Factors Associated with Milk Revenue, Feed Costs and Return Over Feed Costs in Ontario Dairy Herds

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Introduction

The individual dairy producer's goal is to produce milk efficiently. Producers attempt to maximize profit by reducing their feed costs and increasing their revenue. Average cost of feeding a cow varies greatly between individual farms, as does revenue. This initial study sought to identify variables associated with revenue, feed costs and the return over feed costs.

Materials and Methods

Individual dairy producers (n=96) were identified through Ontario Dairy Herd Improvement's (DHI) Management Club groups. Producers recorded types and amounts of feeds fed to their cows per day and amount of milk shipped each month. Individual dry matter intakes were multiplied by fixed-market prices to generate feed costs/cow/day. Revenue was calculated based on the Dairy Farmers of Ontario multiple component pricing formula for milk. All individual variables were tested against revenue, feed expenses, and return over feed (ROF) to distinguish any significant variables ($p < 0.2$). All significant variables were then modeled in a backward stepwise linear regression for each of the three dependent variables.

Results and Discussion

Analysis revealed that 88% of milk revenue variation was attributable to milk yield per cow. Therefore, milk yield per cow was restricted from entering further analysis for factors associated with revenue and ROF. Three-times-a-day milking (3x milking) and total dry matter intake (TDMI) per cow was positively associated, and use of a purchased complete feed was negatively associated with milk revenue. An increase in total concentrates fed per cow was associated with increased feed costs. Other variables associated with increased feed costs were use of a complete feed and increased milk yield. Return over feed was positively associated with 3x milking and the TDMI per cow per day, and negatively associated with feeding a purchased complete feed.

If milk yield per cow is allowed to enter the ROF model, both 3x milking and TDMI become non-significant. This suggests that these two variables are determinants of milk yield. However, use of a purchased complete feed remains in the model. This would indicate that costs associated with the use of a complete feed offset any benefits gained in milk revenue.

Conclusions

In this sample of Ontario dairy farms, ROF was most strongly influenced by the amount of milk produced per cow, hence milk revenue generated. Three-times-per-day milking and TDMI are positively associated with ROF, but are also determinants of milk yield. The only significant feed cost variable was the use of a purchased complete feed. In this analysis complete feed was positively associated with feed costs and negatively associated with revenue.

Further research has been initiated to assess interactions of ROF with health parameters and other management factors.