Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2320-7051.6629

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. **6 (2):** 1561-1566 (2018)

Research Article

International Journal of Pure & Applied Bioscience

OPEN ACCESS

Incidence of Reproductive Disorders in Cows in Faizabad District Uttar Pradesh

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Received: 12.03.2018 | Revised: 20.04.2018 | Accepted: 26.04.2018

ABSTRACT

The present study, incidence of reproductive disorders in cows was reported from the data available as a cases registered at Teaching Veterinary Clinical Complex, College of Veterinary science and Animal Husbandry, N.D.U.A.T, Kumarganj Faizabad from July 2004 to June 2014. The overall incidence of reproductive disorders was observed as 21.40 % in cows. The incidence of repeat breeding, Retention of placenta, anoestrus, endometritis, prolapse, pyometra, dystocia, cervitis and abortion was recorded as 4.39, 1.65, 3.32, 2.15, 1.09, 1.91, 1.26, 4.24 and 0.72 per cent, respectively. It could be inferred that incidence of repeat breeder was highest among the reproductive disorders. These disorders can be managed by adopting good nutritional and manage mental facilities in the herd.

Key words: *Incidence, Reproductive disorders & cow*

INTRODUCTION

Reproductive performance of a dairy cow is considered ideal when she produces a healthy calf each year. Late sexual maturity and prolonged calving interval would resulted in severe economic losses through reduced life time productive performance, poor intensity of selection and large number of culls[37]. For the good fertility management, 95% cows in the herd after calving must be served by keeping the average calving to first service interval to less than 70 days, more than 55% over all heat detection rate, and 50% or more pregnancy rate[9].

The major problems that have direct impact on reproductive performance of dairy cattle are abortion, dystocia, retained placenta, metritis, prolapse, anoestrus and repeat breeder. These reproductive disorders result in considerable economic loss to the dairy industry due to slower uterine involution, reduced reproductive rate, prolonged inter-conception and calving interval, negative effect of fertility, increased cost medication, drop in milk production, reduced calf crop and early depreciation of potentially used cows[23].

Cite this article: Verma, S.K., Srivastava, S., Verma, S.S.K., Sharma, P. and Gautam, V., Incidence of Reproductive Disorders in Cows in Faizabad District Uttar Pradesh, *Int. J. Pure App. Biosci.* **6(2):** 1561-1566 (2018). doi: http://dx.doi.org/10.18782/2320-7051.6629

To have a calf every twelve or thirteen month, timely resumption of postpartum uterine functions is essential [10]. Verma and Mishra[35]. recorded data on 2289 calving records of Hariana, Holstein-Friesian and their cross-breds maintained at Indian Veterinary Research Institute, Izatnagar (U.P). The incidence of various reproductive disorders i.e. dystocia, retained placenta and uterine prolapsed was 10.18 percent.

Bovine reproductive diseases and conditions result in economic losses caused by decreased production and delayed reproduction as well as increased treatment and preventive measurement costs. Retained placentas and cesarean delivery can result in a prolonged postpartum interval to conception and decreased milk production[3]. Infertility, regardless of cause, is a major reason for culling animals. Noakes *et al*.[29], recorded that the incidence of repeat breeding was for higher in crossbred cows (17.57%) as compared to buffaloes (12.74%) and indigenous cows (8.64%).23 Machado *et al*., conducted a study on 1742 cows from 3 dairy farms located near Ithaca, New York from May 4, 2010, until January 17, 2010. Cows with a purulent or mucopurulent secrection in the sample were diagnosed with endometritis. The incidence of clinical endometritis, metritis and retained placenta were 10, 15.2 and 5.6, respectively.

Maji *et al.*[25], observed a total of 823 numbers of cattle (342 Crossbred Jersey and 481 Non-descript) were presented for gynaeco-clinical examination after considering specific history of cattle at 26 fertility camps during January 2006 to December 2008 in flood prone rural areas of Howrah district of West Bengal, India. The incidence of anestrous and repeat breeding were 67.68 % and 32.32 % respectively. Incidence of anestrous was higher in Non-descript cattle (53.86 %) than that Crossbred Jersey cattle (46.14 %) and incidence of repeat breeding was also higher in non-descript cattle (68.05%) than that of crossbred (31.95%) animal. Irrespective of breeds the incidence of true anestrous, subestrus, anestrous due to pyometra with persistent corpus leuteum and infantile genitalia with other congenital disorders were 81.51 %, 9.34%, 1.44% and 7.71% respectively. It also revealed that incidence of repeat breeding due to anovulatory estrus, follicular cyst and uterine infection were 43.61%, 46.24%, and 10.15% respectively which were also significantly higher ($P<0.001$) in Non-descript cattle in comparison with Crossbred Jersey (72.4 vs. 27.0 %, 59.34 vs. 40.65% and 88.89 vs. 11.11%) respectively for Non-descript vs. Crossbred Jersey.

Incidence of uterine torsion, which was considered to be higher in buffaloes although most reported data originate from clinical records and a retrospective data analysis (2001-2011) of our university farm at Vallabhnagar revealed no incidence at all in 529 calvings of the Surti breed[33]. Data involving clinical cases report that uterine torsion is considered to be the single largest maternal cause of dystocia in buffaloes with an incidence as high as 56 to 67% [27,34].

MATERIAL AND METHODS

For Incidence of reproductive disorders in 8936 cows were recorded from the data available in the form of case registered at Teaching Veterinary Clinical Complex, College of Veterinary science and Animal Husbandry, N.D.U.A.T, Kumarganj Faizabad from July 2004 to June 2014.

Calculation of incidence rate of reproductive disorders:

Incidence was calculated by using the number of reproductive disorder due to a specific disease as numerator divided by the total diseases as denominator during the study period.

$$\text{Incidence (\%)} = \frac{\text{Number of animals affected by a particular disorder during the period}}{\text{Total number of reproductive disorders affected cases at TVCC}} \text{x}100$$

Statistical analysis:

The influence of various non-genetic factors, *viz.* period and season of calving on incidence of reproductive disorders associated problems were analyzed by using the Chi-square method. All data were tabulated using Excel program. Cattle and buffaloes population at different years was analyzed using simple linear regression.

RESULTS AND DISCUSSION

The Major problems that have direct impact on performance of dairy cattle are repeat breeding, endometritis, retention of placenta, prolapse, abortion, cervicitis and dystocia. These resulted considerably economic losses to the dairy industry due to slower uterine involution, reduced reproductive rate, prolong inter-conception and calving interval, negative effect on fertility, increased cost of medication, reduction in milk production, reduced calf crop and early depreciation of potentially used animals. 10-30% of lactation might affected by infertility and reproductive disorders[13] and 3-6 % herd culled annually in the develop country for these reason.

The overall incidence of reproductive disorders in cattle was reported as 21.40 % (Table-1). The highest incidence of repeat breeding among Reproductive disorders was found with as 4.39% and lower incidence was recorded for abortion as 0.72%.

In present finding, the incidence of repeat breeder was reported as 4.39 % in cattle (Table-1). The various workers have reported incidence of repeat breeder from 5.5 to 33.3%[16, 20]. Variation in incidence of repeat breeders in different countries was observed researchers as 1.29-13.33%, that incidence of repeat breeding is higher at artificially inseminated cows than naturally bred cows[8,15,19].

Highest incidence of repeat-breeders was recorded in summer season in buffaloes whereas in cattle, higher value was reported in winter season. A similar finding was also observed by Verma *et al.*[35]. Variation in incidence of these conditions might be partially explaining the wider distribution in different countries. Veterinary extension services intended to inform farmers about the risk factors and their mitigation will definitely reduce the extent of this problem in dairy cattle.

The overall incidence of retention of placenta was observed as 1.65% in cattle (Table-1). Various workers reported the incidence of retention of placenta in cattle in the range of 0.8-26 % [11,17]. These differences might be due to variation in management practices and hygienic condition which, differ from time to time and place to place. Higher incidence of retention of placenta in cattle might be due to more number of cross bred animals were reported during the study period.

Incidences of anoestrus were recorded as 3.32 % in cattle (Table-1). The incidence of anoestrus recorded in cattle is comparable to the finding of reported in various researchers [1,5,11]. and higher incidence recorded by Narladkar *et al*[28]. The variation in incidence of anoestrus has been attributed to factor like under nutrition, Body score condition, severe negative energy balance and poor heat detection. Negative energy balance is strongly associated with the length of the post-partum anovulatory period through attenuation of LH pulse frequency and low level of blood glucose, Insulin and IGF-1, the collectively estrogen production by dominant follicles[6].

The incidence of endometritis in cattle was reported as 2.15% (Table-1). The incidence of endometritis during the study period was within the range as observed in the other study that based on palpation of per-rectal diagnosis of endometritis[12]. Our findings were lower than the observation recorded by[24,31]. and higher incidence than that of Getachew and Moges[11], in cattle. The diagnostic method used in this study may be the main reason for low incidence of disease, with the low volume uterine levage technique only the presence of muco-purulent secretion inside the uterus was assessed eliminating false positive diagnosis that are more common with other method of diagnosis such as rectal palpation and visual inspection of vaginal discharge[31, 32].

The prevalence of prolapse in the present study was observed as 1.09% in cattle as also well described in Table-1. Our finding in the present study was higher than that observed[26], Grohn *et al*.[12], and lower than that and Verma *et al*.[35], and Kakar *et al*.[16], in cattle. This variation may be due to variation in managemental and environmental condition of this study.

The incidence of anoestrus was recorded as 1.19 % in cattle (Table-1). Our finding was higher than the observation [2, 4] in cattle. The clinical pyometra associated with the factor that cause lesion in the uterus, such as dystocia to in parturition and retention of fetal membrane[7,32]. The incidence of pyometra also depends on the sensitivity of the diagnostic method and the time of postpartum, when the examination was performed

The incidence of dystocia was reported as 1.26% in cattle and (Table-1). Our observations recorded in the present study were higher than that observed[12]. in cattle. This finding was in agreement with those observed by Grohn *et al*.[12], but lower than that observed by[11,16]. in cattle. The incidence of dystocia was impact by herd and managemental practice difference among the area may influence dystocia. Herd manageres should be discussed calving procedures with their veterinarian to assure that proper timing and calving assistance, technique are used when providing assistance during parturition. First parity cow were at the highest risk of having dystocia therefore a suitable managerial practice for reducing the incidence of dystocia may utilize. When selecting sires for breeding cows and specially the heifers, alternatively an improved heifer feeding programs should be supplemented to ensure optimal heifers size at breeding.

The prevalence of abortion in the present study was observed as 0.72 % in cattle (Table-1). Findings of present study were higher than that observed[12,18] and lower than finding of Getachew and Moges[11], in cattle. This variation may be due to variation in managemental and environmental factors in the study. The higher incidence of abortion was recorded in summer season in buffalo might be because of poor managmental condition to avoid summer stress in buffaloes.

Table 1: Incidence of different type reproductive disorders of cattle from year 2004 to 2014

Month	Repeat Breeder (%)	ROP (%)	Anoestrus (%)	Endometriti (%)	Prolapse (%)	Pyometra (%)	Dystocia (%)	Cervicitis (%)	Abortion (%)	RD (%)	Total Population
July	4.60(32)	4.60(32)	3.16(22)	2.59(18)	1.44(10)	3.61(18)	1.01(7)	5.22(26)	0.72(5)	24.43(170)	696
August	5.68(38)	1.79(12)	4.93(33)	2.69(18)	1.20(8)	1.20(8)	1.20(8)	3.14(21)	0.90(6)	22.72(152)	669
September	3.87(29)	1.34(10)	4.67(35)	1.74(13)	1.07(8)	2.54(19)	1.20(9)	3.87(29)	1.07(8)	21.36(160)	749
October	3.86(27)	1.57(11)	4.72(33)	2.43(17)	1.14(8)	2.15(15)	1.57(11)	5.44(38)	0.57(4)	23.46(164)	699
November	5.73(41)	1.12(8)	4.62(33)	1.82(13)	1.26(13)	1.96(14)	1.54(11)	4.62(33)	0.98(7)	24.19(173)	715
December	4.62(38)	1.22(10)	2.92(24)	2.07(17)	0.73(6)	1.70(14)	1.09(9)	4.37(36)	0.61(5)	22.72(187)	823
January	3.59(29)	1.36(11)	2.97(24)	1.61(13)	0.87(7)	1.61(13)	1.61(13)	4.58(37)	0.50(4)	19.70(159)	807
February	3.88(33)	1.65(14)	3.06(26)	1.76(15)	1.18(10)	1.41(12)	0.82(7)	3.76(32)	0.47(4)	18.00(153)	850
March	2.88(23)	1.13(9)	3.00(24)	3.13(25)	1.00(8)	1.63(13)	1.50(12)	4.38(37)	0.63(5)	19.50(156)	800
April	4.03(25)	1.61(10)	2.90(18)	1.77(11)	0.97(6)	2.42(15)	1.45(9)	6.12(38)	0.81(6)	22.22(138)	621
May	4.30(32)	1.74(11)	3.36(25)	2.55(19)	1.21(8)	1.74(13)	1.07(8)	3.36(25)	0.81(6)	19.73(147)	745
June	5.91(45)	0.92(7)	3.02(23)	1.71(13)	1.05(8)	2.23(17)	1.18(9)	3.54(27)	0.66(5)	20.20(154)	762
Pool	4.39(392)	1.65(147)	3.32(297)	2.15(192)	1.09(97)	1.91(171)	1.26(113)	4.24(379)	0.72(64)	21.40 (1913)	8936

CONCLUSIONS

It could be inferred that incidence of repeat breeder was highest among the reproductive disorders in cow in the vicinity of N.D.U.A.T. Kumarganj, Faizabad. It could indicate farmers are not aware with modern husbandry practices in eastern Uttar Pradesh. Government must be taken strategic action plan to upgrade the knowledge of livestock owners.

Acknowledgements

Authors, thanks to honorable, Vice chancellor, NDUAT, Faizabad and Dean College of Veterinary sciences & Animal Husbandry for

proving necessary facilities and support to conduct present study

REFERENCES

1. Agarwal, S.P. and Buck, N.C., Incidence of abnormal ovarian conditions and their impact on reproduction in breeding herd of cows. *Indian J. Vet. Sci.* **38:** 533–540 (1968).
2. Ali R., Muhammad Ali Raja, Abdul Jabbar and Muhammad Hidayat Rasol. Pathological Studies on reproductive Organs of Zebu Cow. *Journal of Agriculture & Social*, 1813-2235 (2006).
3. Barkema, H.W, Schukken, Y.H., Guard, C.L., Brand, A. and Weyden, G.C. Cesarean section in dairy cattle: A study of risk factors. *Theriogenology*, **37:** 489 (1992).
4. Bhattacharya, P., Luktuke, S.N. and Ray, D.J., Incidence of normal and pathological condition of female buffalo genitalia in different months. *Indain J. Anim. Sci.*, **40(4):** 425- 429 (1970).
5. Bhattacharyya and Bucho. Inidence of Reproductive Disorders of Cattle in Kashmir Valley. *Indian J. Dairy Sci.*, **61:** 165 (2008).
6. Butler, W.R.. Energy balance relationships with follicular development, ovulation and fertility in postpartum dairy cows. *Livest. Prod. Sci.* **83:** 211-218 (2003).
7. Dubuc, J., Duffield, T.F., Leslie, K.E., Walton, J.S. and LeBlanc, S.J. Definitions and diagnosis of postpartum endometritis in dairy cows. *J. Dairy Sci.* **93:** 5225-5233 (2010a).
8. El-Khadrawy H.H, Ahmed W.M, Emtenan H.M. and Hanafi E.M., Observations on repeat breeding in farm animals with emphasis on its control. *J. Reprod. Fertil.* **2(1):** 01–07 (2011).
9. Esslemont, R.J., and Kossaibati, M.A. The use of databases to manage fertility. Anim. Reprod **(2000).**
10. Gautam, G., Nakao, T. Yusuf, M. and Koike, K. Prevalence of endometritis during the postpartum period and its impact on subsequent reproductive performance in two Japanese dairy herds. Anim. *Reprod. Sci.*, **116:** 175-187 (2009).
11. Getachew, E. and Moges, N. Major Reproductive Health Disorders in Cross Breed Dairy Cows in Ada'a District, East Shoa, *Ethiopia Global Veterinaria,* **13(4):** 444-449 (2014).
12. Grohn, Y,T., Eicker, S.W., Hertl. J.A. The Association between 305 day milk yield in New York State dairy cows. ADSA Supple **1:** 167 (1995).
13. Gröhn, Y.T., Erb H.N., McCulloch C.E., Saloniemi H.S. Epidemiology of reproductive disorders in dairycattle: associations among host characteristics, disease and production. *Preventive Veterinary Medicine*, **8:** 25-39 (1990).
14. Gunther, J.D. Classification and clinical management of the repeat breeding cow. *Compendium on Continuing Education for the Practicing Veterinarian* **3:** 154- 158 (1981).
15. Jainuddin, and Hafez, E.S.E., Reproductive failure in female. In: Reproduction in farm animals, 4th edition, Lea and Febiger. Philadelphia, 13-25 (1993).
16. Kaikini, A.S, Chikalikar, G.K and Dindorkar, C.V., Reproductive disorders in Holstein-Friesian x Gir F1 crossbred cows. *Indian Journal of Animal Sciences* **53:** 556-558 (1983).
17. Kakar, M.A., Rasool, G. and Ahmad, F., Clinical incidence of reproductive disorders in crossbred cows in the province of Balochistan. *Pakistan Veterinary Journal*. **17(1):** 9-12 (1997).
18. Kanuya, N.L., B.M. Kessy, S.B.P. Bittegeko, Mdoe, N.S.Y. and Aboud, A.A.O., Suboptimal reproductive performance of dairy cattle kept in smallholder herds in a rural highland area of northern Tanzania. *Preventive Veterinary Medicine.* **45:** 183-192 (2000).
19. Khair, A, Alam, M.M. Rhaheman, A.K.M.A. Islam, M.T. Azim, A. and Chowdhury, E.H., Incidence of reproductive and production diseases of

cross-bred dairy cattle in Bangladesh. *Bangl. J. Vet. Med*. **11(1):** 31-36 (2013).

20. Kumeresan, A., Pravakaran P.P., Bujarbaruah K.M., Pathak K.A., Chettri B. and Ahmed S.K., Reproductive performance of crossbred dairy cows reared under traditional low input production system in the east Himalayas. *Tropical Animal Health and Production.* **41(1):** 225-230 (2009).
21. LeBlanc, S.J., Postpartum uterine disease and dairy herd reproductive performance: A review. *Vet. J.,* **176:** 102-114 (2008).
22. Levine, H.D. The repeat breeder cow. The Bovine Practitioner **33:** 97–105 (1999).
23. Lobago F., Bekana M., Gustafasson, H. and Kindhal, H. Reproductive performance of dairy in smallholder production system in Selalle, Central Ethiopia. *Tropical Animal Health and Production*, **38:** 333-342 (2006).
24. Machado, V.S, Knauer, W. A. Bicalho, M.L.S. Oikonomou, G. Gilbert, R.O. and Bicalho, R.C. Anovel diagnostic technique to determine uterine health of Holstein cows at 35 days postpartum. *J. Dairy Sci.*, **95:** 1349-1357 (2011).
25. Maji, A.K. and Samanta, A., Analysis of incidence of infertility in cattle of howrah district in west bangal, india. Explor. Anim. Med. Res., **2:** 154-158 (2013).
26. Markusfeld, O., Periparturient Traits in Seven High Dairy Herds. Incidence Rates, association with parity, and interrelationships among traits. Journal of Dairy Science. **70:** 158-166 (1987).
27. Nanda, A.S., R.D. Sharma and M.A., Nowshehri. Outcome of various regimes of treatment of uterine torsion in buffaloes. *Indian J. Anim. Reprod.,* **12:** 197-200 (1991).
28. Narladkar, B.W., Bakshi, S.A., Pargaonkar, D.R., Dgraskar, S.U., Incidence of various reproductive disorders in Deoni cows and their crossbreds. *Liv. Adv.* **19(5):** 28–30 (1994).
29. Noakes, D.E., Parkinson, T.J. and Gary, C.W., Veterinary Reproduction and Obstetrics, Saunder Elsevier, 9th Edition, 833 (2009).
30. Pargaonkar, D.R., Bakshi, S.A., Reproductive disorders of red khandari cows and their crossbreds. *Indian J. Anim. Reprod.,* **8(1):** 18–19 (1987).
31. Plöntzke, J., Madoz, L.V., De La Sota, R.L., Drillich, M. and Heuwieser, W., Subclinical endometritis and its impact on reproductive performance in grazing dairy cattle in Argentina. *Anim Reprod Sci*, **122:** 52-57 (2010).
32. Potter, T.J., Fishwick, J., Gordon, P.J. and Sheldon, I.M., Risk factors for clinical endometritis in postpartum dairy cattle. Theriogenology **74:** 127-134 I. M.
33. Purohit, G.N. and Gaur I.M., Uterine Torsion in Buffaloes: A Critical Analysis Vol.33 metabolic disorders. *Journal of Dairy Science*. **80:** 1260-1268 (2014).
34. Singh, J., Prasad, B. and Rathore, S.S., Torsio uteri in buffaloes (Bubalus bubalis). An analysis of 65 cases. *Indian Vet. J.*, **55:** 161-165 (1978).
35. Verma, H.K., Singh, G. and Sidhu, S.S., Incidence of reproductive disorders of buffaloes in different zones of Punjab State (India). *Journal of Research, Punjab Agricultural University*. **40(1):** 79-81 (2003).
36. Verma, R.P. and Mishra, R.R., Incidence of certain reproductive disorders in different breeds of cattle. Indian Veterinary Journal. **61:** 169- 170 (1984).
37. White, J. M. and Nichols J.R., Reason for disposal of Pennsylvania Holstein Cattle. *J. Dairy Sci.,* **48:** 512 (1965).
38. Zemjanis, R. Repeat breeding or conception failure in cattle. In: Current Therapy in Theriogenology. Morrow DA (Ed.), Saunders, New York, 205–213 (1980).