

Journal homepage: http://www.journalijar.com

INTERNATIONAL

OF ADVANCED RESEARCH

RESEARCH ARTICLE

ADOPTION OF SCIENTIFIC FEEDING PRACTICES BY BUFFALO DAIRY ENTREPRENEURS IN PERI-URBAN AREA

Sangram Chavan¹, D.S.Deshmukh², Manish Sawant², G.R.Gangane³.

- 1. Animal Museum Manger, Bombay Veterinary College, Parel, Mumbai, 400012.
- 2. Department of Extension Education, COVAS, Parbhani.
- 3. Associate Professor ,Dept.of Pathology,COVAS,Parbhani.

Manuscript Info

Manuscript History:

Abstract

Received: 18 December 2015 Final Accepted: 22 January 2016 Published Online: February 2016

.....

Key words: Adoption, dairy entrepreneurs, scientific feeding practices, milk production.

*Corresponding Author

Sangram Chavan.

The productive performance of buffalo heavily depends on scientific feeding practices which has direct impact on income generation. Hence the present study was conducted to assess theadoption level of scientific feeding practices during March to April 2015 in peri-urban areas of three districts of Marathwada region of Maharashtra by selecting 150 buffalo dairy entrepreneurs. The present study revealed that majority of respondents had medium adoption level of different component of scientific feeding practices viz. balanced diet 98.00%, use of mineral, vitamin mixture for high milk production 98.00%, calf feeding management 64.67%, recommended feeding for breeding 62.67%, use of different feed ingredient in animal diet 62.67%, fodder production of high yielding variety 50.67% while low level in fodder treatment 96.67% and use of green fodder 45.33%. Higher extent of adoption was observed in use of balance diet practices while lower extent of ado ption was in fodder treatment area. The overall adoption levels of the respondents in scientific buffalo feeding practices fall under low, medium and high categories are 28.67 %, 64.00% and 07.33% respectively. The adoption index of different scientific feeding practices like use of different feed ingredients in animal diet, balanced diet, green fodder, high vielding fodder variety production, fodder treatment, calf feeding management, recommended feeding for breeding, use of mineral, vitamin mixture (for high milk production) were 41.23%, 64.00%, 64.37%, 50.00%, 6.08%, 41.20%, 18.20%, 17.22%, respectively and overall adoption index was 40.54 % which indicated medium adoption level in the study area expecting the need to educate the dairy entrepreneurs on different scientific feeding practices.

.....

Copy Right, IJAR, 2016,. All rights reserved.

Introduction:-

Adoption is "a decision to make use of new ideas or practices". In this study, it refers to the degree of actual use of recommended scientific buffalo feeding practices. The best option to increase livestock productivity is through adoption of improved technologies and efficient use of available resources (Bhende and Kalirajan, 2007). Research evidences revealed that the dairy farmers are not keeping pace with the constantly changing new improved husbandry practices. Implementation of any innovative scientific technology in practical field in all aspects depends on the adoption behaviour of an individual who wants to implement it. As per the Rogers observations, any adopter accepts technology when it fulfils the requirement of situation.

In India as well as in many developing countries, the livestock sector and dairy industry has important role in the national economy and socioeconomic development of the country. It helps in supplementing family incomes and

generating gainful employment as well as in ameliorating plight of the poor farming communities in the rural as well as in peri-urban area. India has the largest livestock population in the world which is more than 512.05 million and buffalo contributes 21.23 per cent of the total (19th Livestock Census-2012). India is the world's largest milk producer, with 16 per cent of global production; Milk production is growing at a much faster pace compared to many other agricultural commodities and is being increasingly viewed as a source of food and an effective instrument for improving livelihood. The per capita availability of milk in India is 290 grams per day, which is slightly more than the world average which is around 285 grams per day. (Source: Basic Animal Husbandry Statistics, Ministry of Agriculture, Government of India)

In today's world, due to population explosion and urbanization, rural youth getting migrates to urban area for employment. It results in increase in the size of urban area and high demand of agriculture and livestock product like milk, egg, meat etc. The challenge represented by the expanding demand for milk and dairy products in urban is great, and the resultant opportunities for smallholders are large. For converting this opportunity in income generation, entrepreneurs, school dropouts and unemployed youths have started buffalo dairy farming in peri-urban area. Though increasing milk production is a combination of improving genetic potential, good management, however, the feed cost constitutes the major day-to-day expense. A dairy entrepreneur always expects productive and reproductive performance of animals at optimum level for enhancing cost benefit ratio. This could be achieved by adoption of scientific feeding practices which helps to minimise the cost of production and also to increase milk production. Dairy entrepreneurs have taken up this challenge but are hurdled by the lack of technical information on managing their animals. In view of fulfilling the demandof dairy entrepreneurs, ICAR institutions, Agricultural Universities, dairy cooperative unions; Veterinary Universities are providing innovative feeding techniques through extension network. By making all kind of efforts; unfortunately the rate of adoption is very poor because of technological gap. Therefore, keeping in view of the above situation, an effort was made with the objective of ascertaining the adoption level of Buffalo Dairy Entrepreneurs regarding scientific buffalo feeding practices.

Methodology:-

The present study was conducted in Beed, Latur and Parbhani district of Maharashtra state during March to April 2015. Three districts were selected randomly from Marathwada region and from each selected district 50 respondents were selected purposively from peri-urban area (15 km away from city). Thus, samples total 150 respondents were selected for the study. Dairy entrepreneurs rearing minimum 03 buffaloes from last three years were considered for the study. An interview schedule based on the objectives of study was prepared for data collection. Questions on adoption of different scientific feeding practices were included in the schedule. For measuring adoption of the respondent eight feeding practices including 56 items were used. The response was obtained on 2 point continuum viz. know, and don't know. One score was given to known answer, zero score for don't know. To measure the adoption level of farmers their responses were recorded. Data were tabulated and the total score obtained by individual respondent for all the statements was calculated and analysed. With the help of mean and standard deviation the respondents were categorized as low, medium and high with respect to their adoption level. Adoption index was determined by using formula given below:

Adoption index = Actual score obtained Maximum score obtainable

Results and discussion:-

Adoption level of Dairy Husbandry Practices:-

Adoption level of the respondents was assessed under different aspects of buffalo feeding practices and further categorized into low, medium and high level for individual feeding practice like use of feed ingredient in animal diet, balanced diet, green fodder, fodder production of high yielding variety, fodder treatment, calf feeding management, special feeding for breeding, use of mineral, vitamin mixtures for high milk production.

Category	Frequency	Percentage
Use of feed ingredient in animal diet		
Low(<2.074)	31	20.67
Medium(2.074-7.82)	94	62.67
High(>7.82)	25	16.67
Balanced diet		
Low(< 3.44)	03	02.00
Medium(3.44-11.93)	147	98.00
High(> 11.93)	00	00.00
Use of green fodder		
Low(<3.799)	68	45.33
Medium(3.799-5.213)	39	26.00
High(> 5.213)	43	28.67
Fodder production of high yielding variety		
Low(< 0.793)	61	40.67
Medium(0.793-2.207)	76	50.67
High(>2.207)	13	08.66
Fodder treatment/processing		
Low(< 2.402)	145	96.67
Medium(2.402-3.254)	02	1.333
High(>3.254)	03	02.00
Calf feeding management		
Low(< 0.646)	40	26.67
Medium(0.646 - 2.706)	97	64.67
High(> 2.706)	13	8.667
Recommended feeding for breeding		
Low(< 0.005)	148	20.67
Medium(0.005 -1.097)	01	62.67
High(>1.097)	01	16.67
Feeding vitamin and mineral mixture for high milk production		
Low(< 0.381)	137	02.00
Medium(0.381-2.447)	10	98.00
High(>2.447)	03	00.00

Table 1. Distribution of the buffalo dairy entrepreneurs on the basis of overall adoption regarding scientific
feeding practices(n=150)

Use of different feed ingredient in animal diet:

Data presented in Table 1 indicated that 62.67 per cent of the respondents had medium adoption level followed by 16.67 per cent having high and 20.67 per cent having low adoption level regarding use of different feed ingredient in animal diet. It might be due to the availability of different commercial feeds ingredients and other inputs from urban market. Most of the respondent followed an approved practice of judicious combination of concentrates and chaffed green and dry fodder, resulting in balance in nutrition. This indicated that the respondents are calculative while adopting this aspect. The findings are in conformity with the findings reported by of R Sathiadhas (2003) and AsamSaid (2004).

Balanced diet:- A perusal of the data in Table 1 revealed that most of the respondents had medium (98.00) followed by low adoption level (02.00). The intensive adoption of use of balanced diet could be a reflection of the general trend of rural area. This also indicated that majority of respondents were having basic knowledge of feeding balance ration to their buffaloes. The present findings arein accordance with the results of R Sathiadhas (2003).

Use of green fodder:- Table 1 shows that 26.00% of the respondents had medium adoption level followed by low (45.33%) and high adoption level (28.67%) in use of green fodder. The main reason attributable for the low level of adoption might be due to a poor monsoon and acute shortage of water and fodder scarcity conditions in Marathwada region. The present findings are in close approximation with results of R.Sathiadhas (2003).

Fodder cultivation technology:- It could be noted from Table 1 that 50.67%, 40.67%, 8.66% of the respondents had medium, low and high adoption level in fodder production respectively. This indicates that there is scope for improving nutrition by cultivation of high yielding fodder variety.

Fodder treatment/processing:- Data presented in Table 1 indicated that 96.67 per cent of the respondents had low adoption followed by high (2.00%) and medium adoption level (1.33%) in fodder treatment. Lack of labour availability, training and time to spare might have attributed to low adoption level. This implies that buffalo owners don't know the importance of fodder treatment. This misconception among farmers may be removed by the field Veterinarians and other extension agencies by organizing farmers training and awareness camps as guided in study of FAO (2011).

Calf feeding management:- A perusal of the data in Table 1 revealed that majority of the respondents had medium (64.67), low (26.67) and high adoption level (8.66) in calf feeding management. This may be because of long-term benefits of calf rearing which are their net income source assets. The majority of farmers follow feeding of colostrum to newly born, but don't know the significance of timely feeding of colostrum. The present finding goeswell with the results of R.Sathiadhas (2003).

Recommended feeding for breeding: Table 1 shows that majority (51.33%) of the respondents had medium adoption level followed by low (48.00 %) and high adoption level (0.66%) in recommended feeding for breeding. During the data collection it was observed that respondents concentrate their mind on feeding of advanced pregnant and parturated animals only. The present findings are in accordance with results of Meena*et. al* (2009).

Feeding for high milk production (use of mineral, vitamin):-

Data presented in Table 1 revealed that majority (62.67%) of the respondents had medium adoption followed low adoption (20.67%) and high knowledge (16.67%) in use of mineral ,vitamin for high milk production. In the studied area, it was surprised that not a single farmer was adopting practice of feeding of bypass protein, bypass fat, live yeast culture as they were using mostly mineral and vitamin mixture.

 Table 2. Distribution of the buffalo dairy entrepreneurs on the basis of overall adoption regarding scientific feeding practices
 (n=150)

Categories	Frequency	Percentage
Low (< 0.950)	43	28.67
Medium (0.950 - 2.995)	96	64.00
High (> 2.995)	11	07.33

Overall adoption level:- Overall adoption level of the respondents in scientific feeding practices is depicted in Table 2. On an average 64.00 per cent respondent had medium level and 28.67 and 7.33 per cent respondents had low and high level of adoption respectively. It can be observed that majority of the respondents had medium knowledge level regarding scientific buffalo feeding practices. The medium adoption level might be attributed to their exposure to information sources, contact with extension personnel and proper and adequate technical guidance provided by the agencies working for transfer of technology in the study area. Present results are similar to the findings reported by Satyavir Singh (2010). It could be interpreted from these figures that there was a scope to convert the respondents from medium adoption category to high score category.

Category	Adoption index	Rank
	%	
Use of feed ingredient in animal diet	41.23	IV
Balanced diet	64.00	II
Use of green fodder	64.37	Ι
Fodder production	50.00	III
Fodder treatment	06.08	VIII
Calf feeding management	41.20	V
Recommended feeding for breeding	18.20	VI
Use of mineral, vitamin mixture	17.22	VII
Overall adoption	40.54	

 Table 3.Adoption indices of scientific buffalo feeding practices

Adoption index:- Data in Table 3 revealed that the adoption index of different aspects of scientific buffalo feeding practices. The maximum extent of adoption was found in the area of use of green fodder (64.37%) followed by balanced diet (64.00%), fodder production (50.00%) use of feed ingredient in animal diet (41.23%), calf feeding management (41.20%), use of mineral, vitamin mixture for high milk production (18.11%), special feeding for breeding (17.22%) and fodder treatment (10.00%). Overall adoption level in scientific buffalo feeding practices was 40.54%. These findings corroborates with findings of B.S.Meena (2014) and RizwanJeelani (2015) who observed an average 49.76% and 32.85% adoption in feeding aspect respectively.



Fig.1: Adoption indices of scientific buffalo feeding practices

Conclusion and implication:-

Based on the various findings of this investigation, it was concluded thatthe overall adoption of scientific buffalo feeding practices was found to be only 50.44%. To increase the rate of adoption, there is a need to intensify extension efforts by educating the dairy entrepreneurs on different aspects of scientific feeding practices through organizing demonstrations, exposure visits etc. by various government organizations or NGOs. To enable the farmers to adopt scientific feeding practices, it is worth to trainee the dairy entrepreneurs in making low cost balanced ration by using locally available feed ingredients and to disseminate innovative fodder treatment and green fodder cultivation techniques throughout the year by conducting frontline demonstration and on-farm trials to the entrepreneurs.

References:-

- Asam Said Ahmed Hassan Shahin (2004) Adoption of Innovations in Smallholder Buffalo Dairy Farms in the Menoufia Province in Egypt 2004 / 200 S. / EUR 29, 80 ISBN 3-89574-526-X.
- FAO. (2012) Balanced feeding for improving livestock productivity Increase in milk production and nutrient use efficiency and decrease in methane emission, by M.R. Garg. FAO Animal Production and Health Paper No. 173. Rome, Italy.
- 3. MA Quddus (2012) Adoption of dairy farming technologies by small farm holders: practices and constraints Bang. J. Anim. Sci. **41** (2): 124-135
- 4. B.S.Meena, SadhnaPandey, Purushottam Sharma and D.K.Meena (2014) Farmers' knowledge and adoption of scientific feeding practices of dairy animals in Jhansi district Journal of Progressive Agriculture.**5(1):** 102-104.
- 5. RizwanJeelani (2015), Research Article: Adoption of improved animal husbandry practices by Gujjars of Jammu and Kashmir, Indian J. Dairy Sci. **68(3):**287-292.
- 6. Satyavir Singh, Ram Kumar and B.S. Meena (2010) Adoption Level of Scientific Dairy Farming Practices by Dairy Farmers of Haryana Indian Res. J. Ext. Edu. **10** (3): 45-48.
- R Sathiadhas (2003) Adoption Level Of Scientific Dairy Farming Practices By IVLP Farmers In The Coastal Agro Ecosystem Of Kerala, Indian Journal of Social Research.44 (3):243-250.