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Technical Efficiency of Alternative Feeding Systems of Dairy in the Rural-Urban Interphase of Bangladesh

Mohammad Mohi Uddin[1], MST. Nadira Sultana[1], Bernhard Brümmer[2], Md. Salauddin Palash[3]

[1] *Bangladesh Agricultural University (BAU), Dept. of Animal Nutrition, Bangladesh*
[2] *Georg-August-Universität Göttingen, Dept. of Agricultural Economics and Rural Development, Germany*
[3] *Bangladesh Agricultural University, Dept. of Agribusiness and Marketing, Bangladesh*

Abstract

Dairying in Bangladesh is highly linked with the provision of high quality animal protein and thus, is considered as a tool for increasing food security. The demand for milk is increasing for which intensification has been taking place to meet the demand. This leads to shifting current feeding system (CFS) to alternative feeding system (AFS). It is highly interesting to see whether this shifting process might have effect on the efficiency of the dairy farmers or not. Therefore, the objective of this study was to estimate the technical efficiency and identifying the underlying factors that affect the technical inefficiency. A stratified random sampling technique was applied for 100 dairy farmers from northern district of Sirajgonj. A pre-tested and pre-designed questionnaire was used to collect data using face-to-face questionnaire. A Stochastic Production Frontier (SFA) approach was applied for estimating the technical efficiency between CFS and AFS. The data were analyzed using Ox-Metrics software with Cobb-Douglas function. Farm specific inefficiency was also estimated in order to identify the factors that affect the inefficiency at farm level. The AFS shows higher technical efficiency (0.78) than CFS (0.64) due to the fact that AFS is operating their dairy farms using relatively cheaper and locally available feed ingredients which do not affect the nutritional composition of the feed ingredients. The percentile distribution of the dairy farmers between AFS and CFS revealed that 67 % of the AFS farmers have the higher technical efficiency compared with CFS. The farm specific factors such as age, level of education, on-farm training and access to local feeds affect farm level inefficiency significantly. The scale elasticity (less than 1.0) shows that both AFS and CFS has opportunity to increase the technical efficiency. This study implies that adoption of AFS would increase the efficiency of the dairy farmers; however, this shifting can only be realized when full utility of adopting AFS is quantified and visualized to the dairy farmers in terms of cost effectiveness. For this a future study is necessary if farmers would dream to increase milk production with relatively lower cost through dairy farming and contribute to nutrition security.

Keywords: Alternative feeding system, current feeding system, dairy, food security, technical efficiency

Contact Address: Mohammad Mohi Uddin, Bangladesh Agricultural University (BAU), Dept. of Animal Nutrition, Mymensingh, Bangladesh, e-mail: muddin_bau@yahoo.com