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Knowledge of farmers about animal management and prevalence of reproductive disorders in cows at Babugonj Upazila under Barisal district of Bangladesh

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Abstract

The purposes of the study were to evaluate the existing cattle management system, outbreak of reproductive disorders and farmer's knowledge about cattle rearing. The data were collected from a sample of 100 farm household heads selected out of a total of 1000 farm household heads from Babugonj upazila through multi-stage random sampling technique interview with a pretested questionnaire during the period from January to April 2015. In this survey, we found that 65% farmers were using semi intensive housing system of cattle and 90% did not de-worm their cattle regularly. Only 3% farmers attended a training course related to animal rearing. None of the farmers maintained a register and calculated the feeding cost per month. About 97% farmers faced the problem of reproductive disorders. Still 77% farmers wereusing natural insemination for their cow's breeding. A total of 200 cows' history of reproductive disorder was collected. The prevalence of anoestrus, repeat breeding, metritis, poor heat detection, ovarian cyst, uterine prolapse, vaginal prolapse, retained placenta, abortion, still birth, dystocia, pyometra and laceration of vagina were 22.0% (44), 14.0% (28), 9.5% (19), 24.0% (48), 1.5% (3), 1.0% (2), 0.5% (1), 9.0% 18), 2.0% (4), 2.5% (5), 3.0% (6), 3.0% (6) and 8.0% (16), respectively. It may be concluded that the knowledge of farmer about cattle management is very poor which influenced the high prevalence of reproductive disorders. The farmers need training on hygienic management and reproduction of cows.

Introduction

The cattle population in Bangladesh is rising. Non-descript indigenous zebu cattle are the predominant population with some unplanned crossbreeding at rural areas of Bangladesh. Most of the cattle are reared under subsistence cattle rearing system. Proper management and better reproductive performance are crucial for cattle farming. It is already proved that the yearling calving is the key indicator for profitable farming (Arthur *et al.*, 1996). Therefore it is very crucial to confirm pregnancy within 85 days (85 days + 270 days pregnancy period = 365 days). Shamsuddin *et al.* (2001) stated that the lack of clear concept about the timing of insemination in estrus cattle is one of the constraints for profitable farming in aspect of Bangladesh. Arthur *et al.* (1998) identified sub-fertility as the most important limiting factor in maintaining a good productivity in a dairy farm. Reproductive diseases leading to prolonged intervals between calvings and low conception rate have been reported earlier in Bangladesh (Shamsuddin *et al.*, 1988; Alam and Ghosh, 1994; Shamsuddin *et al.*, 2001). Economy of dairy farming largely depends on pregnancy rate after insemination. The twelve-month calving interval is advantageous for maximal milk yield per cow per year with good economic return (Opsomer *et al.*, 1996; Paul *et al.*, 2011). It is accepted that bovine genital infections, either specific or non-specific in nature, account for large number of pregnancy failure in cows (Sirohi *et al.*, 1989). Shamsuddin e*t al.* (1988) studied reproductive diseases in large government dairy farm and identified retained placenta, metritis, pyometra, endometritis, cervicitis, persistent corpora lutea, cystic ovaries and nonfunctional ovaries. However, information on the feature of cattle rearing at the southern part of Bangladesh is very negligible. Therefore the aim of this study was to evaluate the existing cattle management system, outbreaks of reproductive disorders and farmer's knowledge about cattle rearing.

Materials and Methods

Study area

This study was conducted at Babugonj upazila of Barisal district in Bangladesh. Geographically, Babugonj upazila is located at 22°49′55″N & 90°19′20″E (Fig. 1).

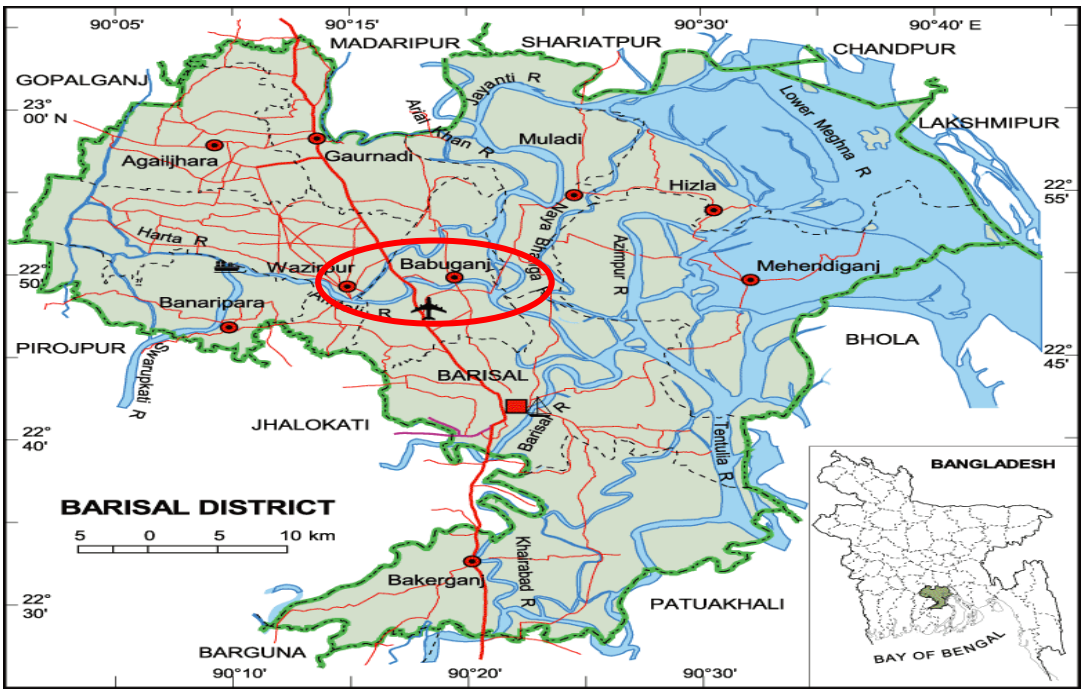

Fig. 1. The map of the study area (Modified from https:// www. google. com. bd/ search? q= barisal district map)

Study period

The data were collected during the period from January to April, 2015.

Survey design

The data were collected from a sample of 100 farm household heads selected out of a total of 1000 farm household heads from Babugonj upazila through multi-stage random sampling technique. A questionnaire was developed and pretested. The information was collected on housing system, feeding system, milking system, deworming, calf feeding system, colostrums feeding, age of first deworming, congenital abnormality, reproductive disorder, breeding system, disease outbreak and farmers' knowledge and training.

Statistical analysis

All of the data were organized and coded into the Microsoft® Excel (2010) sheet and the percentages of different parameters were calculated. The significance values of the data were analyzed by Chi-square test using SPSS® software (version 16.0).

Results and Discussion

Animal management features

The different cattle management features are presented in Table 1. In this study, we found that 65% farmers are using semi-intensive housing system. In this case, the cattle are allowed for grazing at the morning and evening for 2–3 hours and kept in cattle shed for the rest of the time. The practice of regular (at every 2–3 months interval) deworming was very low (10%). About 60% farmer fed their cattle twice a day. The 100% farmer could not use any technology for milking their cattle. They were using traditional manual milking system and keptthe calf together with the dam. Most of the farmers did not know the beneficial effect of colostrum feeding as well as the age of first de-worming.

Table 1. Animal management features in the area (household-wise; n=100)

Factors	Variables	% (number)
Housing system	Intensive	5 (5)[a]
	Semi-intensive	65 (65)[b]
	Free range	20 (20)[a]
	Others	10 (10)[a]
Regular deworming	Yes	10 (10)[a]
	No	90 (90)[b]
Feeding times per day	Once	15 (15)[a]
	Twice	60 (60)[b]
	Thrice	20 (20)[a]
	More	5 (5)[a]
Milking system	Manual	100 (100)[a]
	Machine	0 (0)[b]
Calf feeding system	Together with mother	100 (100)[a]
	Separately	0 (0)[b]
Colostrum feeding within 6 hours after calving	Yes	55 (55)
	No	45 (45)
First deworming of calf	One month of age	0 (0)[a]
	More than one month	100 (100)[b]

[a, b] within a column represent significant differences (P<0.05).

Reproductive features

The different reproductive parameters are presented in Table 2. About 97% farmers faced the problem of reproductive disorders. 77% farmers are using natural insemination for their cow's breeding. The cattle required more than two times service to conceive. The length of post-partum pregnancy period was quite long

which more than 100 days was. Most of the farmers (52%) reported the cases of calving difficulties. However, about 98% farmer did not report any congenital defect of the calves.

Table 2. Reproductive features of cattle in the area (household-wise; n=100)

Factors	Variables	% (number)
Reproductive disorder	Yes	97 (97)[a]
	No	3 (3)[b]
Breeding system	Artificial insemination	23 (23)[a]
	Natural insemination	77 (77)[b]
Post-partum estrus period	Within 30-45 days	7 (7)[a]
	46-60 days	11 (11)[a]
	>60 days	81 (81)[b]
Post-partum pregnancy period	60-80 days	6 (6)[a]
	80-100 days	10 (10)[a]
	>100 days	84 (84)[b]
Service per conception	1	12 (12)[a]
	2	13 (13)[a]
	>2	75 (75)[b]
Special management of pregnant cows	Yes	31 (31)[a]
	No	69 (69)[b]
Calving disturbances	Yes	52 (52)
	No	48 (48)
Congenital problem of calf	Yes	2 (2)[a]
	No	98 (98)[b]

[a, b] within a column represent significant differences (P<0.05).

Reproductive disorders of cattle

The reproductive disorders are the major causes of reproductive infertility in cows that affect the total annual calf crop, resulting in great economic loss in Bangladesh. In this study, a total of 200 cow's history with reproductive disorder was collected, which included anoestrus 22.0% (44), repeat breeder 14.0% (28), metritis9.5% (19), poor heat detection 24.0% (48), ovarian cyst 1.5% (3), uterine prolapsed 1.0% (2), vaginal prolapsed 0.5% (1), retain placenta 9.0% (18), abortion 2.0% (4), still birth 2.5% (5), dystocia 3.0% (6), pyometra 3.0% (6) and laceration of vagina 8.0% (16)(Figure 2). Our findings are similar to that of Maruf *et al.* (2014) who got the highest proportion of cows that suffered from anoestrus (22.2%) and the lowest proportion of cows that had laceration of vagina (0.7%). The retained placenta (19.8%), repeat breeding (16.2%), metritis (19.1%), poor heat detection (6.8%) were diagnosed as major reproductive problems at the milk pocket areas of Bangladesh. The prevalence of anoestrus was 5.1%, which was lower than that (26.5%) observed by Bitew and Prasad (2010) in South West Ethiopia. The prevalence of reproductive disorders in our findings was comparatively lower than that of the study of Mekonnin *et al.* (2015) who recorded the prevalence rates of reproductive problems asanestrus (37.8%), repeat-breeding (21.0%), dystocia (11.6%), retained fetal membranes (11.5%), endometritis (6.6%), abortion (6.4%), prolapsed uterus/vagina (2.9%), stillbirth (2.0%) and freemartin (0.2%). The higher prevalence of anoestrous may be attributed to variations predisposing factors such as nutritional status, manage mental conditions, hormonal imbalance and reproductive tract infections, for instances. The number of anoestus cattle in the studied population was high which might be due to poor nutrition, as farmers served house hold wastage, straw and some grass only as the diet.

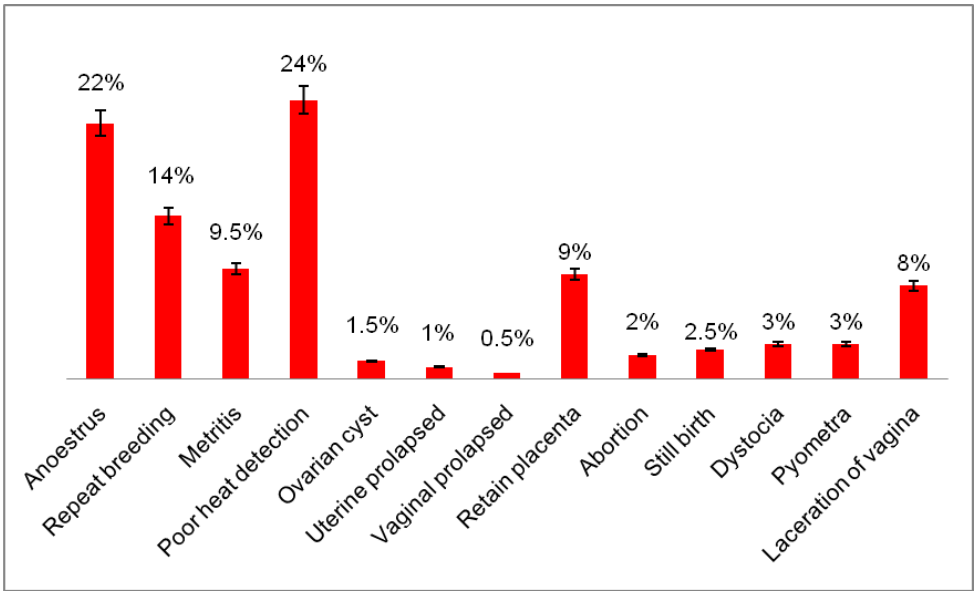

Fig. 2. Reproductive disorders in cows (n= 200)

Farmer's knowledge for animal management

In this study, we also asked the farmers (n=100) about their knowledge of animal rearing. We found that only 3% farmers attended training course related to animal rearing (Table 3). None maintained a register or calculated the feeding cost per month. As they served house hold waste to their animals, so they did not calculate the cost of feeding. However, only 2% farmer calculated the overall profit cost.

Table 3. Farmer's knowledge analysis

Indicators	Variables	% (n)
Attend training course	Yes	3 (3)[a]
	No	97 (97)[b]
Record keeping system	Yes	0 (0)[a]
	No	100 (100)[b]
Knowledge about feeding cost analysis per month	Yes	0 (0)[a]
	No	100 (100)[b]
Idea about medicinal cost per month	Yes	6 (6)[a]
	No	94 (94)[b]
Calculation of overall profit	Yes	2 (2)[a]
	No	98 (98)[b]
Knowledge about cleaning of cattle shed	Yes	13 (13)[a]
	No	87 (87)[b]

[a, b] within a column represent significant differences ($P<0.05$).

Conclusion

It may be concluded that the knowledge of farmers about cattle rearing is very poor. The reproductive capability of cows is also poor and the prevalence of reproductive disorders is high in the study area due to the poor knowledge of farmers. Therefore it is suggested that the farmers need training and continuous veterinary services for successful dairying in Bangladesh.

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