

The Gynecological Disorders in Dairy Cattle on the Survey of Allahabad

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Abstract: *The genetic selection has resulted in gynecological disorder dairy cow with very high milk yields but reduced fertility, due mainly to an increase in gynecological disorders. The research was conducted to estimate the proportion of gynecological disorders among dairy cattle. The factors estimated were; cow parity and gynecological status. The result of this experiment showed the incidence of gynecological disorders in high yielding dairy cows was prevalent. Repeat breeding was the major postpartum reproductive problem comprising (37.44%) of the samples. Higher gynecological disorders were also associated with lower parity. These disorders subsequently reduced reproductive performance by prolonged intervals from calving to first artificial insemination and from calving to pregnancy. Abnormalities in the gynecological system such as repeat breeder, silent heat, anestrus and ovarian cysts, as well as lower fertility have been recorded during the lactation. In conclusion, the study revealed that incidence of repeat breeder is mostly prevalent in dairy cows. Moreover, the incidence of gynecological disorders was higher in summer season and hence appropriate preventive and/or therapeutic measures as per the type of abnormalities need to be undertaken.*

Keywords: Gynecology, Cattle, Anoestrus, Repeat breeder and Reproduction.

1. Introduction

Reproductive performance is one of the important factors determining the profitability of the dairy farmers. This can be achieved by resuming the ovarian cycle within 30 days of postpartum, first service conception is less than 90 days, with an average calving interval of one year. Fat, one of the nutrients apparently enhanced postpartum reproductive performance by increasing the energy status of the animals and thus stimulated the ovarian follicular growth and luteal functions (Highshoe *et al.*, 1991; Wehrman *et al.*, 1991). Increased milk production has been the emphasis of genetic improvement programs. However, decreasing reproductive performance was observed coincident with increasing lactational yields (Butler and Smith, 1989; Butler, 2000; Barrett, 2000; Lucy, 2001). Substantial energy requirements at the onset of lactation in high yielding dairy cows result in a severe negative energy balance during the early lactation period (Bell, 1995), which may adversely impact postpartum health and fertility (de Vries *et al.*, 1999; Lucy *et al.*, 1991). This research reports the incidence of various gynecological disorders and its effect on milk production in dairy cows in Allahabad.

2. Materials and Methods

The research on gynecological parameters and abnormalities of dairy cows was undertaken from February to September 2013 in Block Jasra Allahabad. Individual cows or records included in the study were obtained either by interview and/or from individual record sheets. Data were used to calculate gynecological disorders for the last calving and their effect on gynecological performance. Records on insemination, conception, and calving of dairy cows were used to determine the following basic reproduction parameters: days between parturition and first service; and days open (days between parturition and conception). The various types of reproductive disorders were grouped into 4 categories: 1) Ovarian cysts which are fluid-filled structures $\geq 20\sim 25$ mm in diameter that persist in the absence of a

corpus luteum (CL) for more than 20 days (Roberts, 1971; Kesler and Garverick, 1982; Garverick, 1997; Wiltbank *et al.*, 2002); 2) Anestrus, which is defined as the lack or absence of the expression of estrus; 3) Repeat breeder which is defined as the cow that has clinically normal reproductive track with normal or nearly normal oestrous cycles and oestrus periods and has been bred two or more times to a fertile bull but failed to conceive (Roberts, 1971); and 4) Silent heat, defined as a cow that has a normal reproductive cycle and ovulation takes place but there are no heat signs. However, the cow is often blamed for the shortcomings of the herdsman who does not notice the (week) heat signs (Gietema, 2005). Data was subjected to the Generalized Linear Model procedure (PROC-GLM) of the Statistical Analysis System (SAS Institute, Cary, NC, USA). Differences among treatment means were determined using Duncan's multiple range tests. Statistical significance was established at $p < 0.05$.

3. Results and Discussion

The survey of gynecological disorder findings are summarized in Table 1. Repeat breeder had the highest incidence (37.44%); followed by anestrus (26.67%); silent heat (23.58%); and ovarian cysts (12.31%). In table 2 the effect of parity distribution on Gynecological disorders. Cows in the 2nd parity had the highest number of disorders. Cows with parities of 1, 2 and 3 have more gynecological disorders than those with a parity of 4, 5, 6 and higher. Causes of reproductive failure are categorized into repeat breeding, silent heat, anestrus and ovarian cysts. The result of this study concurs with the findings of earlier researches on the effects of increased lactation on reproductive efficiency of dairy cows. Repeat breeders had the highest incidence of reproductive disorders. Repeat breeding can be a major factor involved in infertility. These cows are characterized by low fertilization rates (Graden *et al.*, 1968) and early embryonic loss (Gustafsson and Larsson, 1985), thereby decreasing overall conception rates (Ferreira *et al.*, 2010; Yusuf *et al.*, 2010).

Table 1: Incidence of repeat breeder, silent heat, Anoestrus and ovarian cyst in dairy cow of jasma block Allahabad.

Problem	No. of cases	Percent of cases (%)
Repeat breeder	73	37.44
Silent heat	46	23.58
Anoestrus	52	26.67
Ovarian cyst	24	12.31
Total	195	100

Potential causes of repeat breeding include sub-clinical infection of reproductive tract (Rao, 1982), age of the animal (Bartlett *et al.*, 1986), errors in detection of oestrus (DeKriuf, 1978), endocrine dysfunction (Gustafsson *et al.*, 1986), nutritional deficiencies and others (Francos *et al.*, 1977). Silent heat is regarded as one of the most prominent infertility problems in dairy farms, affecting about 40~60% of post-partum periods (Claus *et al.*, 1983; Schopper *et al.*, 1993). The high rate of silent heat is mainly a result of bad oestrus detection (Mwaanga and Janowski, 2000; Opsomer and Kruijff, 1999). According to some authors, the elevated progesterone levels during oestrus and inhibition of oestrus behavior result to negative energy balance in high yielding cows (Ras, 1999). Previous research has shown that anoestrus after AI result to elongation of service period, and consequent economic losses. Several factors affect postpartum anoestrus such as nutrition plane, milk yield, body condition score (BCS) at calving, suckling, parity and calving season (Shah *et al.*, 1986; Barile, 2005; El-Wishy, 2007). Another major cause of economic loss in dairy operations is ovarian cysts; cows diagnosed with cysts exhibit extended calving intervals (Bartlett *et al.*, 1986). Ovarian cysts in dairy cows have been reported to be a major cause of economic loss and reproductive dysfunction in dairy operations (Garverick, 1997), and cows diagnosed with cysts often exhibit extended calving intervals (Bartlett *et al.*, 1986). The risk factors for ovarian cysts include milk production volume (Johnson *et al.*, 1966), estrogen content of forages (Barga, 1987), and uterine infections (Bosu and Peter, 1987; Peter *et al.*, 1989).

Table 2: Incidence of parity, number of gynecological disorder and percent of gynecological disorder in dairy cow in jasma block Allahabad.

Parity	No. of disorder	Percent of disorder (%)
1	41	21.03
2	55	28.21
3	44	22.55
4	16	8.21
5	18	9.23
Over 6 th	21	10.77
Total	195	100

In summary, health cows are critical to maintain optimum gynecological performance. To prevent economic losses, cattle herds should have quality nutrition, yearly pregnancy checks, and disease prevention. Reproductive goals should include maximizing the herd's pregnancy rate, the number of cows bred early in the number of calves born early in the calving thus increasing the producer's ability to make a profit.

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