



# Incidence of Repeat Breeding in Cattle at Organized Dairy Farms

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## ABSTRACT

The present study was carried out at organized dairy farms at Jehanabad. A total of 144 cows were selected. The general and breeding history of animals, presented for gynecological checkup were recorded with respect to age of animal, number of calving, day past from last calving, nature of estrus cycle, number of insemination done without conception were noted. Animals observed to be in estrus for the first or second time were considered as normal or fresh animal. For third time or more after insemination were taken as repeat breeding animals. The highest incidence of repeat breeding (23.52%) was recorded during the month of February and the lowest (11.90%) during the month of June. The highest incidence of repeat breeding was observed during monsoon (23.80%) and lowest during summer (13.63%) season. The overall incidence of repeat breeding out of total number of 483 cases examined was 16.82 percent. The highest incidence of (42.85%) was observed in heifers which calved first time.

**Key words:** Cattle, Incidence, Infertility, Repeat breeding, Season.

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## INTRODUCTION

The success of dairy economics lies in ensuring proper and optimal reproductive rhythm of each individual female in the herd within the normal physiological limits. Any deviation in breeding rhythm results in progressive economic losses due to widening of calving interval as well as lactation during life time. Infertile cattle mean a loss in milk production whereas fewer calves reduce the efficacy of selection in dairy herd improvement. Sub fertile and repeat breeding conditions are most vexing problems in dairy cattle and account for huge economic loss to the farmer. A wide variety of micro flora infect female genital tract and play a significant role in repeat breeding animal, by causing inflammation of endometrium. In addition metabolites of bacteria and inflammatory exudates pH after of uterine and vaginal fluid resulting in failures of conception due to death of spermatozoa or fertilized ovum Raghavan *et al* (1971). The incidence of repeat breeding is variable under different management conditions. It varies

month wise, season wise, parity wise and breed wise. Periparturient disease has been reported to influence the occurrence of repeat breeding in dairy cattle. These factors however have been reported separately and it is very difficult to assess their relative contribution to this problems. This study was designed to find out the incidence and magnitude of repeat breeding syndrome (RBS) in cross breed cows at organized dairy farmers.

## MATERIALS AND METHODS

The present study was conducted on the animals of organized dairy farms at Jehanabad. The general and breeding history of animals, presented for gynecological checkup were recorded with respect to age of animal, number of calving, day past from last calving, nature of estrus cycle, number of insemination done without conception were noted. Animals observed to be in estrus for the first or second time were considered as normal or fresh animal. For third time or more after insemination were taken as repeat breeding animals.

**Table 1: Month wise incidence of repeat breeding in cross breed cattle.**

Month	Total no. of estrous animal	No. Repeat breeding animals(%)	Over all Incidence (%)
January	20	3(15.00)	<b>16.82%</b>
February	37	8(23.52)	
March	27	5(18.52)	
April	35	6(17.14)	
May	44	8(15.18)	
June	42	5(11.90)	
July	49	10(20.40)	
August	73	6(13.96)	
September	45	8(17.77%)	
October	39	6(15.35%)	
November	40	6(15.35%)	
December	32	5(15.62%)	
<b>Total</b>	<b>483</b>	<b>76</b>	

### Gynecological check up of animals

The hind quarters and external genitalia of the animals were properly washed and cleaned with 1:1000 potassium permanganate solution and subjected for through gynecological check up. At first the condition and external genitalia were examined and the internal genitalia organs were palpated for rectum and findings were recorded.

### Selection of animals

After gynecological check up those animals were selected which fell under true repeat breeding category *i.e.*, animal which have regular estrus cycle and estrus period and no palpable abnormalities could be recorded but failed to conceive following there or more artificial insemination with good quality semen of know fertile bull. Finally on the basis of breeding history and gynecological check up 144 cows selected from organized dairy farms at Jehanabad.

### Examination of physical characteristics of cervical mucus:

The color and consistency of cervical mucus was noted after visual examination. The animals harboring turbid, translucent, opaque cervical mucus

or cervical mucus with flakes of pus were excluded from present study. The consistency of cervical mucus was classified as thin and thick Sukhdeo and Ray (1971). This cervical mucus flowed easily on a glass slide kept inclined at 45 degree angle where as thick cervical mucus remained sticky on glass slide when kept in inclined and 45 degree angle.

### Statistical Analysis

Statistical analyses of the data were done by methods describes by Snedecor and Cochran (1968).

## RESULTS AND DISCUSSION

The month wise, season wise and parity wise incidence of repeat breeding were calculated. Month wise incidence of repeat breeding animals has been presented table1. The highest incidence (23.52%) was recorded dairy the month of February and the lowest (11.90%), during month of June. The overall incidence of repeat breeder out of the total number of 450 animals examined was 16.82%. During the study, 76 cases of repeat breeding were identified month wise (Table 2). The highest incidence of repeat breeding has been observed during the

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monsoon season (23.80%) followed by winter (14.86%) and summer season (13.63%) (Table 3).

Figures in Parentheses are percent incidence of repeat breeding.

**Table 2: Month wise distribution of repeat-breeding in cross breed cattle.**

Month	No. of repeat-breeding cases	Distribution (%)
January	3	3.97
February	8	10.52
March	5	6.59
April	6	7.59
May	8	10.52
June	5	6.57
July	10	13.15
August	6	7.83
September	8	10.52
October	6	7.59
November	6	7.59
December	5	6.57
<b>Total</b>	<b>96</b>	<b>100.00</b>

It was evident from table 4 that sequence of calving influenced repeat breeding first calves showed maximum incidence (42.85%) and fourth calvers the lowest (18.33%). Test of proportion showed that there was non significant difference between heifer and first calves, heifer and second calvers, first calvers and second calvers, heifer and third calves, first calvers and third calvers, second calves and third calvers or heifer and fourth calvers. Significant values ( $P < 0.05$ ) were obtained between second calvers and fourth calvers third calvers and fourth calvers significant value ( $P < 0.01$ ) were obtained between first calvers and fourth calvers (Table 4).

### Occurrence of repeat breeding

The animals (144) were analyzed for the incidence of repeat breeding. Out of which 76 animals were recorded as repeat breeder. The highest incidence (23.2%) of repeat breeding noted during the month of February and the lowest (11.90%) during the month of June. the overall incidence of repeat breeder was 16.52%. the present observation as in close agreement with the reports of Dhabale *et*

**Table 3: Season wise incidence of repeat breeding in cross breed cattle.**

Seasons	Total No. of estrus animal	No. of repeat breeding cases	Incidence (%)	Calculated chi-square at 3 d.f.
Winter (Nov to feb)	148	22	14.86	5.672**
Summer (Mar to June)	176	24	13.63	
Monsoon (July to Oct)	126	30	23.80	

\*\* $P < 0.01$ .

**Table 4: Parity-wise incidence of repeat breeding in cross bred cattle.**

C a l v i n g sequence	No or Repeat breeder cases	%of incidence	Proportion test			
			1 <sup>st</sup> calving	2 <sup>st</sup> calving	3 <sup>st</sup> calving	4 <sup>st</sup> calving
Heifer	20(65)	30.76	1.4531 <sup>NS</sup>	0.9210 <sup>NS</sup>	0.8060 <sup>NS</sup>	1.6072 <sup>NS</sup>
1 <sup>st</sup> calving	30(70)	42.85		0.5195 <sup>NS</sup>	0.682 <sup>NS</sup>	2.9988**
2 <sup>st</sup> calving	25(65)	38.46			0.1123 <sup>NS</sup>	2.484**
3 <sup>st</sup> calving	24(64)	37.56				2.396*
4 <sup>st</sup> calving	11(60)	18.33				

\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , NS: Non significant.

al (1996), who also recorded the incidence of repeat breeding varying from 15.79 to 18.01 per cent. However, the present observation differed from the finding of Gustason and Emanuclson (2002), who reported comparatively lower incidence of repeat breeding (3.00 to 12.30%). Kumar and Punniamurthy (2003) and Selvaraj *et al* (2003), reported comparatively higher incidence (20.64 to 73.7%) under this condition. This variation in results might be due to differences in breeds, agro climatic condition, parity nutritional and management conditions.

### CONCLUSION

Repeat breeding conditions are most vexing problems in dairy cattle and account for huge economic loss to the farmer. A wide variety of micro flora infect female genital tract and play a significant role in repeat breeding animal.

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