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**THE PRODUCTION OF VOLATILE FATTY ACIDS
IN SHEEP ON DIFFERENT PASTURE TYPES**

**A thesis presented in partial fulfilment of the
requirements for the degree of Master
of Agricultural Science in Animal Science
at Massey University**

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1970

ACKNOWLEDGEMENTS

I wish to thank my Supervisors, Dr. M.J.Ulyatt and Professor D.S.Flux, for their continual interest, guidance and assistance throughout this project.

I am indebted to the following for their valuable and willing assistance:

Mr P.Vlieg and the technical staff of the Applied Biochemistry Division, D.S.I.R. for the preparation and care of the animals;

Mr N.A.Thomson and Mr A.S.D.King for technical assistance during the experiment;

Mr J.A.Raven, Mr I.D.Shelton and Mr N.J.Chandler for assistance with chemical analysis of pasture;

The staff of the Herbage Laboratory, Grasslands Division, D.S.I.R. for the botanical analyses;

Members of the Sheep and Dairy Husbandry Departments for helpful discussion.

Special thanks are due to Mrs M.D.Newth for typing this thesis.

PREPACE

The New Zealand economy depends largely on the efficient conversion of pasture to exportable animal products. The current emphasis on higher stocking rates increases the need for pastures best suited to animal production.

Pasture species used in New Zealand are recognised as differing in their effects on animal production, these differences being loosely attributed to variation in "pasture quality". If the level of output of saleable product is the accepted measure of pasture quality, then the principal factors governing this are the quantity of feed consumed and its subsequent utilisation.

A number of studies have shown that differences in food intake alone cannot account for the observed differences in animal performance. It has thus been considered important to investigate the factors affecting the utilisation of pasture by the animal.

Volatile fatty acids (VFA) produced in the rumen are generally considered to account for 70 to 80 per cent of the net energy requirements of ruminants, and their production must be a major determinant of feed utilisation. Differences in the ruminal concentrations and proportions of VFA have often been observed with pasture feeding and have been cited as possible reasons for differences in pasture quality.

The investigation described here was undertaken as a preliminary study of the role of VFA production in determining the quality of New Zealand pasture species.

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