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Alternative Feeding System Effect on Productivity and Profitability of the Dairy Farming System in Bangladesh

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Abstract

Dairy feeding systems in Bangladesh are highly complex and still mostly unidentified. A further problem constitutes the scarcity of year-round feed supply which might require adopting alternative feeding systems (AFS) to enhance dairy productivity. Therefore, the objective of this study was to estimate the effect of AFS on animal productivity and profitability and identify factors that affect adoption of AFS. To this end the International Farm Comparison Network (IFCN) methodology is applied which is based on the typical farm approach (TFA) and the technology impact policy impact calculations (TIPI-CAL) model. In addition, a binary choice logit regression model is used. A 'typical' farm operating with current feeding system (CFS) was used as baseline farm. The AFS introduces the concept of balanced ration, using the optimal proportion of locally available roughages and concentrates at the least cost. In contrast, the CFS relies on roughage feed, particularly rice straw, and does not use the concept of balanced ration. The data to model the typical farm were obtained from a panel survey on 12 typical farms. Data was analysed using the TIPI-CAL software (5.3) and STATA version 12.0. The results revealed that the adoption of AFS results in a 21 % higher milk production (8.2 kg/cow/day) than CFS (6.18 kg/cow/day), whereas costs are higher for CFS (48.8 US$/100 kg Energy Corrected Milk, ECM) than for AFS (34.7 US$ / 100 kg ECM). This implies that costs can be reduced by 29 % if AFS is adopted. The benefit-cost ratio was 1.69 for AFS and 1.16 for CFS, corresponding to a net return from milk production of 88 % for AFS and 40 % for CFS. Farmer education, milk price, return over variable cost (ROVC), predicted profit and Herfindhal index were significantly ($p < 0.05$) influencing the adoption of AFS. Therefore, a suitable strategy needs to be identified to promote adequate adoption of AFS in order to render dairy production sustainable and thus ensure food and nutrition security among dairy farmers in Bangladesh and their customers.

Keywords: Current feeding system and alternative feeding system, dairy, milk productivity, profitability

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