

The chief value of the work done so far is that actual facts are beginning to replace opinions. Whereas in the past the Dominion's pig population was thought good, bad, or indifferent, in accordance with different viewpoints, enough information has now been collected to say with certainty that the sow population is of a low-producing type, of which only 28 per cent. had satisfactory litters in the areas tested in 1928-29. Improvement is rapidly made under a system of recording, and this year just 50 per cent. of litters weighed reached the satisfactory standard. Pedigree breeders who are entirely responsible for the standard of excellence of purebred stock are mainly responsible for the quality of crossbred stock also. Their methods have resulted in stock of mediocre producing-capacity. By keeping records of production very marked and immediate progress can be made, and it must be very strongly urged upon stud breeders to incorporate performance in every pedigree, if pedigrees are to have any real value at all. The information that is the best indicator of producing-capacity is the weight of litter produced.

Although good pigs are an ultimate necessity, it is of little use having good pigs where management is poor. Few farmers could say whether their management was good or bad, and most would reasonably attribute non-success to high prices of bought feeds or low prices for pork. It is only by collecting and distributing the returns from different farms that it is possible to make comparisons between the returns of various farmers. If the methods of the best farmers could be universally adopted a marked increase in the profits of pig-raising would result. In the Waikato, in 1928, returns with pigs from skim-milk ranged from £2 up to £5 per cow. Finally, although it has long been recognized that grain is necessary in the milk districts, neither farmers nor grain-merchants have so far succeeded in providing a supply at sufficiently low prices to allow the use of grain profitably. Pig-meals are displayed at prices that make their use unprofitable. Information collected to date seems to definitely establish the fact that when pork is 6d. per pound farmers cannot afford to pay more than £12 per ton for peas or maize, £11 for barley, and £10 for pollard to feed to fattening pigs. For every 1d. reduction in the price of pork a reduction of £2 per ton is required in the price of feeds to allow of their profitable use. When used with sows and litters, grains can be fed profitably at present prices. No one who advocates the feeding of grain has been able to supply grain sufficiently cheaply to make its use economical, but as a result of a few feeding trials it would appear that meat and bone meals at present prices can be used profitably with porkers, and with sows and litters. With the latter, meat-meal has produced the most economical gains of all the concentrates used. If further trials support this point of view a very definite step in the solution of the feed question will have been made.

Definite information that must gradually displace opinions is being collected on these three main aspects of pig-production, and on others of lesser importance, such as the influence of breed of boar and sow on litter-weights, the influence of numbers per litter on litter-weights, the influence of feeding on litter-weights. Results this year so far show, by comparison with the previous year, a general marked improvement in litter-weights at eight weeks of age, due usually to better feeding and care on the part of the owner. Other aspects of pig-production that are being explored are the costs and returns that are obtained on different farms and the conditions under which high returns are obtained. A full report on 1929-30 season's work will be available when all the collected information is examined.

#### PORK AND BACON RESEARCH.

Since the interest in the adoption of new cures and processes, as used abroad, has to a large extent subsided owing to the non-enforcement of the regulations made by the Department of Health prohibiting the use of boric acid in bacon, the work of this section has been mainly connected with a lengthy investigation of "taint" in New Zealand pork.

The experiments, which are now nearly complete, were made on three series of pigs, given basic feeds of (1) buttermilk (Waikato), (2) barley (Canterbury), and (3) whey (Palmerston North). Each series has been divided into groups, and a foodstuff suspected of causing "fishy" (or "reasty") taint has been included in the diet for each experimental group. The curing-properties of a side from each pig, cured immediately after killing, have been carefully examined for the nature of the fat, and particularly for the presence of any signs of "taint." The other sides have been frozen for two to three months, examined, cured, and again examined.

The results are the subject of a detailed report, but, briefly stated, these show that the various oily and other meals derived from animal and fish offals would appear to predispose the carcass to taint when fed with buttermilk or whey, but probably not so when fed with a concentrate, such as barley.

Another series of experiments was made upon the freezing-properties of New Zealand milk-cured bacon. A side, roll, and ham were fairly successfully held for three months when given one week's initial sharp freezing at a temperature of 5° F. and then held at the usual meat-storage temperature of 12°-14° F. The results are fully reported in the *New Zealand Journal of Science and Technology*, Vol. 12, No. 1.

Occasional inquiries have been answered, the usual circular letters forwarded to bacon-curers, some analyses of hams for penetration of the cure, and advice given in reference to the nitrite cure, and hypochlorite disinfection of factories have been other small services given to members of the trade.

#### WOOL RESEARCH.

Advisory Committee: Dr. C. J. Reakes (Chairman), Mr. W. Perry, Professor G. S. Peren, Professor R. E. Alexander, Mr. E. Short, Dr. Dry, Mr. Q. Donald, Mr. A. H. Cockayne.

Wool investigatory work in New Zealand has been apportioned between Massey Agricultural College and Canterbury Agricultural College along the following lines:—

Massey:—

- (1) Breeding experiments to ascertain the degree of wool-character inheritance occurring in the Romney Marsh breed.
- (2) Detailed studies of fibre-development, particularly those relating to medullation, thickened tip, and hairiness.
- (3) Chemical examination of wool grease and yolk, with especial reference to fibre-nutrition.