BOVINE SOMATOTROPIN (bST): AN ASSESSMENT OF POTENTIAL RESPONSE AND PROFITABILITY FOR ADOPTION ON NEW ZEALAND DAIRY FARMS

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ABSTRACT

Administration of the growth hormone bovine somatotropin (bST) is known to increase milk production in lactating cows making the technology attractive for use in commercial dairying. BST a cost reducing and output enhancing technology is used in some countries while others including New Zealand have not approved the use of the hormone. Studies indicate that as a result of bST use by some major dairy producers, low cost or subsidised dairy products could enter international trade to damage competitive positions of other major dairy exporters not adopting the technology. New Zealand's dairy industry is particularly vulnerable to such a situation.

The objectives of the study were to estimate potential response and evaluate the profitability of bST use in New Zealand dairy farms. Response to bST is highly dependent on the level of animal nutrition and most available information is for stall fed cattle. The study attempts to estimate the potential for bST in a pasture based dairy management system in New Zealand.

Twelve sites representative of the major dairying regions of New Zealand were selected. Data on pasture growth rate were compiled from published data or where such data were unavailable were generated through computer modelling. Response to bST was assumed to be a function of pre-grazing herbage mass. Regional bST response were calculated on this basis.

The study assumed a 150 day bST treatment period for seasonal herds in New Zealand. The profitability of bST use was estimated in five 30 day sub periods for the twelve sites used in the study. The incentive to use bST on New Zealand dairy farms is assessed on the basis of a required return to management.

Results reveal that feasibility of bST use in New Zealand dairy farms are closely linked to pasture growing conditions. For the Northland, Bay of Plenty,

Taranaki and Southland sites where pasture growth is consistent, bST use is feasible throughout the 150 day treatment period considered in the study commencing from peak lactation. For the balance of North Island sites which included Waikato, Rangitikei, Manawatu and Wairarapa districts, the drier summer condition and relatively high stocking rates prevailing made bST use feasible only during the first half of the lactation cycle. For the South Island sites excluding the dry Central Otago site, bST could be profitable only during the second half of the lactation cycle because of the colder winters and late spring. The study identifies how bST could be manipulated by the New Zealand dairy farmer to maximize returns.

The findings are that bST could be used selectively to enhance profits on New Zealand dairy farms. If at some stage bST were approved for use in New Zealand, dairy farmers would be aware of the implications. Secondly, it provides a base to survey the attitudes of dairy farmers to know of the likely adoption rates for a better understanding on the effects bST would have on the dairy industry of New Zealand.

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TABLE OF CONTENTS

LIST OF TABLES

Appendix

LIST OF FIGURES

Appendix