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SOIL NITROGEN STUDIES WITH PARTICULAR REFERENCE
TO FRUIT-TREE NUTRITION

I. SEASONAL VARIATIONS in the MINERAL NITROGEN STATUS and
in pH of an ORCHARD SOIL under CLEAN-CULTIVATION and
PERMANENT SOD

II. The COMPARATIVE BEHAVIOUR OF NITRATE and AMMONIA added
in NITROGENOUS FERTILIZERS to a SILT-LOAM SOIL

by

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PART ONE

CHAPTER I

INTRODUCTION

The importance of nitrogen for the nutrition of fruit trees is well established and it is largely for this reason that much attention has been given by overseas workers to factors influencing the level of soil mineral nitrogen. Soil management methods have been shown to exert a considerable influence on mineral nitrogen level of the soil, those methods which make nitrogen available most readily depleting the total supply in the soil most rapidly.

In view of the importance attached by overseas workers to the influence of soil management practices on the level of the soil mineral nitrogen, and as no previous study of this problem appeared to have been made in New Zealand, the present investigation was undertaken. A study was made to compare the effects of clean-cultivation and sod-culture on both the mineral nitrogen level and pH in a silt-loam orchard soil over a period of several months. This afforded an opportunity to investigate also the effect of seasonal factors on the periodic variations in mineral nitrogen under both systems of management.