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**A FRAMEWORK FOR ANALYSING THE ADOPTION
OF NEW ZEALAND PASTORAL FARMING
SYSTEMS IN CENTRAL VERACRUZ STATE, MEXICO.**

**A thesis submitted in partial fulfilment of the requirements
for the degree of Master of Agricultural Science
in Farm Management
at Massey University.**

By:

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1995

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ABSTRACT

Tropical areas of developing countries have significant potential for increased food production. In the case of Mexico, an important economic activity in the tropics is livestock production based on pasture. Tropical regions represent 25% of the total area of Mexico and support more than 50% of the country's cow production. Historically, however, animal production in Mexican, and other tropical areas, has been low. Low pasture utilisation, and associated poor herbage quality, is one factor that contributes to poor animal performance in the tropics. This situation contrasts with the success of New Zealand pastoral systems, which in comparative terms have been able to obtain high levels of animal production and efficient use of pasture.

Differences in pasture productivity (both in quality and quantity) and social and economic conditions between the Mexican tropics and New Zealand are large. Nevertheless it was proposed that some of the pastoral farming methods used in New Zealand, could be adapted to the conditions of tropical farmers in Mexico, particularly in relation to effective planning and control of the farming system. To test this hypothesis, the consequences of implementing some of New Zealand's pastoral farming techniques under tropical conditions in Central Veracruz State were explored by developing a spreadsheet model to simulate local farming systems. The model included linked sub-models for pasture growth and quality, livestock transactions, milk production and enterprise gross margins. The effect of improved farming systems of milk output and cash returns were evaluated relative to the average levels of performance currently achieved from a medium-sized farm in the Central region of Veracruz State in Mexico. Straight forward changes in the design of the farming system, such as synchronising calving with the pattern of pasture growth rather than year-round calving, would significantly affect milk production and cash returns to the farm family.

The modelling process was seriously constrained by the lack of farm-level data on pasture production and animal performance. Nevertheless, the model framework clearly identifies which data should be collected, and priority should now be given to assembling these data so simulation decision support models such as that developed in this study, can be effectively used to plan improved farming systems.

Keywords: tropical agricultural, Mexico, farming systems, spreadsheet model.

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