

Topdressing in Auckland Province

Procedure Adopted in Laying Down Experiments to Measure Responses

Contributed by the FIELDS DIVISION, AUCKLAND.

FOR more than forty years pasture topdressing in the Auckland Province has been so well established as a practice that it would be extremely difficult to visualise what the position would be without this aid to higher production.

Manures are undoubtedly a potent factor in this direction. In fact, it could be claimed with a great deal of truth that the manuring of grassland is by far the most important single factor in the maintenance of primary production. It is true that other activities, such as the breeding of livestock, the use of better pasture strains, the practice of advanced ideas in farm management, and the employment of modern farm machinery are also very important.

However, without adequate topdressing, none of these will function to the fullest extent. Good herds will not milk well on poor pastures; high-yielding pasture strains languish without adequate supplies of fertiliser; and advanced ideas in other directions are of little value without a plentiful supply of stock food, which depends almost entirely upon the efficiency of the manuring of the sward.

Importance of Topdressing

As an indication of the importance of topdressing in the Auckland Province one might cite the fact that of the 3,326,279 acres of grassland topdressed in New Zealand no fewer than 1,707,371 acres (or 51 per cent. of the area) are in the Northern Province.

History of Topdressing

In the very early days of grassland farming very little fertiliser was used on pastures. Generally speaking, manures were reserved for crops, and pastures were ploughed up when they showed signs of weakening. At a later stage manuring of grassland was

This is the first of a series of articles on topdressing practice in various parts of the Auckland Province. The articles will be written by the Instructors in Agriculture for the districts, and will contain definite recommendations for the various soil types. At the conclusion of the series the findings will be summarised so that the information may be on hand in concise form.

practised to a slight extent, but with conspicuous success. At this stage the fertilisers used were principally bonedust and basic slag. Gradually the practice increased in popularity, until a fair acreage of grassland in the Waikato was receiving moderate and fairly regular dressings.

When war broke out in 1914 the cost of bonedust became prohibitive, while supplies of basic slag were greatly restricted. Therefore, attention had to be turned to other sources of fertiliser supplies which would enable pasture efficiency to be maintained with consequent improvement in production. This was achieved by employing supplies of rock phosphate, which subsequently gave way to superphosphate.

Undoubtedly, superphosphate owes much of its early popularity to the fact that other sources of fertiliser supplies were removed. However, it has proved by its suitability for many northern soils that it is a highly efficient manure. Production has increased enormously, and it has been employed quite freely for cropping as well as for pasture topdressing.

It is not intended, however, to dwell on the merits of any particular fertilisers in this article, but rather to indicate the procedure that has been adopted in laying down experiments with a view to measuring responses to fertilisers.

Need for Experiments

One is very often asked by farmers, "What manure should I use?" It would be very pleasant if, through having the soil analysed, one could immediately name the manure and the quantity that would give maximum returns, but unfortunately soil analysis is practically useless as a guide to topdressing.

The most satisfactory way, and, to the farmer, the most conclusive way, of answering this question is actually to use a series of manures and manure mixtures under the conditions of soil, climate and pasture that the farmer will be placed, and to study the results carefully. Realising this, the Department of Agriculture has carried out extensive trial work with topdressing during past years, and in the Auckland Province alone has 185 topdressing trials at the present time. These are in addition to those connected with pasture mixtures, fodder crops, root crops, etc.

Selection of Areas

In the Auckland Province there is a wide range of soil types. Heavy clays, light sandy soils, old volcanic areas, river silts, and young pumice soils are but a few of the variations met with in a survey of the province. Just as the soil type varies, so do we find that the responses to fertilisers show a wide diversity of results.

Consequently, great care is necessary in choosing sites for trials in order to make certain, firstly, that a trial is