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A STUDY OF THE EFFECT OF THE FREQUENCY OF SPRING CUTTING  
ON THE REGROWTH AND RESULTING YIELD OF  
LUCERNE (Medicago sativa L.)

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A thesis presented in partial fulfilment of the requirements  
for the Degree of Master of Agricultural Science

at

MASSEY UNIVERSITY

by

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1968

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## A C K N O W L E D G E M E N T S

This study was suggested by Mr G.S. Robinson, Senior Lecturer in Field Husbandry, Massey University, to whom the author is sincerely grateful, for without his advice, help and continued enthusiasm, this Thesis would not have been written.

Thanks are also due to the following:

Prof. B.R. Watkin, Mr C.J. Baker and Mr L.R. Cooper, for assistance in the field work;

The late Mr A.C. Glenday of Applied Maths. Division, D.S.I.R. for valuable advice and help in statistical problems associated with this work; Dr R.W. Brougham and Mr D.B. Edmond, both of Grasslands Division, D.S.I.R., for helpful advice in experimental work;

Miss M.G. Campbell and the Library Staff, Massey University, for their help in obtaining references from inter-loan resources; Miss D. Scott and the Photographic Unit Staff, for assistance with general photographic work;

Mrs P.A.A. Cook, for her diligent typing of this Thesis.

This study was carried out under the tenure of a Post-Graduate Scholarship awarded by the New Zealand Government (under the Special Commonwealth African Assistance Plan), to whom the author expresses his sincere gratitude.

## CHAPTER I

### INTRODUCTION

There is abundant evidence to show that the yield, stand, chemical composition and the feeding value of lucerne may be materially affected by varying the cutting interval. Therefore, the purpose of the field experiment reported here was to determine the effect of the frequency of spring cutting on the regrowth and resulting yield of a pure stand of New Zealand certified lucerne (Chanticleer) and on weed invasion of the stand and, if possible, the reasons for this effect. It is hoped that this information will add to the existing evidence.

Lucerne is cultivated for stock feed in many parts of the world, including New Zealand. In recent years, it has become increasingly important as a forage crop because of its potential for high yields of good quality feed under a wide range of climatic and soil conditions. The long tap root of the plant affords it considerable resistance to drought. Moreover, the plant is rich in phosphates, lime and protein, all of which are essential in animal production. In common with other legumes, it possesses the power to increase the nitrogen content of the soil.

Lucerne was introduced into New Zealand during European settlement and its acreage has since increased, especially in the South Island. In 1962, there were approximately 146,000 acres cut for hay and silage. This figure would be much higher if the acreage of grazed lucerne was included. It has been reported that for many years lucerne has given profitable returns in parts of the

Auckland and Wellington Provinces of the North Island, (N.Z. Dept. of Agric. Bul. No.155, 1958).

The increased use of lucerne in New Zealand farming can be attributed to improved farming technology. The crop can now be established easily through inoculation with the right strain of bacteria and maintained at high production levels through the use of fertilisers. Weeds can be effectively controlled by mechanical means as well as weedkillers. Mechanization of hay and silage making is also a major factor influencing the spread of lucerne into areas hitherto considered unsuitable.

On the other hand, in many parts of New Zealand, particularly the North Island, improved strains of high producing grasses and clovers are on the increase at the expense of lucerne. In addition, root and fodder crops are grown in place of lucerne to supplement pastures in summer and winter. Nevertheless, lucerne has got a big potential in the drier areas and on the lighter soils where it has been shown to outyield grasses and clovers.