Pig research projects for W.A

W J O Wilkie

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The Medina Pig Research Unit now being developed by the Department of Agriculture will be an important addition to pig research facilities in Australia. The primary function of the unit will be to serve the needs of the pig industry in Western Australia.

In this article, Animal Husbandry Officer W. J. Wilkie, B.V.Sc., discusses some aspects of research to be carried out.

The new pig research unit at Medina is being established on a 95 acre property, part of which has also been set aside for a vegetable research unit.

Forty acres have been allocated for the establishment of the pig unit and a pattern of clearing the area has retained a typically West Australian outlook.

Work at the station will concentrate at first on applied research, but it will be equipped to carry out fundamental research if the need arises.

**Production Costs**

Production costs in the pig industry are a constant battle for producers. There are many problems which affect costs and these are what early work and research at the station will be aimed at finding answers to.

Pig production costs can be considered under several headings, each of which adds its quota of cost input.

A producer may breed and fatten his own pigs, he may breed and sell store pigs or he may buy store pigs to fatten for market.

This leads to a division of the industry into two main categories.

- Production of pigs for breeding and fattening, and
- Fattening, with either breeding or fattening or both being carried out on the one farm.

Closely tied in with each of these is the consideration of breeding, feeding and management. Here breeding is used in the sense of breed quality and the effort which goes into the selection of dam and sire.

Feeding research covers all aspects of the selection, either by purchase or home production of feeds and their storage, mixing and supply to the pigs. Management means the provision and use of housing and labour.

In a unit where pigs are bred, everything is related to the number and value of the pigs produced. The main points here are boar and sow costs.

**Boar Costs**

An expensive boar for too few sows means a high boar cost for every weaner produced. On the other hand an unsound investment in a boar means a lower value in every pig produced.

Boar costs will be investigated at the station and will include—

1. **Economy of Feeding.**—Many boars are ruined by being too heavily fed on grain. They become fat and poor workers.

2. **Efficiency of Feeding.**—This means feeding at the correct level for perfect boar health over a period of several years.
(3) Value of Boar Progeny.—Used to determine superior merit in the boar. This is well illustrated by the stockman’s phrase “superior blood line” and is proven by the performance of the progeny.

Some interesting developments are now taking place in this field. More work is being done on the physiology and biochemistry of breeding stock to try and find pointers to superior merit. An interesting possibility is the production of “split litters” using artificial breeding. After the litter is born the sire of each of the pigs can be identified by blood grouping. The performance of the two sires can be compared with greater accuracy as the pigs will have had identical maternal environment before birth. This is important because a pig is about 114 days old at birth, which is a large part of the life of a porker.

Sow Costs
The second part of production costs comes under sow costs, which are assessed according to the number of healthy, vigorous pigs produced by the sow each year. Research into sow costs must cover breed, feed and management. Special attention is currently being given to economy in feeding. The production potential of a great number of sows in Australia has been ruined by faulty feeding, especially in the hot-weather season.

Rearing and Fattening
There are still many problems yet to be solved in the field of rearing young pigs once they have been bred, and in fattening them for market. Besides this there is the question of their suitability for modern markets.

Local Problems
Western Australia is like any other pig raising area in that four out of five of the problems we seek to answer are concerned with pig feeding. Other problems are management in our environment and the disease position. Before much progress can be made we must solve the problems due to circumstances peculiar to the industry in W.A.
DISEASE

Pig production has for many years been seriously hampered by several insidious and costly diseases.

The disease story is superimposed on every phase of pig research and this has made the results of much of the nutrition and genetic research of doubtful value.

Minimal Disease Pigs

With this in mind the approach to research will be to establish a minimal disease piggery which will be kept in strict quarantine. The surgery and sterile rearing rooms are already in the advanced stages of planning.

The requirements of a minimal disease unit are facilities where pigs can be surgically delivered by special methods so that they never come into contact with the dam or her environment.

The pigs are delivered a few days before full term and then reared individually in special cribs for one week. During this time they are protected from each other and from the human staff. These pigs will not be germ-free but will be fully protected from disease-causing germs.

When the piglets are seven or eight days old they will be reassembled in their own litters in special indoor rearing pens till they are three to four weeks old, when they will be moved to "hardening pens."

The production of minimal disease pigs is an expensive procedure, but W.A. workers are studying overseas experience, results and developments. When placed under commercial conditions pigs produced in this way have outperformed the herds from which they came.
Examples of the improvement in performances of these pigs have been more than a $\frac{1}{2}$ lb. increase in daily weight gain and 100 lb. of feed saved for every 100 lb. weight gain. The expense of the technique will soon be met if gains such as these can be passed on to the industry.

This is the first aim of the research programme.

Minimal disease pigs are also a valuable aid in the study of some pig diseases. These pigs make ideal hosts for the transmission of virus diseases, making it possible to study the effects of specific diseases without the presence of other disease complications. This technique has also recently been extended to the study of viruses affecting humans.

The nutrition research building at the station will aim to provide an environment for the experimental pigs that will be as close as possible to that found in W.A. piggeries, and as uniform as possible throughout the building. Plans provide for fly-proofing, cooling, sewage disposal and rodent control. These aspects of the design will be of great interest to commercial pig producers.

The Medina Pig Research Unit will undoubtedly prove of great value to W.A. producers. It should lead to more efficient production and lift the general standards of the industry.
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