

There has been an increase of seventy-three over last year's registrations for the number of brands registered.

Inspections were made in Auckland and Wairarapa districts. Practically all manufacturers' and merchants' premises in Auckland were visited last April, and a number of matters connected with fertilizer sales, invoice certificates, registration, &c., received attention. In the case of the Wairarapa visit, the sale of an unregistered fertilizer as a special mixture was investigated. A report on the various points attended to was sent forward.

Two lectures were given on fertilizers, and an extended series of articles published several years ago in the *Journal of Agriculture* were revised and reprinted in the *Orchardist* of New Zealand in response to requests from fruitgrowers. Several requests from farmers' organizations have also been received for lectures, and there are signs of more interest generally being taken in the question of the choice, quality, unit values, &c., of fertilizers. There has been a good deal of correspondence in this latter connection with farmers and others.

No personal check is kept on brand-registration fees paid by vendors, and there may be some evasion of payment in respect of some fertilizers which are not registered. It appears necessary to have inspections of manures on sale made at intervals in order to render the system of administration effective and equitable.

The number of mixtures containing lime as a diluent has increased during the year, and a few containing as much as 66 per cent. of lime have appeared on the market for sale in small quantities under the name of "garden" fertilizers.

A matter which apparently requires to be closely reviewed is the price charged to the farmer for ground Nauru phosphate, 36-38 per cent. phosphatic-acid grade, which appears to be rather too high. Purchasers have at times made complaint at the high price of £4 4s. per ton charged for this phosphate, which is useful under certain soil and climatic conditions. This price compares unfavourably with English prices, such as £1 12s. per ton to the farmer, for finely ground North African phosphate of 26 per cent. phosphatic-acid content.

Some mixtures of incompatible materials are now being sold under such names as "dry neutral ammoniated superphosphate." These mixtures consist of lime, sulphate of ammonia, and superphosphate in proportions of, say, 1:1:2. Although such mixtures may have fairly good chemical stability under dry conditions of handling or storage, when applied to the land the ammonia from the sulphate of ammonia is rapidly lost in the presence of moisture.

Co-operation with Stock Inspectors was maintained throughout the year in connection with fertilizer sampling and the checking of brands, &c. A considerable amount of inspection is necessary as regards invoice certificates, as it appears that quite a large number of vendors are not furnishing these documents to purchasers, and in some cases certificates are not drawn up in accordance with the Act.

Large quantities of basic slag have been imported, and there is necessity for systematic sampling and examination of fertilizers brought out here, as well as the locally produced goods. The annual publication of the analyses of all brands on the market for the notice of fertilizer-users would be of great assistance.

WEED-KILLING EXPERIMENTS.

Further ragwort (*Senecio Jacobaea*) spraying experiments were conducted by Mr. F. B. Thompson under the supervision of Mr. J. A. Bruce, Inspector of Fertilizers.

The conflicting results obtained this year indicate the need of further experiments, preferably in several districts simultaneously, to determine the circumstances that govern the failure or success of the treatments.

Ammonium persulphate, ammonium percarbonate, and sodium perborate were found to have practically no toxic effect on ragwort.

Gorse about 3 ft. high was sprayed with 10-per-cent. and 25-per-cent. solutions of ammonium thiocyanate and 5-per-cent. and 10-per-cent. solutions of 2:1 white arsenic-caustic soda. There was no marked difference between the treated and untreated areas except that on the former the burn had been more complete.

Thick blackberry, about 6 ft. high, was sprayed with 25-per-cent. thiocyanate and 10-per-cent. arsenic solutions. These were burnt, and when inspected two months later there was considerably less regrowth on the treated areas and slightly less on the arsenic plot.

Preliminary experiments conducted with ammonium thiocyanate and with various chromate and bisulphite salts on bracken indicated that these chemicals are capable of killing this weed at comparatively dilute strengths of 2½ per cent. to 5 per cent. The ammonium thiocyanate and sodium bichromate were the most effective.

Some reports which are to hand on treatment of sorrel and Californian thistle indicate that ammonium thiocyanate, in strengths varying from 5 per cent. to 10 per cent., was an efficient eradicator under the conditions in which it was tried out.

Publication.—"The Chemistry of Weedkillers—VI: The Bisulphite Group." B. C. Aston, J. A. Bruce, and F. B. Thompson. *N.Z. Jour. Agric.*, Vol. 52, pp. 137; 1936.

Approximate Cost of Paper.—Preparation, not given; printing (719 copies), £85 10s.

By Authority: G. H. LONEY, Government Printer, Wellington.—1936.

Price 1s. 6d.]