

Impact of the Use of Bovine Somatotropin on the Genetic Evaluation of Dairy Cows

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Summary

Records from Dairy Records Processing Center at Raleigh, N.C., were analyzed to detect the effects of bovine somatotropin (bST) on genetic evaluation of cows. Data consisted of 103,965 lactation records for milk yield with 9,494 treated records. All herds and herds that were influenced by bST were compared. Different animal models were used to obtain breeding values for

cows. Genetic parameters of milk yield, with and without the treatment, were obtained by a multiple repeatability animal model. Correlations between breeding values predicted from different models for all-herd and bST-herds were 0.99 and 0.98. Effects of bST treatment on genetic gain were small, but bias in the ranking of top 2% of cows was found. Adjusting genetic models to account for bST treatment within herds could reduce the effect of bST treatment on cows' evaluation programs. In general, little impact of bST on genetic programs was found in this study.

Introduction

The ability of bovine somatotropin (bST) to enhance milk yield and feed efficiency in dairy cattle has been observed in numerous studies. Most of these studies have reported that treated cows tend to perform better than untreated cows and could be considered to be cows of superior genetic potential. Therefore, if response to bST treatment is ignored, bias in genetic evaluation could occur. Also, systematic use of bST within herd or on certain sire families according to phenotypic performance

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