

# Acceptance of UREA Molasses Block Technology Transfer on Lactating Cows in Muktagacha

Md. Taibur Rahman, Farhana Habib & Md. Saiful Islam

## Abstract

The Study was conducted at Muktagacha upazila of Mymensingh district in Bangladesh for a period of 9 months (From February to October, 2018) with 12 indigenous lactating cows to evaluate the performance of UMB technology by the farmers of Muktagacha upazila at Mymensingh district. Twelve indigenous cows were taken under this study from the village of Rajpur and Garaikuti of Muktagacha upazila under Mymensingh district. The cows were divided randomly into two groups having 5 animals in each group. One is control and another is UMB group. Six lactating cows of control group supplied with basal feeds without supplemented and six lactating cows of supplemented group supplied with basal feeds with the basal feeds plus 500g/d/cow UMB. Dry matter intake was measured 30 days interval and postpartum heat period were also recorded regularly, dry matter intake was significantly ( $p < 0.01$ ) higher than that of control group, live weight changes was measured at 90 days interval. The study findings net weight gain of control and supplemented groups were  $1.33 \pm 0.80$  and  $7.00 \pm 0.26$ . Average daily milk yields during the experimental period were  $1.84 \pm 0.05$  in control and  $2.45 \pm 0.05$  in supplemented group. Body Condition Score and daily milk yield were measured at 7 days interval. The average body condition score of control and supplemented groups were  $2.39 \pm 0.08$ ,  $2.59 \pm 0.12$ ; respectively. Calving to first estrus, calving to first service, Service per conception, calving to conception and calving to subsequent calving interval of control and supplemented groups were  $138.33 \pm 5$ ;  $86.67 \pm 3$ ;  $138.33 \pm 5$ ,  $87.67 \pm 3$ ;  $1.83 \pm 0.31$ ,  $1.33 \pm 0.21$ ;  $155.83 \pm 4$ ;  $93.67 \pm 4$  and  $435.83 \pm 4$ ;  $367.17 \pm 6$  respectively. It can be concluded that UMB may be used for improving milk production and fertility of local cows under the village condition of Bangladesh.



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## Introduction

Agriculture is the single largest producing sector of the economy and its contribution about 14.10% to the total Gross Domestic Product (GDP) of the country. This sector accommodates around 45.1% labour force (BBS, 2018). GDP growth rate of Bangladesh mainly depends on the performance of the agricultural sector. Bangladesh is the fourth largest Agricultural country in the world. Agriculture comprises four sub-sectors such as crop, livestock, fisheries and forestry. Livestock is the dominant sector of economy of Bangladesh. Livestock traditionally plays a vital role in the semi-subsistent economy of Bangladesh. Dairying is nearly always part of a mixed farming in Bangladesh (Saadullah, 2001). The National Dairy Department Board of India has researched and developed feeding strategies for lactating cattle and buffaloes fed on basal forage diets. These are generally low in protein and of low digestibility. Feed supplementation strategies have been developed to correct the nutrient deficiency of poor quality roughages. Urea Molasses Blocks (UMB) have been introduced at village level and on mini dairy farms in some urban and peri-urban areas in Bangladesh. Supplementation with Urea Molasses Blocks (UMB) stimulates production by improving feed digestibility, intake and balance of nutrients available from feed (Leng and Kunju, 1989).

Considering the above situation, the present study was designed with the following objectives:

- i. Acceptance of Urea Molasses Block technology transfer on lactating cows in Muktagacha; and
- ii. Problems ranking of feeding of UMB in village condition.

## Materials and Methods

The experiment was conducted at two villages named Rajpur and Garaikuti of Muktagacha Upazila under Mymensingh district in Bangladesh, with 12 indigenous lactating cow's i.e experimental animal to observe the effect of Urea Molasses Block (UMB) on the performance of local cows. These beneficiaries were randomly selected centers spread over the villages. Data were collected from February, 2014 to October 2014. All the experimental animals were reared to the farmers own manage mental practice. All the cows were mainly stall fed. The concentrate nature was fed twice a day. The cows were fed twice a day in the morning and afternoon. Direct questions were included to collect information from the respondents. All the recorded and calculated data were statistically analyzed by using analyses of variance technique by a computer using SPSS statistical computer package program. An ANOVE was performed to compare data among the selective treatments. Qualitative data were converted into quantitative form by means of suitable scoring technique whenever applicable. Various statistical measures like number, percentage distribution, range, mean, standard deviation, etc were calculated for describing the selected characteristics of the respondents. Measurement of dependent variable: In this study the dependent variable was the performance of urea molasses block technology by the farmers. This dependent variable was measured with the association of various dimensions. These Rice straw, Wheat bran, Rice Polish, Road side grass and UMB. Urea molasses block was supplied to the experimental cows separately within the wooden box so that the animals can lick, not bite it. The block was allowed to lick by the animals 10 minutes twice a day in the morning and evening after milking so that amount of UMB for consumption of supplemented group was 500g/cow/day, clean water was adlibitum and normal feed were free access to all the experimental animals.

## Results and Discussion

Respondents' participation the performance of urea molasses block technology by the farmers in of Muktagacha Upazila under Mymensingh district in Bangladesh has been an important aspect in uplifting the socio-economic condition of the rural women beneficiaries. The socio-economic condition of the households can be assessed by comparing information about past and present situation on change in different dimensions. Total farmers were three groups, such as landed, landless and landed female headed farmers. Total number of farmers was 22 that means landed, landless and landed female headed farmers were 15, 5 and 2 respectively. Acceptability of UMB technology transfer of landholder farmers were higher than that of landless farmers.

**Table-1: Acceptance of UMB technology transfer on lactating cows in Muktagacha, February to April**

Particulars of UMB	February				March				April			
	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers
Farmers willingness to using UMB positive%	93 (14)	60 (3)	100 (2)	86 (19)	100 (15)	14 (2)	100 (2)	86 (19)	87 (13)	40 (2)	100 (2)	77 (17)
Negative%	7 (1)	40 (2)	-	14 (3)	-	60 (3)	-	14 (3)	13 (2)	20 (3)	-	23 (5)
Problem of feeding UMB: Time consuming %	-	-	-	-	7 (1)	-	-	-	-	-	-	-
Costly %	13 (2)	80 (4)	-	27 (6)	7 (1)	60 (3)	-	18 (4)	13 (2)	60 (3)	-	23 (5)

**Table-2: Acceptance of UMB technology transfer on lactating cows in Muktagacha, May to July**

Particulars of UMB	May				June				July			
	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers
Farmers willingness to using UMB positive%	73 (11)	40 (2)	100 (2)	68 (15)	73 (11)	40 (2)	100 (2)	68 (15)	87 (13)	20 (1)	50 (1)	68 (15)
Negative%	27 (4)	60 (3)	-	68 (15)	27 (4)	60 (3)	-	32 (7)	13 (2)	80 (4)	50 (1)	32 (7)
Problem of feeding UMB: Time consuming %	55 (6)	40 (2)	50 (1)	50 (9)	27 (3)	40 (2)	5 (1)	33 (6)	-	-	-	-
Costly %	-	20 (1)	-	5 (1)	-	40 (2)	-	9 (2)	-	40 (2)	50 (1)	13 (3)

**Table-3: Acceptance of UMB technology transfer on lactating cows in Muktagacha, August to October**

Particulars of UMB	August				September				October			
	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers	Landed farmers	Landless farmers	Female farmers	All farmers
Farmers willingness to using UMB positive %	80 (12)	40 (2)	50 (1)	68 (15)	67 (10)	60 (3)	100 (2)	68 (15)	67 (10)	20 (1)	100 (2)	59 (13)
Negative %	20 (3)	60 (3)	50 (1)	32 (7)	33 (5)	40 (2)	-	32 (7)	32 (5)	80 (4)	-	41 (9)
Problem of feeding UMB: Time consuming %	-	20 (1)	50 (1)	14 (3)	13 (2)	20 (1)	-	14 (3)	-	20 (1)	-	-
Costly %	-	40 (2)	-	-	-	-	-	-	-	20 (1)	-	5 (1)

**Table-4: Average Acceptance of UMB technology transfer on lactating cows in Muktagacha**

Particulars of UMB	Average			
	Landed farmers	Landless farmers	Female farmers	All farmers
Farmers willingness to using UMB positive %	80 (12)	40 (2)	100 (2)	73 (16)
Negative %	20 (3)	60 (3)	-	27 (6)
Problem of feeding UMB: Time consuming %	7 (1)	20 (1)	-	9 (2)
Costly %	7 (1)	40 (2)	-	14 (3)

**Problems ranking of feeding of UMB and their course and Recommendations for solutions:**

In the first step, the PRA participants revealed the primary problems, intermediate problems and finally the root causes of each problems. Before the session, the facilitators explained the procedure of finding and ranking of the problems using causal diagram. In the second step, primary problems were scored by the participants according to the severity of the problem. Each problem was assigned maximum of ten marks and the farmers allocated marks out of ten to each of the primary problem. Then the allocated mark of each primary problem was divided into the intermediate problems according to their severity. Finally, root causes were identified by farmers and scored by adding the individual scores of all related intermediate problems. In the third step, the ranking of each root causes was made according to score. Scored causal diagram on problems and constraints of preparation and feeding of UMB are presented in Fig -1 and their corresponding root causes and solutions are discussed in Table-2. After identification of the root causes of problems, ranking was made by summing up the scored value and then attempts were made to find out their solutions.

**Table-5: Problem conformation**

Research area: Muktagacha			
Overall rank	Total Scored	Root causes of problems and constraints	Solution
1.	5	Low income (lack of capital)	Institutional and NGO credit should be provided with simple terms and conditions.
2.	4	Lack of technical knowledge	Short training should be arranged to improve knotweed of the farmers.
3.	4	System	Marketing system should be developed.

The PRA results clearly indicate that feeding UMB have positive impact on increasing milk yield through improving the livestock production which also caused to improve the livelihoods of dairy producers. It may be concluded that if the problems and constraints in preparation and feeding UMB could be saved, the poor dairy producers would be able to meet up the shortage of feed for their livestock.

### Conclusion

The present research was carried out to examine the effect of Acceptance of Urea Molasses Block technology transfer on lactating cows in Muktagacha. Acceptance of UMB technology transfer and the PRA results clearly indicate that feeding UMB have positive impact on increasing milk yield through improving the livestock production which also caused to improve the livelihoods of dairy produces. Urea It has been observed from the experiments that the supplementation of UMB with straw based diet could increase feed intake, daily milk yield, longer lactation period, fertility and live weight gain in cows. The UMB technology will play an vital role in the overall development of the farmers if this technology is properly disseminated and extended in the village level of our country through extension works and by giving the farmers proper training.

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