

Wheat manuring experiments have disclosed that the average increased yield per acre from the use of 1 cwt. of superphosphate in 124 experiments was over 4 bushels, and this represents a profit of approximately 300 per cent. on the outlay for manure. The Division's recommendation for the manuring of the wheat crop has been broadcast as widely as possible, and the fact that this recommendation is being acted on is apparent from the much higher percentage of the area sown to wheat being fertilized than in former years.

A disease known as mottled heart in swedes has for some years been taking a heavy toll of the swede crop. During the last twelve months the Division has been working along the lines of discovering some method of combating this disease, and from numerous experiments put in hand throughout the Dominion a satisfactory treatment was discovered. This consists of applying 10 lb. per acre of ordinary commercial borax to the land at time of sowing. A deficiency of boron in the soil is apparently the cause of a number of diseases of crops, and it will be of interest to farmers to know that such a simple and cheap remedy is so effective in controlling the particular disease of swedes mentioned above.

The whole of the experimental work of the Division is supervised by the Crop Experimentalist, and a comprehensive report by that officer on the experimental work in hand for the year ended 31st March last is appended.

FEED FLAVOUR INVESTIGATION.

During the 1934-35 season the Agrostologist investigated feed flavour in butter, and suggested that a detailed study of pastures might indicate the causes of flavour and suggest methods of control. During the 1935-36 season forty farms in the Morrinsville district were put under observation and an officer stationed at Morrinsville in July, 1935, to carry out the experimental and observational work. Some experimental control work was carried out. On ten farms about 20 acres were treated with nitrogenous fertilizers, but owing to feed shortage farmers grazed these fields so hard that the suggested management-methods could not be carried out. Field observations of grazed pastures and examination of the cream supplied showed that (1) pastures with less than 15 per cent of clovers caused no flavour or only a mild flavour; (2) grass-dominant pastures with clovers sub-dominant caused comparatively strong flavours, particularly in October; suckling and/or subterranean clover with white clover caused stronger flavours than white clover alone; (3) clover-dominant pastures caused stronger flavours than those which were grass-dominant; (4) suckling and subterranean clovers caused more intense flavours than white clover; (5) in the early spring, and to a much less extent in the autumn, 10 per cent. or more of sweet vernal caused a distinct "Coumarin" flavour; (6) feed flavours in the night's cream were normally much stronger than in morning's cream; (7) the average "feediness" gradually increased in August and September, reached its peak in October and November, and then declined to end of March, when it was very mild. The experimental work (nitrogenous and phosphatic fertilizers, and the sowing of grass and pasture management) is being continued next season.

ERADICATION OF RAGWORT.

The spread of ragwort is giving great concern in some parts of the Dominion, particularly in the Auckland Province. On small dairy farms ragwort can be controlled, but possibly not eradicated, by the use of sodium chlorate. The control on large dairy farms can only be done with sheep. So far as the Auckland Province is concerned, the most serious problem is to control ragwort on farms on the fringe of the Central Plateau and the western upland of South Auckland on sections originally devoted to dairying, but where the weed has spread to such an extent that dairying cannot now be carried on. Sheep are being used in these localities to some extent, but farmers are faced with very poor returns from sheep. Losses are considerable. Very low prices are paid for fat ewes from ragwort country, and on many areas lambs cannot be fattened, but have to be disposed of as stores. If kept after January most of them die. Experiments have been carried out with "Atlacide" in comparison with sodium chlorate, and the former appears to be quite as satisfactory as the latter. About the year 1931 eggs of the Cinnabar moth were liberated, but very few reports of its successful establishment have been received. In one or two localities moths were seen last season, but no effect has been noticed on the ragwort.

ARTIFICIAL FERTILIZERS: TOPDRESSING.

The topdressing of pastures with artificial fertilizers and with lime continues to be viewed by the farming community as of great importance, and it is pleasing to record the use during the 1935-36 season of a greater quantity of both artificial fertilizers and lime when compared with the previous season. Definite information available regarding artificial fertilizers and lime is with respect to deliveries made at officered railway-stations throughout the Dominion. These figures, of course, do not allow for the whole of those two commodities used, as no record is on hand with respect to fertilizers and lime delivered apart from the railways. However, they do give a fair indication of the extent to which they are used, and so far as artificial fertilizers are concerned the amount delivered to officered railway-stations for 1935-36 shows an increase over the corresponding amount for 1934-35 of slightly over 38,000 tons. With respect to the deliveries of lime, the amount delivered in 1935-36 was only 1,000 tons or so ahead of that for 1934-35, but for both years an increase is shown of over 50,000 tons for any previous season.

The national wealth of the country is so bound up with its primary products that the increase in the amount of artificial fertilizer being used is a most pleasing feature.