

## PURCHASE OF SEEDS AND MANURES FOR GOVERNMENT DEPARTMENTS.

In 1931 an arrangement was made whereby the Fields Division undertook the purchasing of seeds and manures required by Government Departments and institutions. This arrangement continued during the year and has operated quite smoothly. There is no question that so far as seeds are concerned the system in operation of buying on a purity and germination basis is having most beneficial effects so far as the pastures on Government properties are concerned.

## THE HEMP INDUSTRY.

The matter of the hemp industry has been referred by the Government to a committee of departmental officers with a view to considering all phases from the point of view of whether or not it is possible to take some action that will improve the position generally of the hemp industry. This industry should be worth quite an appreciable sum to the country, but of recent years it has been gradually drifting. It does seem that some steps should be possible which would improve the general milling of the fibre. At the present time too high a percentage of the milled article is of low grade, and this, of course, militates against satisfactory business overseas.

For the twelve months ended 31st March, 1936, more hemp and tow was submitted for grading than in the previous year. For 1935-36 the actual number of bales of hemp graded was 26,162—an increase of 7,348 bales on the figures for the previous twelve months. The quantity of tow graded increased by 1,338 bales, the actual quantities graded being for 1935-36, 4,848 bales, and for 1934-35, 3,510 bales.

## DEPARTMENTAL PHOTOGRAPHY.

The Photographer attached to the staff of the Fields Division, as in past years, performed excellent service, and has carried out photographic work of a high order for all branches of the Department and occasionally for other Departments. Excellent use is made of the photographs for lecture purposes, illustrating publications, and for advertising purposes, both in New Zealand and abroad.

## STAFF.

I desire to tender my best thanks to members of the staff for their loyal co-operation and excellent work during the past season, which has been a particularly arduous one.

## FIELD EXPERIMENTAL WORK.

Mr. J. W. Woodcock, Crop Experimentalist, supplies the following sub-report:—

During the year the number of co-operative experiments carried out on farms by the Fields Division has been increased from 771 to 902. Although more standard trials have been laid down, new lines of investigation account in the main for this increase. A detailed summary of experiments in progress is given in Appendix A.

*Publication of Results.*—Five reports on experiments or articles containing references to results from experiments have been published in the *New Zealand Journal of Agriculture* and a list of these is given in Appendix B.

## DESCRIPTION AND PROGRESS OF EXPERIMENTS.

*Grassland.*

*Yield Trials under Mowing and Grazing Technique.*—At Marton Experimental Area nine trials are now being conducted and two others have been sown recently. The scope of the existing trials was referred to in the last annual report. Both the new experiments are planned to investigate the production from pedigree lines of perennial rye-grass, white clover, and Montgomery red clover, respectively, as compared with ordinary certified strains of these species, but different methods are employed in each trial.

At Ruakura Farm of Instruction an experiment on the use of lime is being continued. Three further trials are to be established shortly to investigate the effect of phosphate, potash, and lime on various soil types. As the recent soil survey of Waipa County has shown these soils to be the most important in the district it is considered that results of such experiments will have wide application. A further trial has been planned to test the value of severe harrowing on paspalum.

*Observational Top-dressing Experiments.*—The survey of fertilizer responses on grassland is being continued, and these observational top-dressing trials account for 50 per cent. of the total number of experiments. Although the relationship of lime and potash to phosphatic manuring is the main project, the latter sown trials are designed to try out various forms of phosphate in addition, and it is intended in the near future to include the new "Heskett" slag in a number of experiments to be laid down.

Responses to phosphates occur on most soils, but it would appear that in some districts a stage has been reached when the application of potash and lime in addition to phosphates must receive consideration.

*Demonstrations and Trials of Grass and Clover Strains (in collaboration with the Agrostologist).*—These trials have proved of great value not only for purposes of testing strains of grasses and clovers under varying soil conditions but also for demonstrating to farmers the importance of sowing approved strains. The importance of sowing a good strain of white clover as well as certified rye-grass has been well demonstrated by this series in most districts. Where clover was excluded entirely, the extremely poor appearance of the grasses has often been a marked feature even in localities where good volunteer white clover is believed to come in readily and in spite of heavy top-dressing with phosphate and lime.

*Grazing Trials.*—Five experiments are being carried out in which the production as measured in grazing days of one field is compared with that of another differently treated. Two experiments in Taranaki compare potash dressings with no potash, and one in Canterbury compares fields which are periodically limed with one unlimed field. One experiment at Winton Experimental Area investigates the relative production of certified rye-grass with that of ordinary Southland rye-grass. It is proposed to lay down a further trial at Winton during the coming season to compare the better type Southland seed with certified rye-grass under sheep grazing, and records are to include not only grazing days but also the weights of lambs reared on the respective areas.