

recommendations for the control of feed flavour being made. The following practices are now confidently recommended for improving cream-quality, including the reduction of feed flavour, and at the same time increasing production :—

- (1) Never hard-graze pastures for long periods, particularly in the winter and early spring. Hard grazing weakens the rye-grass and encourages white clover. Very lenient grazing in the winter and early spring, on the other hand, strengthens rye-grass by increasing its root system and weakens clovers by smothering. A system of long spells between rapid but lenient grazings should be adopted. The adoption of recommendations as above to some extent alter the normal winter feeding of stock, as winter spelling of pastures can only be successfully carried out by commencing feeding out before it really becomes necessary.
- (2) Another recommendation is to top-dress in April or May about four good pastures which have been adequately phosphated and limed with sulphate of ammonia at 1 cwt. or $1\frac{1}{2}$ cwt. per acre and lime at 3 cwt. per acre. These fields should be closed to stock and should be only lightly grazed in the late winter and early spring.
- (3) Avoidance of the use of "night paddocks" as far as possible should be adopted, because permanent "night paddocks" slow up the "phosphate-clover-stock-nitrogen-rye-grass" process.
- (4) In periods of strong feed flavour the most grassy pastures should be grazed during the day and those containing most clover during the night. In addition, cows should be kept off the clover pastures for about four hours prior to afternoon milking.
- (5) Where possible, good hay should be fed when feed flavour is prevalent.
- (6) At all times, but particularly in periods of strong feed flavour, attention should be paid to cleanliness and to the cooling of the cream.

PIG-FEEDING EXPERIMENTS.

Experiments have been conducted to ascertain the place of maize in wintering pigs on dairying farms, particularly in the Auckland Province. In this connection one particular experiment was conducted with nine pigs of the Tamworth-Berkshire cross with a mean live-weight of 65·8 lb. These animals were placed on a diet of $\frac{1}{2}$ gallon separated milk and 3 lb. of soaked maize per day on 12th May, 1936, and allowed the free run of a $\frac{1}{2}$ acre white-clover field, and in addition were given as many swedes as they would clean up. They were fed in this way until 29th July, when they had consumed 328 $\frac{1}{2}$ gallons of separated milk, 1,971 lb. of maize, and 2,704 lb. of roots, and had gained 73 lb. in live-weight. This indicates that for each 100 lb. of live-weight gained there was consumed 44 $\frac{1}{2}$ gallons of milk, 267 lb. of maize, and 361 $\frac{1}{2}$ lb. of swedes. These pigs were later fattened on skim-milk alone and produced first-grade carcasses.

Some preliminary investigations with later feeding of suckling pigs from about three weeks until weaning have given valuable information for further work during the coming season. This work will aim at testing the relative value of the supplementary foodstuffs commonly used by the pig-farmer. It promises to be work of considerable value as a source of information for pig-recording clubs and departmental officers, and should also provide a source of fundamental information by the examination of carcasses of young pigs fed rations differing widely in their composition and nutritional value.

LAND-UTILIZATION.

Largely because the farming outlook has changed rapidly in New Zealand as in a number of overseas countries, during recent years there has been an ever-increasing realization of the value of accurate information relative to agricultural conditions, trends, and possible modifications and adjustments. If desirable progress is to be made the reasons why changes are being made or should be made must be understood not only by farmers, but by business men and by others interested in agriculture in its relation to the national welfare. Further, the growing complexity of social and economic forces affecting farmers makes a knowledge of the present position and of prospective developments a matter of prime moment.

These facts underlie the increased attention which is being given to land-utilization studies in New Zealand. The major current work in this sphere is the survey of the economic structure and of the social services of Hawke's Bay. Both the urban and the rural communities of Hawke's Bay are interested in and are assisting in the work of the survey which is sponsored by an inter-departmental Land Utilization Committee. Considerable progress has been made during the year in that section of the survey which concerns itself with the agriculture or farm husbandry of Hawke's Bay. This agricultural survey aims to secure and interpret the facts that are available relative to such questions as crop husbandry, animal husbandry, farm income, farm-costs, farm organization, land-utilization, farm transport, and marketing.

The work has been divided into two main sections—farm practice and farm management—which, however, tend to merge into each other, so that at times it is difficult to say whether a matter is one of farm practice or of farm management.

Though the agricultural survey is far from complete, certain important facts have already emerged relative to the farming of Central Hawke's Bay under normal price-level circumstances. Among these are :—

- (1) The production of many of the present dominantly fat-stock-production farms profitably can be increased substantially.
- (2) In many instances farms which at present produce both fat stock and store stock profitably could be devoted to fat-stock production.