An Assessment of Welfare Evaluation of Household Dairy Cows at Sitakunda Upazila of Chattogram District

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Session: 2014-2015

A production report submitted in partial satisfaction of the requirements for the degree of

Doctor of Veterinary Medicine

Faculty of Veterinary Medicine

CHATTOGRAM VETERINARY AND ANIMAL SCIENCES UNIVERSITY

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ABSTRACT

Meeting animal welfare requirements is important for regulatory, scientific, and ethical reasons. The current assessment was conducted in 126 household cattle farms to appreciate the welfare quality of dairy cows through some regional animal welfare demonstrators. Welfare indicators selected were mainly stresses, discomfort, hygiene management, prevention and control measure against of Lumpy Skin Disease. The measurement of animal welfare was performed (871 animals) crossed breed in household cattle farms at Bhatiary and Barabkunda union of Sitakunda upazila of Chattogram district. Data were collected through a face-to-face questionnaire with farmers. This study included parameters such as floor type, installation of rubber mat on brick and concrete floor (Bhatiary farms 5%, Barabkunda farms 20%), cleanliness and sanitizer used on the floor and teats, affected cattle of LSD (Bhatiary farms 29%, Barabkunda farms 21%), treatment status of LSD, infected cattle kept in isolation (Bhatiary farms 2%, Barabkunda farms 7%), vaccination status, curtain maintain of the farm. Results of this assessment indicate welfare appreciation and compare between two unions of rural farms.

Keyword: welfare evaluation, household, rubber mat, concrete floor etc.

CHAPTER 1

INTRODUCTION

Domesticate animal's works hard to provide us with many things such as milk and milk so it is our responsibility to ensure they have a good quality of life. The concept of animal welfare is quite established in developed countries and nowadays animal-related product consumers of the developing countries are also concerned about the welfare of the animal. Thus, it is an important attribute for the "food quality concept" that becomes popular day by day in middle-income countries. Animal Welfare refers to the "state of complete mental and physical health in which an animal is in harmony with its environment," it is required not only for ethical reasons but specially to have healthier animals able to provide more wholesome food. Though the animal welfare issue is not unfamiliar to the large-scale farmers and by improving their management system small scale farmers are also trying to improve the welfare condition of household animals.

The "Fundamental freedoms of Animal Welfare "are as follows: freedom from hunger or thirst, and discomfort by providing shelter and proper bedding, prevention of pain and injury or disease by vaccination, installation of rubber floor and ensure treatment by a veterinarian, to express normal behavior, fear and distress [1]. There are lots of welfare quality protocols used for the evaluation of farm animals. Some of them are focused both on the animal, management and environmental indicators thus consuming more time and some protocols only focus on the animal indicators to evaluate the welfare. The use of animal-based indicators is gaining increased preference over resource- and management-based indicators in farm animal welfare assessment schemes. Animal-based indicators, which measure the state of the animal rather than its environment, are assumed to possess a higher validity than resource- and management-based indicators because they are more closely linked to the actual welfare state of animals [2].

On-farm assessment of animal welfare is based on the evaluation of the provision of resources and management, direct observation of the animals, and the examination of farm records. Household small dairy farms are playing a vital role in the national

economy and those are the major source of income as well as a quality food for the rural people [3]. It is important to assess the welfare of those small-scale dairy animals regularly. Because the production system is not sustainable if animals show evidence of pain, disease, or distress as a result of an inadequate system or disharmony between the animals and the system [4]. There is a limited report regarding the assessment of the welfare in those household dairy farms. Thus, the aim of this study was to evaluate different indicators of cattle welfare in household farms in Bangladesh.

CHAPTER 2

METHODOLOGY

Materials and Methods:

The study was conducted on an equal (63) number of small-scale household dairy farms in Bhatiary and Barabkunda union of Sitakunda upazila of Chattogram district. Bangladesh Milk Producers Cooperative Union Limited (BMPCUL), one of the largest and oldest dairy cooperatives in Bangladesh collects milk from those dairy farms.

Data collection and Processing:

Two villages were preferred for having the highest number of farms in small range as well as those two districts are closely situated which facilitate the comparison of welfare status among those two regions. The on-farm assessments were mainly based on long interviews that were conducted with farm family members, usually husband and wife. Face to face questions was asked to fulfil a preformed questionnaire with parameters related to welfare and direct observation of the whole farm and management system. The few questionnaires on the interviews covered data on farm characteristics such as owner name, experience of farming, number of cattle in each category (total cattle, milking cow, dry cow, heifer, calf, bull).

Then main questionnaire of welfare-related like as floor type (brick and soil/ brick/concrete), used of the rubber mad in case of concrete and brick floor (yes/no), floor cleanliness (type and schedule), used of any sanitizer during cleaning the floor (yes/no), whether teats were washed with water before and after milking (yes/ occasionally/no), whether application of antiseptic on teats before and after milking (yes/no), ectoparasitic infestation (yes/no). Then the outbreak of Lumpy Skin disease of Bangladesh in 2019 to 2020. So that the few questionnaires of semi-closed linked parameter of the welfare of LSD like as number of affected cattle, Severity of cattle (mild/severe/very severe), treatment status (Doctor/ Quack/ No), duration of illness, Infected cattle keep of isolation (yes/no).

And few questionnaires of preventive and control measures against LSD like as restricted of affected animal movement (yes/no), Vaccination (yes/no), stop sucking of the calf in affected milking cow (yes/no), covering of curtain against of mosquito (yes/no).

CHAPTER 3
RESULT AND DISCUSSION

Floor type: The observation farm floor were three category brick and soil, brick, concrete, but now a day soil type floor is very rare. Mix floor like as soil and brick of the farm. Most of the household farms used brick and concrete (Table 1).

Table 1. Percentage of floor type compare between to different district of household village farm

Floor type	Bhatiary (%)	Barabkunda (%)
1. Soil and brick	37	20
2. Brick	49	52
3. Concrete	14	28

In some farms where they had concrete or brick floor, they installed rubber mats to prevent injury of the skin, lameness, joint pain and for the comfort of the animals (Table 2).

Table 2. Percentage of rubber mat installation in concrete or brick type floor

Parameter	Bhatiary (%)	Barabkunda (%)
Installation of rubber mat of concrete and brick floor	5	20

Cleanliness and sanitizer used of floor and teats: Farmers mostly clean their farms three times a day i.e., in the early morning before feeding, midday (12:30 pm to 2 pm), late evening after milking. They mainly used, spade, broom and motor running water to clean the farm.

The system of cleaning usually depends on the floor type, e.g., the soil+ brick and brick floor were cleaned by hand, spade and broom, and the concrete floors were cleaned by the motor running water. No sanitizers were used for the cleaning of the floor in both districts.

Most of the farmers were not concerned about the cleaning of the teats before and after milking (Table3) which reduced the incidence of mastitis in dairy cows. Mastitis is one of the major problems in dairy farms and that is mainly caused by dirty udder and floor.

Table 3. Compare between to two districts of the household farm in the village whether of teats were washed with water before and after milking.

Teats were washed with water before and after milking.	Bhatiary (%)	Barabkunda (%)
1. Yes	04	20
2. Occasionally	23	49
3. No	73	39

Affected cattle of LSD: In Bhatiary 175 cattle from 51 farms were affected with LSD whereas 56 cattle from 32 farms in Barabkunda and 119 cattle from 19 farms in Bhatiary were affected respectively. (Table 4).

Table 4. Percentage of the affected farms with LSD in Bhatiary and Barabkunda

Parameter	Bhatiary (%)	Barabkunda (%)
LSD Affected farm	68	32

Treatment status of LSD: Most of the farm owners treated their diseased animals by registered veterinarians but few farmers rely on the quack for treatment (Table 5).

Table 5. Percentage of treatment status with the different personnel.

Parameter	Bhatiary (%)	Barabkunda (%)
1. Veterinarian	52	35
2. Quack	35	31
3. No	11	34

Infected cattle keep of isolation: In household dairy farms it is hard to build a separate isolation space for sick animals but it is important for the welfare of animals. There were few farms from both unions in which this was maintained (Table 6).

Table 6. Percentage of farms having isolation space

Parameter	Bhatiary (%)	Barabkunda (%)
Farm having isolation space	2	7

Curtain against flies: Mosquito-Curtain is the most important element in protecting cattle from the fly. The farmers of Barabkunda district were more concerned about the mosquito-curtain compared to Bhatiary (Table 7).

Table 7. Percentage of farm installed mosquito-cur

Parameter	Bhatiary (%)	Barabkunda (%)
Maintain curtain	5	97

The present study reveals animal welfare indicators are much better in the farms of Barabkunda district compare to the farms of the Bhatiary district. About 20 % farms of Barabkunda district installed rubber mats on concrete floor which helps to reduce the chances of injury [5] whereas 5 % of farms in Bhatiary used rubber mats in concrete type flooring. More farms follow the udder cleanliness procedure in Barabkunda compared to the Bhatiary, which is important to prevent [6]. The farms of Barabkunda maintain

better isolation space and mosquito-curtain which helps them to prevent LSD and other vector bornediseases. Whereas the percentage of LSD affected farms were high in Bhatiary due to a faulty management system.

CHAPTER 4
CONCLUSION

In this study, it is noted that most of the farmers were not aware of the welfare issue related to cattle farming. The study concluded that the most important hazards in relation to animal welfare were stress, discomfort, dirty teats with milking, no sanitizer used on the floor and did not use of antiseptic that skips of main preventive measure of mastitis. It seems that LSD was the major welfare problem within the studied parameters like less tendency of treatment status, no vaccination, less maintenance of preventive measurement. As this work was a preliminary study, that comprehensive research is needed to further develop the protocol for the different welfare conditions like housing, management system and prevention and control measures of other diseases.

CHAPTER 5
REFERENCES

David J. Mellor. Updating Animal Welfare Thinking: Moving beyond the “Five Freedom” towards “A Life Worth Living”. Animals 2016,6,21

Webster AJF, Main DCJ and Whay HR. Welfare assessment: indices from clinical observation. *Animal Welfare*, 2004 *13(S)*: S93-S98

Whay, H.; Main, D.; Green, L.; Webster, A. Assessment of the welfare of dairy cattle using animal-based measurements: Direct observations and investigation of farm records. *Vet. Rec.* 2003, *153*, 197–202.

Blowey, R.; Peter, E. *Mastitis Control in Dairy Herds*, 2nd ed.; CABI: Wallingford, Oxon, UK, 2010; pp. 272.

Livesey, C.T., Marsh, C., Metcalf, J.A. and Laven, R.A. Hock injuries in cattle kept in straw yards or cubicles with rubber mats or mattresses. *Veterinary Record*,., 2002 *150*(22), pp.677-67

De Pinho Manzi, M., Nóbrega, D.B., Faccioli, P.Y., Troncarelli, M.Z., Menozzi, B.D. and Langoni, H. Relationship between teat-end condition, udder cleanliness and bovine subclinical mastitis. *Research in Veterinary Science*,., 2012, *93*(1), pp.430-434.

CHAPTER 6
ACKNOWLEDGEMENTS

The author wishes to acknowledge the immeasurable grace and profound kindness of Almighty Allah (SWT), the supreme authority and ruler of the universe, who empowered the author to complete the production of the report successfully.

The author gratefully expresses first and foremost his heartiest appreciation, deepest sense of gratitude and best regards to Dr. Gous Miah, Professor, Department of Genetics and Animal Breeding, Chattogram Veterinary and Animal Sciences University, for her advice, constant valuable suggestions and instructions.

The author wishes to give special thanks to Professor Dr. Mohammad Alamgir Hossain, Dean, Faculty Veterinary Medicine and Prof. Dr. A.K.M. Saifuddin, Director of External Affairs.

The author also expresses her thankfulness to other teachers, seniors of Masters and well-wishers for their co-operation and instructive suggestions.

Last but not the least, the author is profoundly grateful to her parents for their endless sympathies, support, sacrifices and prayers.

The author,

November 2021