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A STUDY

of

THE INFLUENCE OF ANIMAL MANURE AND CLOVER ON THE STRUCTURAL AND CHEMICAL CHARACTERISTICS AND THE EARTHWORM ACTIVITY

IN A MANAWATU SOIL.

by

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Thesis presented for the degree of M. Ag. Sc. in Field Husbandry of the University of New Zealand.

THE SOIL TYPE THE REVIEW OF LITERATURE

- (a) THE INFLUENCE ON THE STRUCTURAL CHARACTERISTICS.

 The Plant Roots

 Microbial Activity

 The Type of Cover

 Lime and Manure
- (b) THE INFLUENCE ON THE CHEMICAL CHARACTERISTICS.

 The Phosphorus in the Soil

 The Potash in the Soil

 The Ammonia and Nitrate Nitrogen in the Soil

 The Organic Matter in the Soil
- (c) THE INFLUENCE ON EARTHWORM ACTIVITY.

 Species and Distribution

 Earthworm Population

 Seasonal Activity

 Its Effect on Soil Productivity
 - (a) Chemically and Biologically
 - (b) Physically

(a) THE INFLUENCE ON THE STRUCTURAL CHARACTERISTICS.

Material and Method

Aggregation Under Pasture

The Influence of Depth on Aggregation

The Visual Differences in Aggregation

(b) THE INFLUENCE ON THE CHEMICAL CHARACTERISTICS.

The Acid-Soluble and Adsorbed Phosphorus in the Soil

Special Appendix:- Of the Effect of Lime and Super on the Acid-Soluble

Phosphorus and pH of the Soil.

The Potash in the Soil

The Ammonia and Nitrate Nitrogen in the Soil

The Organic Matter in the Soil

(c) THE INFLUENCE ON EARTHWORM ACTIVITY.

Material and Method

Factors Affecting Numbers and Weights of Earthworms

Seasonal Activity

Factors Affecting Species Distribution

Effect on Soil Productivity

(a) Chemical

GENERAL DISCUSSION

SUMMARY AND CONCLUSION

CRITICISM OF EXPERIMENTAL DESIGN

ACKNOWL EDGEMENTS

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