

# **An Economic Analysis of Productive Efficiency in Alberta Dairy Production**

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It is generally accepted that economies of size exist in dairy production, although the extent to which these are realized is likely affected by domestic dairy policy. These economies of size can be viewed as having two parts; herd size economies and milk yield economies. However, to what degree do these economies exist in Alberta dairy production, and how important are they in relative terms? This study investigates the nature of dairy costs of production in Alberta. It is hypothesized that economies of herd size and economies of milk yield exist in Alberta milk production. Management factors contributing to these economies are examined. Finally, the level of physical and economic efficiency of Alberta dairy producers is evaluated.

The competitive position of Alberta's primary dairy producers is assessed using a farm management approach in analyzing cost and revenue data. Cost of production data for 1994, 1995 and 1996 are examined. Herds are grouped based on two criteria; herd size and average milk yield per cow. Two analyses are performed on each set of annual data to facilitate a more concise assessment of competitiveness for producing milk in Alberta at the farm level. First, the economic costs of producing milk are estimated and compared across herd size group and milk yield group. Secondly, physical and economic efficiency measures are calculated and compared, again using the herd size and milk yield groupings.

Based on this analysis, it is concluded that both economies of size and yield are present in milk production in Alberta. Labour and capital costs are identified as having the most significant impact on total costs of production. A link between increased herd size, labour productivity and lower total labour costs is suggested. These results have potential implications for the future competitive position of the Alberta dairy sector, and for individual producers who may be considering adjustments in their own operations in order to prepare for a more "competitive" regulatory environment.