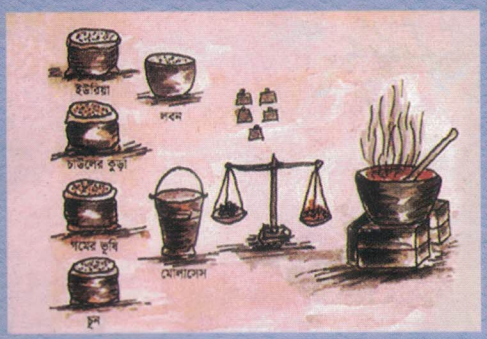
Adoption of Improved Feeding Technology to Promote Dairy Cattle Production at Village Level in Bangladesh



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Executive Summary

Bangladesh is a tropical country and animal husbandry methods are very traditional and poor here. Low productivity of the breeds of cattle is an important constraint to future dairy cattle development. Therefore, suitable breeds of dairy cattle have to be developed in the country through crossbreeding and upgrading. Moreover, research works should be conducted on adoption process of improved feeding technology as well as improved management practices of dairy cattle. Shortage of cattle feed is a serious problem for dairy production in Bangladesh. Therefore, adoption of improved feeding technology is likely to decrease susceptibility of dairy cattle to diseases and mortality. In the context of extensive food crop production, thrust is to be given on the identification of non-traditional fodder crops and better utilization of crop residues by adopting modern feeding technologies such as Urea treated Straw (UTS), Urea Molasses Straw (UMS), Urea Molasses Block (UMB), etc. With this view in mind, the study was conducted to gather effective information on the use of Improved Feeding Technology (IFT) of dairy cattle to promote dairy production in Bangladesh.

For this study a complete list of registered dairy farms (201 registered dairy farms in Bogra) was collected from District Livestock Office, Bogra. From the list, four upazilas of Bogra district (Bogra sadar, Gabtoli, Sherpur and Dhunot) were randomly selected considering higher concentration of registered dairy farms.

Thus, 60 farm owners were selected, taking 15 from each of the upazilas on random basis. The social and economic status of the farmers is the main determining factor for rearing livestock in the country. The farm size, family size, literacy rate, etc. are closely linked with livestock raising. So, it is imperative to properly analyse such socio-economic factors for the improvement of livestock.

Educational level of the respondents was encouraging in comparison with the national literacy rate. Forty seven percent of them had secondary level of education and onwards, 23% high school level, 25% primary level and 5% had no educational background at all.

Out of 60 farm households in the four upazilas, 29 were small, 21 were medium and 10 were large farm households. Agriculture was the principal occupation of 52% of the respondents. Apart from this, 28% had business as the principal occupation whereas only 10% of the respondents had dairy farming as their principal occupation.

The lowest and highest ranges of annual income of the dairy farm owners were Tk. 20,001 to Tk. 1,00,000 and Tk. 1,00,001 to above. It was satisfactory that 75% of the respondent farmers had their annual income in the range Tk. 1,00,001 to above.

The total number of cattle owned by the 60 respondent households in the study area was 514. Out of them, 140 (27.24%) were milch cows, 95 (18.48%) were dry cows, 28 (5.45%) were bullocks, 34 (6.61%) were oxen, 77 (14.99%) were heifers, 54 (10.50%) were male calves and 86 (16.73%) were female calves.

The ratio between adult and young stock was 5:4. Besides, the average numbers of cattle and milch cows per farm were 8.56 and 2.33 respectively.

Among the total number of cows, the number of milch cows was 140 (59.57%) and the remaining 95(40.43%) were dry cows. The ratio between milch and dry cows was 3:2. Out of 140 milch cows, 33 (23.57%) were local and 107 (76.43%) were crossbred. The ratio between local and cross-bred cows was 1:3.

During one year (1999), the total production of milk from 140 milch cows was found to be 2,38,042 litres. The average production was 1,753 litres of milk per cow per year and 5.79 litres per cow per day. Small farmers produced less quantity of milk from more cows whereas large farmers produced more milk from fewer number of cows. It was also found that average milk productions per cow per day from local and cross-bred cows were 3.21 litres and 6.56 litres respectively.

It has already been mentioned that total production of milk from 140 milch cows in the study area was 2,38,042 litres. Out of this milk, 11.70% (27,863 litres) was consumed by the producers themselves and the remaining 88.30% (2,10,179 litres) was sold out. Out of this sold milk (2,10,179 litres), the highest quantity of milk i.e., 71% (1,49,227 litres) was sold to the middlemen (Goalas), 23% (48.341 litres) at the local market and only 6% (12,611 litres) among the neighbours of the milk producers.

Preventive measures taken by the farmers were inadequate. Out of 60 respondents, 36 (60%) used vaccines as preventive for their

cattle and the rest did not use any preventive for their cattle because of lack of knowledge and awareness.

Regarding cattle feed, none of the farmers in the study area was found to use balanced ration for their milch cows. Their cows were dependent mostly on rice straw and rice bran. Out of 60 respondents only 6 (10%) were found to use Urea Molasses Straw (UMS) and 2 (3.33%) used urea treated straw as protein supplement food for their cattle. Among the users of improved feeding technology, 75% of the farmers were found to use Urea Molasses Straw (UMS) and the remaining 25% used Urea Treated Straw (UTS). None of the farmers in the study area was found to use Urea Molasses Block (UMB) as feed for their cattle. Among the non-adopters, 87% of the respondents told that they did not know the technology, 40% did not feel it necessary, 20% thought that cattle might die if they would use IFT and only 14.55% did not use the technologies due to shortage of money. However, average adoption rate of IFT was only 13.67% in the study area.

Now-a-days dairy farming has emerged as an important supplementary occupation for the farming community, especially in the rural areas. During the study, an attempt was made to determine the profitability of raising dairy cows. The total returns for the small, the medium and the large farmers, per cow per lactation were Tk. 15,658, Tk. 17,748 and Tk. 23,874 and their respective total costs per lactation were found to be Tk. 12,631, Tk. 14,843 and Tk. 21,635. Thus, the gross profit margins for rearing a milch cow per year were Tk. 3,027, Tk. 2,905 and Tk. 2,239 for the small, the medium and the large

farmers respectively. The gross return per milch cow in the study area was positive for all categories of farmers. Although, the farmers maintained their cows to employ their unemployed family members, the opportunity cost of such employment was not considered.

The average cost of per litre milk production was Tk. 10.32 and the average price of per litre milk obtained by the producer was Tk. 14.50 (i.e. gross profit for per litre milk was Tk. 4.18). The average milk yield per day was found to be 3.21 litres from local cows and 6.56 litres from crossbred cows. On an average, net profit per cow per year was Tk. 3,706 and average number of milch cows was 2.33 per farm. Therefore, net profit per farm per year stood at Tk. 8,635 only.

The lowest and the highest purchasing prices of milk in the Summer, the Rains, the Winter and during Ramadan month were Tk. 10 to 12, Tk. 10 to 12, Tk. 12 to 13 and Tk. 13 to 18 respectively. The middlemen sold this milk always at a profit margin of not less than Tk. 2 per litre.

The dairy farmers in the study area were facing some major problems for rearing their milch cows. Lack of credit, lack of IFT, shortage of feed and fodder's and their high prices, narrow scope for artificial insemination, inadequate supply of vaccines and medicines, inadequate veterinary support services and, above all, low price of milk were the major bottlenecks for dairy farming. In spite of these problems, dairy farming is a profitable business as reported by the farmers. More particularly, raising of crossbred cows would be more profitable with the use of

improved feeding technology instead of existing (traditional) feeding system of the cattle. The policy makers may, therefore, take necessary steps to solve the problems by imparting necessary training to the dairy farmers, providing credit facilities along with proper disease control measures and ensuring marketing facilities. Then dairy farming would certainly be a more profitable business, especially in the northern region of Bangladesh. Dairy farming can also be more promising for the farmers who have sufficient labour force and they can substantially increase their earning by adopting mini dairy farm as a supplementary enterprise.