A MULTIDIMENSIONAL GAP ANALYSIS IN BUFFALO HUSBANDRY PRACTICES IN COIMBATORE DISTRICT OF TAMIL NADU

Dr. N. Vimal Rajkumar[1], N.V. Kavithaa[2] and Dr. P. Mathialagan[3]

[1]Assistant Professor, Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai, Tamil Nadu

[2]Assistant Professor, Department of Livestock Production Management, VC&RI, Namakkal

[3]Professor and Head, Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai, Tamil Nadu

Abstract: A Multidimensional analysis was pursued to uncover the gap between the practices followed by the buffalo farmers in field situation and the one recommended by the scientific system. Purposive sampling method was employed to select the blocks *viz.,* Karamadi and Anamalai from Coimbatore district of Tamil Nadu on the basis of number of farmers who are in the bank's of the rivers Bhavani and Aliyar and are having buffalo farming as a livestock enterprise along with agriculture. From these two selected blocks, eight villages were randomly selected for the study. From each village, twenty five farmers, thus to arrive a total sample size of 200 were selected randomly. A well constructed interview schedule was exercised to collect the needed data. Gap analysis was conducted to find out the difference in the recommended practices in housing, feeding, breeding, calf management, general management, clean milk production and disease management and those actually practiced by the buffalo keepers. This was measured by means of an adoption quotient and on the basis of adoption quotient the farmers are classified into four categories. The findings of the study revealed that almost all the respondents (94.00 per cent) adopted the scientific recommendation of having a viable unit size of two to three buffalos. Regarding housing of buffalos, more than half of the respondents (60.50 per cent) were not adopted the practices and 23.00 per cent of the respondents belonged to low adopter category. With respect to the scientific feeding, 74.00 per cent were not following calf feeding practices, 82.00 per cent were not following heifer feeding recommendations, 33.50 per cent of the respondents following the pregnant animal feeding to some extent and 29.00 per cent belonged to medium level of adoption. In case of lactating animal feeding, 47.00 per cent of the respondents followed most of the recommendations and belonged to high adopter category followed by medium category (18.50 per cent). Regarding breeding strategies, 43.50 per cent of the respondents were not followed any scientific recommendations and belonged to non adopter category followed by low adopters (31.50 per cent) and medium (19.50 per cent) level adopters. More than half of the respondents (66.00 per cent) were followed few recommendations on general management. In case of clean milk production, 71.50 per cent of the respondents did not follow any scientific practices and they were considered as non adopters. Regarding the health care practices, about 49.00 per cent of the respondents belonged to medium adopter category followed by low category (37.00 per cent). The present study concludes that buffalo farmers must be motivated to adopt scientific buffalo husbandry practices especially in feeding and breeding regime so as to make the buffalo farming a lucrative one.

Keywords: Adoption quotient, buffalo farming, Gap analysis.

INTRODUCTION

*A*nimal husbandry occupies an important place in India's agrarian economy as the share of dairying in the total farm income is on the increasing trends year after year. India is endowed with largest livestock population in the world and buffalo population is 94.13 million which is approximately 56.6 per cent of the total world population. Buffalo contribute more than one-third of the total milk production in Asia and the second largest producer of milk in the world. India ranks first in the world, producing 65 per cent of the world's buffalo milk. India is one of the few countries in the world where buffaloes are found in domesticated form in large numbers. Buffaloes have been playing a key role since time immemorial in our country's economy. Buffaloes are valuable for the triple purpose of milk, work, and meat. In India, the bulk of milk produced comes from the buffaloes.

In India, a greater part of milk production comes from buffaloes. Buffalo milk is better in quality as compared to any other domestic animal. Buffalo rearing is considered to be economically profitable as compared to other domestic animals.

Strengthening the buffalo farming is one of the main agenda of the government sector both at national and state level. Many efforts had been made to improvise the buffalo faming through various central and state governments assisted schemes. Despite of all the efforts the buffalo population is having a downward curve which is a subject of concern. Managemental practices in buffalo farming *viz.,* housing, feeding, breeding, disease control and prevention, calf management, marketing etc., are distinctly differ from that of cattle management. But in many occasions the extension agencies involving in technology transfer in dairy sector are not considering this aspect conduct training to the farmers as dairy farming in general without any special emphasis to the buffalo farmers.

Based on this conjecture, the present study is designed with an objective to uncover the gap between the practices followed by the buffalo farmers in field situation and the one recommended by the scientific system.

MATERIALS AND METHODS

Purposive sampling technique was used to selecting Karamadi and Anamalai blocks of Coimbatore District on the basis of considerable number of farmers who are in the banks of these two blocks are having buffalo farming as a livestock along with agriculture. From the selected blocks, Periya Thottipalayam, China Thottipalayam, Therampalayam and Bellathi villages from Karamadai taluk, Somandurai Chitoor, Thensangam palayam, Anamalai and Kottur villages from Anamalai taluk were randomly selected for the study.

From each village, twenty five farmers were selected randomly for the study to arrive a total sample size of 200. A semi - structured interview schedule was used to collect the data. In order to identify the gap between the recommended practices and followed practices which are really practiced in field, it was decided to find out adoption quotient of the buffalo farmers.

The term adoption in this study means the use of recommended practices by the respondents. In consultation with the package of practices and Subject Matter Specialists fifteen skill oriented technologies/practices in buffalo farming recommended through the programme were identified for study of adoption. The recommended practices in housing, feeding, breeding, calf management, general management, clean milk production and disease management were described to respondents and they were requested to indicate their extent of adoption either as per the recommendation or less than that or in a three point continuum viz., always, sometimes. The respondents who had adopted the recommended practice were given one score and for those not adopted were given zero score. The extent of adoption of recommended practices for each respondent farmer was measured by using an adoption quotient developed by Sengupta (1967) and adopted by Swaminathan (1986). Adoption quotient for an individual farmer was computed from the adoption scores gained by the farmer for the adoption of improved recommended practices.

$$\text{Adoption quotient} = \frac{\text{Total score obtained by farmer}}{\text{Maximum possible score}} \times 100$$

On the basis of adoption quotient the farmers are classified into four categories as per Sengupta (1967).

        1. High adopters (66.67 to 100)

        2. Medium adopters (33.34 to 66.66)

        3. Low adopters (0 to 33.33)

        4. Non-adopters (0)

RESULTS AND DISCUSSIONS

Gap analysis based on adoption quotient of the respondents

Table 1. Gap analysis based on adoption quotient of the respondents

S.No.	Recommended practices	Frequency	Percent
I	Viable unit size		

1	High adopters (66.67 to 100)	188	94.00
2	Medium adopters (33.34 to 66.66)	8	4.00
3	Low adopters (0 to 33.33)	4	2.00
4	Non-adopters (0)	0	0.00
II	**Housing**		
1	High adopters (66.67 to 100)	8	4.00
2	Medium adopters (33.34 to 66.66)	25	12.50
3	Low adopters (0 to 33.33)	46	23.00
4	Non-adopters (0)	121	60.50
III	**Feeding**		
A	**Calf feeding**		
1	High adopters (66.67 to 100)	0	0.00
2	Medium adopters (33.34 to 66.66)	11	5.50
3	Low adopters (0 to 33.33)	51	25.50
4	Non-adopters (0)	148	74.00
B	**Heifer**		
1	High adopters (66.67 to 100)	0	0.00
2	Medium adopters (33.34 to 66.66)	3	1.50
3	Low adopters (0 to 33.33)	33	16.50
4	Non-adopters (0)	164	82.00
C	**Pregnant buffalo**		
1	High adopters (66.67 to 100)	18	9.00
2	Medium adopters (33.34 to 66.66)	58	29.00
3	Low adopters (0 to 33.33)	67	33.50
4	Non-adopters (0)	57	28.50
D	**Lactating buffalo**		
1	High adopters (66.67 to 100)	94	47.00
2	Medium adopters (33.34 to 66.66)	37	18.50
3	Low adopters (0 to 33.33)	28	14.00
4	Non-adopters (0)	41	20.50
E	**Dry animal**		
1	High adopters (66.67 to 100)	8	4.00

2	Medium adopters (33.34 to 66.66)	16	8.00
3	Low adopters (0 to 33.33)	34	17.00
4	Non-adopters (0)	142	71.00
IV	**Breeding**		
1	High adopters (66.67 to 100)	11	5.50
2	Medium adopters (33.34 to 66.66)	39	19.50
3	Low adopters (0 to 33.33)	63	31.50
4	Non-adopters (0)	87	43.50
V	**General Management**		
1	High adopters (66.67 to 100)	10	5.00
2	Medium adopters (33.34 to 66.66)	46	23.00
3	Low adopters (0 to 33.33)	132	66.00
4	Non-adopters (0)	12	6.00
VI	**Clean Milk production**		
1	High adopters (66.67 to 100)	4	2.00
2	Medium adopters (33.34 to 66.66)	18	9.00
3	Low adopters (0 to 33.33)	35	17.50
4	Non-adopters (0)	143	71.50
VII	**Health care**		
1	High adopters (66.67 to 100)	18	9.00
2	Medium adopters (33.34 to 66.66)	98	49.00
3	Low adopters (0 to 33.33)	74	37.00
4	Non-adopters (0)	10	5.00

It could be observed from the Table 1, that, almost all the respondents (94.00 per cent) adopted the scientific recommendation of having a viable unit size of two to three buffalos. Regarding the recommendations for housing of buffalos, more than half of the respondents (60.50 per cent) not adopted the practices and 23.00 per cent of the respondents belonged to low adopter category. With respect to the scientific feeding regime, 74.00 per cent not followed the calf feeding practices, 82.00 per cent were not followed heifer feeding recommendations. In case of pregnant animal feeding, 33.50 per cent of the respondents followed to some extent and belonged to low level and 29.00 per cent belonged to medium

level of adoption. In case of lactating animal feeding, 47.00 per cent of the respondents followed most of the recommendations and belonged to high adopter category followed by medium category (18.50 per cent).

The findings are in line with Gour and Patel (2003), Agarwal *et al*. (2007), Basunathe *et al*.(2010), Murai and singh (2011) and Longote S R, (2009).

Regarding breeding strategies, 43.50 per cent of the respondents were not followed any scientific recommendations and belonged to non adopter category followed by low adopters (31.50 per cent) and medium (19.50 per cent) level adopters.

Further it could also be observed that more than half of the respondents (66.00 per cent) were followed few recommendations on general management and were in low adopter category followed by medium (23.00 per cent). In case of clean milk production, 71.50 per cent of the respondents not followed any scientific practices and they were considered as non adopters. Regarding the health care practices, about 49.00 per cent of the respondents belonged to medium adopter category followed by low category (37.00 per cent).

The findings are in line with Kumar *et al.* (2012), Perane and harde (2014) and Ambulakar and Dixit (2014).

CONCLUSION

Based on the enquiry made with the respondents about the reasons for nonadoption or partial adoption of the recommended dairy management practices and analysis of the data, this study concluded that, if the facility of artificial insemination is made available at door step, then the problems in breeding viz., non-availability of semen doses for A.I. and non-availability of breeding bull shall be overcome. In respect of feeding practices, the study has concluded that special efforts by Govt. and bank should be taken to provide irrigation facilities for dairy farmers during summer or dry spell to produce more green fodders. Also, it is observed that the rates of concentrate mixture have increased and respondents are not getting proportionately higher rates for the milk sold, as a result, the respondents have to bear increased cost of concentrate mixture, which is necessary feed to milking animals. Therefore, milk collection centers ought to make the needed quality of concentrates available at reasonable cost to dairy farmers. For overcoming the problems in respect of management practices special extension educational efforts are necessary. In respect of "health care" practices of dairy animals it can be said that medicines should be available at reasonable rates. Also, it is necessary to provide information on general health-care practices of animals and vaccination camps should be arranged in village at proper time.

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