Alternative feeding system effect on productivity and profitability of the dairy farming system in Bangladesh[1]

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ABSTRACT

Dairy feeding systems in Bangladesh is highly complex and still mostly unidentified and undefined. This has further been aggravated due to scarcity of year-round feed supply which might require adopting alternative feeding system to enhance dairy productivity. Therefore, the objective of this study was to estimate the effect of Alternative feeding Systems (AFS) on animal productivity and profitability and identify factors that affect adoption of the AFS. This study applies the inter-disciplinary approach of the adaptive field research approach which is consisting of International Farm Comparison Network (IFCN) methodology and binary choice logit regression model. The IFCN method is based on the concept of Typical Farm and Technology Impact Policy Impact Calculations (TIPI-CAL) model. Using the concept of IFCN mathematical programming model the baseline farm-the farm which is operating with current feeding system (CFS) was simulated for alternative feeding system (AFS). The data obtained from the typical farms were also subjected to analyse using the logit regression model. The milk production in AFS was found to be 8.2 kg/day/cow while for CFS 6.18 kg/cow/day which implies 21% increase in milk production in AFS. The CFS has the highest cost (48.8 US-\$/100 kg milk ECM) compared to the AFS (34.7 US-\$/100 kg ECM). This implies a reduction of the production cost by 29% if the AFS is replaced with CFS. The return from dairy was found to 88% for AFS where that for CFS was 40%. The benefit cost ratio was obtained 1.69 for AFS and 1.16 for CFS. The factors that influence the adoption of the AFS were found to be significant (both $p<0.01$ and $p<0.05$) were education, milk cost, Return over variable cost (ROVC), predicted profit and Herfindhal index. The overall R^2 is 0.5 and log likelihood is $- 57.10$ which imply a good fitness of the model. This study implies that adoption of the AFS is highly associated with increase in milk productivity, decrease cost and increase profit. However, for adequate adoption of the AFS would help to make sustainable dairy production system so that it might increase milk production and thus can ensure food specifically nutrition security.

Keywords: Dairy, milk productivity, profitability, current feeding system and alternative feeding system