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Feed Efficiency and Feed Cost in Holstein Friesian Dairy Herds Worldwide

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Abstract

Feed is the largest single cost component associated with milk production world-wide. Unfortunately, in many developing countries, feed cost is high, while the feed efficiency (FE) and the performance of the herds are low. Consequently, it becomes very important to assess the current feeding strategies on dairy farms world-wide. The objective of this study is to understand the variations in FE and feed cost, and to show how the economic improvement of FE can improve farm profitability. Feed data obtained from typical Holstein Friesian dairy herds in twelve countries (seven developing and five developed countries) were analysed and compared using TIPI-CAL (Technology Impact Policy Impact Calculations model).

Feed intake on dry matter basis was highest in Mexican farms (24.5 kg day⁻¹), and lowest in New Zealand (8 kg day⁻¹). FE expressed as kg of milk produced per kg of dry matter feed consumed showed wide variations among the farms; it was highest in the United States (1.7) and lowest in Bangladesh (0.17) while it was 1.08 in China. Feed cost on total cost was lowest in China; 16 % compared to 86 % in Jordan and 66 % in Spain. In terms of efficiency, the New Zealand and American dairy herds were more efficient in converting nutrients into milk at lowest costs of 24 % and 20 % respectively, with milk yields of 4252 and 7100 kg Fat Corrected Milk (FCM) per lactation per animal, compared to other countries in the study. As conclusion, in the developing countries improving FE is a tool for better utilisation of feed and land resources as feed cost per kg of milk is quite high compared to developed countries. Under low milk price scenarios, a reduction in feed cost on-farm would lead to substantial improvement of feed efficiency of dairy herds in these countries to a comparable level with those of the developed countries, which will maintain farm profitability without compromising milk production or herd health.

Keywords: Milk production, development countries, milk price scenarios, economic modelling