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SHORT COMMUNICATION

A retrospective study on periparturient disorders in crossbred cows at organized farms in Uttar Pradesh

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ABSTRACT

The prevalence of dystokia, stillbirths, abortions, retention of foetal membranes, prolapse of uterus and metritis were ascertained at organized farms of Bareilly and Allahabad Districts of Uttar Pradesh, during the period September 1st, 1995 to August 31, 1999. The prevalence of dystokia, stillbirths, abortions, retention of foetal membranes, prolapse of uterus and metritis were 0.84, 4.60, 3.68, 15.22, 0.92 and 18.14 per cent respectively at Bareilly and 4.86, 5.24, 4.61, 23.32, 2.12 and 33.42 per cent respectively, at Allahabad. The highest prevalence of dystokia, abortions, retention of foetal membranes were observed in summer season (1.41, 4.58, 18.66 and 6.42, 9.63, 32.09 per eent) and still births in rainy season (9.72 and 7.41 per cent) at both farms of Bareilly and Allahabad, respectively. The metritis was common in rainy season at Bareilly (23.96) and summer (42.25) at Allahabad.

Key words : Reproductive disorders, organized farms, crossbred, retrospective study

The periparturient disorders in cattle are of great economic concern as they cause loss in milk production, retard the subsequent reproductive performance of affected animals and pose a danger to other in contact animals of the herd (Laven and Peters, 1996). Dairy owners are familiar with the occurrance of periparturient disorders such as dystokia, retention of foetal membranes, prolapse of pelvic organs, meritis etc. to occur normally in the farm animals. But when their prevalence increases beyond the normal limits, the efforts should be made to determine their causes and to control their recurrence. Keeping this in view a retrospective epidemiological study was conducted on four years data, at two organized farms of Uttar Pradesh to assess the prevalence and seasonal occurrence of periparturient disorders so that effective preventive measures could be instituted.

The required informations were collected for a period of four years, ranging from September 1st 1995 to August 31st, 1999 at two organized farms of Allahabad and Bareilly districts in Uttar Pradesh. The animals maintained at both organized farms were crossbred cattle, the crosses of Holstein Friesian with native breeds like Sahiwal, Hariana, Gir and Red-Sindhi with varying proportion of exotic blood. All the animals were maintained under uniform managemental conditions at individual farms.

The cows were reared in loose housing system and group feeding was in practice. The pregnant cows were shifted to individual calving pens about a fortnight before the expected date for proper nutritional care and perinatal management. A minimum 45 to 60 days pre as well as post partum production and reproduction rest was allowed to all cows. The diagnostic testing against Brucellosis was the normal practice and all positive reactors were eliminated. The abnormal births included dystokia, still births, abortions and retention of foetal membranes. The disorder specific and season specific percent prevalence rates were worked out by using the total number of disorder in specific category and in particular season as numerator and total number of calving during that period as denominator. In the study of the effect of season, the years were divided into three seasons viz., winter (November to February), summer (March to June) and rainy (July to October) and the information of September and October, 1995 and July and August 1999 were excluded from study for proper categorization of months in seasons.

The overall prevailence rate of periparturient disorders at organized farm of Bareilly and Allahabad districts are depicted in Table 1. The prevalence rates for all the

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Table 1. Periparturient disorders at organized farms of Uttar Pradesh

Disorders	Bareilly		Allahabad		Total	
	No.	%	No.	%	No.	%
Total calving	1196	–	802	–	1998	–
Normal calving	905	75.67	497	61.97	1402	70.17
Abnormal calving	291	24.33	305	38.03	596	29.82
Dystokia	10	0.84	39	4.86	49	2.45
Still birth	55	4.60	42	5.24	97	4.85
Abortion	44	3.68	37	4.61	81	4.05
Retention of foetal membranes	182	15.22	187	23.32	369	18.47
Prolapse of uterus	11	0.92	17	2.12	28	1.40
Metritis	217	18.14	268		485	24.27

Abnormal calving = Dystokia + premature still birth + Abortion + Rop

periparturient disorders were higher at farm at Allahabad in comparison to Bareilly and this variation may be because of difference in management and geo-agro-climatic conditions of two districts.

The overall prevalence of dystokia was 2.45 per cent at both the farms while 0.84 per cent and 4.86 per cent at Bareilly and Allahabad farms, respectively. The dystokia occurs as a result of variable causes. The difference in managemental practices at two farms is the probable cause of difference in prevalence of dystokia at these farms. The prevalence of dystokia has also been studied by previous workers (Kaikini *et al.*, 1976 and Webber *et al.*, 1976 and Webber *et al.*, 1986) and present results are in agreement with the previous findings.

Prevalence rate of prolapse of uterus was 0.92 and 2.12 per cent at Bareilly and Allahabad, respectively with overall prevalence of 1.40 per cent at both farms. In other studies a prevalence rate of 1.13 per cent (Kaikini *et al.*, 1976) and 2.13% (Narladkar *et al.*, 1994) has also been recorded for prolapse of uterus.

At farms of Bareilly and Allahabad occurrence of abortions was recorded 3.68 and 4.61 per cent, respectively with an overall prevalence of 4.05 per cent. The other workers have also recorded a prevalence rate in range of 1.51 to 6.60 per cent for abortions in crossbred cows (Kaikini *et al.*, 1976; Saini *et al.*, 1988; Ramalingam *et al.*, 1990). Several bacteria, viruses, fungi, protozoa have been incriminated as causes of abortion in cattle. Mineral deficiency, starvation, hormonal disturbances and stress increases the risk of abortion at farm.

In the present study, a prevalence rate of retention of foetal membranes was 15.22 and 23.32 per cent at organized farms at Bareilly and Allahabad districts, respectively. The overall prevalence of retention of foetal membranes (RFM) on both farms was 18.47 per cent. The incidence of retention of foetal membranes after normal parturition is 2-10 per cent in general but can be as high as 20 per cent but after obstetrical problems, a prevalence rate of 25-50 per cent or more has been reported (Kaikini *et al.*, 1976; Pandit *et al.*, 1981; Filseth *et al.*, 1982; Saini *et al.*, 1988; Narladkar *et al.*, 1994; Pandey *et al.*, 2000).

Metritis was most common condition among reproductive disorders. A prevalence rate of 18.14 and 33.42 per cent was observed at Bareilly, Allahabad, respectively with an overall occurrence of 24.27 per cent at both farms. A prevalence rate varying from 1.4 to 39.1 per cent has been recorded in crossbred cows in other studies (Filseth *et al.*, 1982; Cancellotti *et al.*, 1984; Zezula *et al.*, 1988; Narladkar *et al.*, 1994). The difference in prevalence of metritis at two farms might be due to difference in managemental practices and climatic conditions.

Still birth was another condition recorded at farm and a prevalence rate of 4.60 and 5.24 per cent was recorded for still births at Bareilly and Allahabad farms, respectively. A prevalence rate of 1.32 and 2.54 per cent has been recorded by Kaikini *et al.* (1976) and Saini *et al.* (1988).

While studying the distribution of disorders in different seasons, comparatively higher prevalence of dystokia, abortions, retention of foetal membranes were observed in summer and still births in rainy season. The prolapse of uterus and metritis were common in rainy season

Table 2. Effect of season on periparturient disorders (Nov. 1st, 1995 - June 30th, 1999)

Periparturient Disorders	Bareilly						Allahabad						Total					
	Winter		Summer		Rainy		Winter		Summer		Rainy		Winter		Summer		Rainy	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total calving	533	--	284	--	288	--	287	--	187	--	243	--	820	--	471	--	531	--
Normal calving	427	80.11	205	72.18	206	71.53	199	69.34	90	48.13	146	60.80	625	76.34	295	62.63	352	66.29
Abnormal calving	106	19.89	79	27.82	82	28.47	88	30.66	97	51.87	97	39.92	194	23.66	176	37.37	179	22.71
Dystokia	5	0.94	4	1.41	1	0.35	18	6.27	12	6.42	9	3.70	23	2.80	16	3.40	10	1.88
Still birth	17	3.19	9	3.17	28	9.72	10	3.48	7	3.74	18	7.41	27	3.29	16	3.40	46	8.66
Abortion	12	2.25	13	4.58	9	3.13	7	2.44	18	9.63	8	3.29	19	2.32	31	6.58	17	3.20
Retention of foetal	72	13.51	53	18.66	44	15.28	53	18.47	60	32.09	62	25.51	125	15.24	113	23.99	106	19.96
Prolapse of uterus	4	0.75	2	0.70	3	1.04	4	1.39	11	5.88	2	0.82	8	0.98	13	2.76	5	0.94
Metritis	69	12.95	66	23.24	69	23.96	86	29.97	79	42.25	79	32.51	155	18.90	145	30.79	148	27.87

at Bareilly and in summer at Allahabad (Table 2). The maximum number of calving were observed in winter months but major periparturient disorders were seen in summer season which may be due to heat and associated stress which resulted into early parturition, abortions, dystokia, retention of foetal membranes (RFM) and associated metritis. The higher prevalence of still births in rainy season might be due to change in fodder and conducive environment for growth of micro flora and disease transmitting agents. Other studies have also reported the seasonal occurrence of periparturient disorders.

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REFERENCES

Cancellotti, F.M., Gagliardi, G., Dalvit, P. and Turilli, C. (1984). The most important infectious diseases of the bovine genital tract. Prevalence and incidence in north-eastern Italy. The most important infectious diseases of the bovine genital tract. 11th Conference of the O.I.E., Regional Commission for Europe, Vienna 25-28 Sept., 1994, pp 231-241.

Filseth, O., Grondadl, J., Minsaas, A., Manum, N., Bakken, G., Fimland, E., Fossen, P.P., Solbu, H., Elvhaug, G., Birkeland, S. and Nygaard, A. (1982). Annual Report from Norwegian disease recording scheme for cows. 1981, Norsk Veterinaertidsskrift, **94**: 397-405.

Kaikini, A.S., Kadu, M.S., Bhandari, R.M., Belorkar, P.M. (1976). Studies on the incidence of normal and pathological termination of pregnancies in dairy animals. Indian J. Anim. Sci., **46**: 19-22.

Laven, R.A. and Peters, A.R. (1996). Bovine retained placenta : aetiology, pathogenesis and economic loss. Vet. Rec., **139**: 465-471.

Narladkar, B.W., Bakshi, S.A., Pargaonkar, D.R. and Kigraskar, S.U. (1994). Incidence of various reproductive disorders in Deoni cows and their crossbreds. Livestock Advisor, **19**: 28-30.

Pandey, S., Pandit, R.K. and Pandey, S. (2000). Incidence of retention of placenta with special reference to subsequent reproductive performance in Frieswal Cows. Indian Vet. J., **70**: 1145-1146.

Pandit, R.K., Shukla, S.P. and Parekh, H.K.B. (1981). Incidence of retention of placenta in Gir cows and their crosses with special reference to subsequent fertility. Indian J. Anim. Sci., **51**: 505-507.

Ramalingam, G., Balagopal, R., Manickam, R. (1990). Incidence of abortion in crossbred cows. Indian Vet. J., **67**: 171-172.

Saini, M.S., Khanna, A.S. and Chopra, S.C. (1988). Incidence of retention of placenta its treatment and subsequent fertility in crossbred (temperate x zebu) dairy cattle. Indian J. Anim. Prod. Manag., **4**: 61-65.

Webber, R.J., Esdale, C.R., O-Rourke, P.K. and Rudder, T.H. (1986). Dystokia and associated effects in a Central Queensland Hereford herd. Animal Production in Australia. Proceedings of Australian Society of Animal Production, **16**: 387-390.

Zezula, S.A., Glazer, T., Zdunczyk, S., Ras, A., Kucharski, J., Janowski, T. and Chemiel, J. (1988). Value of cytological examination of uterine mucus for diagnosis of endometritis in cows in postpartum period. Acta Academiae-Agriculturae-ac-Technicae-Olstenensis-Veterinaria, **18**: 103-108.