

Impact of Nutritional Grouping on the Economics of Dairy Production Efficiency

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Abstract

The economic efficiency of nutritional grouping strategies in 5 Wisconsin commercial dairy herds was studied using a daily dynamic stochastic Monte Carlo simulation model. Each month, the clustering method was used to homogeneously regroup cows according to their nutrient concentration requirements. The average NE_L and $MP+1SD$ concentration of the group were used to formulate the group diet. The calculated income over feed costs gain (IOFC, \$/cow per yr) of having >1 nutritional groups among the herds ranged from \$33 to \$58, with an average of \$39 for 2 groups and from \$42 to \$58, with an average of \$46 for 3 groups. The improved IOFC was explained by increased milk sales and lower feed costs. Higher milk sales were a result of fewer cows having a milk loss associated with low BCS in multi-group scenarios. Lower feed costs were mainly due to less RUP consumption in multi-group scenarios. The percentage of total NE_L consumed and captured in milk for >1 nutritional group was slightly lower than that for 1 nutritional group due to better distribution of energy throughout the lactation and higher energy retained in body tissue, which resulted in better herd BCS distribution.

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