even Calved Once (NECO) population at Village level which results in main economic losses to the farmers. Ovarian cysts are defined as follicular structures with a diameter of at least 25 mm that fail to ovulate observed in one or both ovaries which directly effect on normal ovarian cycle (Taktaz *et al.*, 2015).

### Materials & Methods

The study was carried out in a randomly selected 25 villages (Table-1) of Bhavnagar district of Gujarat state through fertility improvement programme organized by Sarvottam dairy, during July-2017 to January-2018. A total of 1,327 observed anestrus cases were taken into consideration for therapeutic management of infertility in large ruminants.

**Table-1:** Clinical data pertaining to therapeutic management of anestrus

Name of Village	Total number of cases attended in camp	No. of cases for Undeveloped reproductive organ	No. of cases for pathological condition (pyometra/metritis)	Cystic Ovaries
Tataniya	42	24	11	07
KanKot	83	60	21	12
Nana khutvada	58	24	27	07
Bhikada	77	28	36	13
Fariyadaka	60	33	20	07
Madhiya	49	27	17	05
Khari	48	24	17	07
Neswad	32	21	07	04
Devgaana	48	22	18	08
Chorvadla	37	15	15	07
Mokhdaka	69	35	25	09
Titodiya	43	22	16	05
Rajpara-Bhayati	64	35	22	07
Virpur	51	28	15	08
Ratanpar	36	20	11	05
Panderiya	34	23	08	03
Aneeda	59	25	25	09
Thorali	53	28	18	07
Kamadavaav	38	19	13	06
Dharaii	37	23	10	04
Bhammariya	57	27	21	09
Malekvadar	41	23	13	05
Methla	38	18	15	05

Mewasa	81	42	26	13
Shedhawadar	92	51	34	07
Total Case	N=1327	697 (52.52%)	451 (33.98%)	179 (13.49%)
Average Mean	53.08	26.71428571	18.04	7.16
Standard Deviation (SD)		10.28882889	7.546964	2.62488095
Standard Error (SE)		2.057765779	1.509393	0.52497619

## Result & Discussion

An underdeveloped reproductive organs, pyometra/metritis and cystic ovarian cases in the range of 15-60, 7-36 and 3-13 respectively are taken into consideration for therapeutic management of anestrus. Clinical data obtained reveals that average mean of anestrus cases are due to underdeveloped reproductive system, pyometra/metritis and cystic ovary at  $26.71 \pm 2.05$  (52.52%),  $18.04 \pm 1.50$  (33.98%) and  $7.16 \pm 0.52$  (13.49%) respectively.

Various minerals can effect on reproductive performance of ruminants. Reproductive failure may be observed due to deficiencies of single or combined trace elements (Hidiroglou, 1979). Phosphorus deficiency leads to delayed onset of puberty and silent or irregular estrus in heifers, and long inter calving period in cows. (Yasothei *et al.*, 2014). Hence, each anestrus case is provided with 50kg of concentrate/animal and 1 kg of milk-o-gold mineral mixture/animal. Gustafsson *et al.*, 1996 reported that 26 dairy cows with postpartum pyometra (23 cases) or post insemination pyometra (3 cases) were treated systemically with various doses of prostaglandin  $F_{2\alpha}$ . Twenty-two of the cows (85%) started to empty the uterus within 24 hours after the treatment, evaluated by rectal palpation. Pyometra and metritis cases treated with intrauterine solution like oxytetracyclin (I/U), Enrogil (I/U) and 5% povidine iodine solution for cleaning the affected uterine infections. Positive response for estrus detection of cows treated with 50, 100 and 250 microgram GnRH hormone groups shown at the ratio of 18 of 28 (64%), 23 of 28 (82%) and 23 of 30 (77%), respectively, in contrast to 6 of 28 (21%) in control group (Bierschwal *et al.*, 1975).

**Table-2:** Therapeutic management schedule for Cystic ovarian cases.

Hormone	Dose	Day
Receptal (GnRH)	100mcg or 2.5 ml/animal	1 <sup>st</sup> day of treatment
Lutalyse (Cloprostenol Sodium)	25mg or 5 ml/animal	9 <sup>th</sup> day of previous GnRH treatment
Receptal (GnRH)	100mcg or 2.5 ml/animal	11 <sup>th</sup> day of previous GnRH treatment

## Conclusions

By considering all the clinical data obtained from fertility improvement programme in therapeutic management of anestrus shows that mineral/vitamin deficiencies especially in heifers, practice of unscientific methods for removal of retained placenta leading to pyometra condition and unnecessary hormonal practices in large ruminants are the main causes for infertility.

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