EFFICIENCY AND LIVESTOCK IMPROVEMENT

THE PIG INDUSTRY

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The Pig Industry is a lucky industry for many reasons.

We do not rely directly on exports and the vagaries of currency or politics for our survival.

The general public, despite our attempts to convince them otherwise in the past, regard our product as a luxury item. The animal cuts into a wide variety of saleable pieces all of which have the same flavour-texture appeal.

Our investments are protected to a large degree from the uncertainties of the weather.

We are working with a most adaptable animal that is capable of living in a wide variety of conditions and can grow and reproduce successfully on a wide variety of foods.

The sow is capable of giving birth to large litters of up to 20 piglets and can perform that feat every one hundred and forty days or so. The boar is capable of attending to the needs of 30 sows if mated naturally, producing up to 600 saleable pigs per year or 36,000 saleable piglets per year if used artificially.

The large numbers and the ability to live under intensive housing conditions are the obvious advantages the pig has over his four-legged competitors from an animal breeding point of view. There are now many herds in Australia with greater than 35,000 potential breeders to choose from each year. The influence of these very large herds is yet to be seen but there is no doubt that they hold the greatest potential for change that we have seen in the industry since the intensive housing of animals began 30 years ago.

Use of computer or card-based record systems is widespread. Every piglet born in these herds is individually ear marked so that its career can be traced from birth to the weigh scale after slaughter. If it has become a breeder, then its breeding performance is also recorded. A sample of the information available to me on any pig on either of our farms would include the following.

Litters:

- Average birth weight.
- Number in litter by sex.
- Number of pre-natal deaths and comment.
- Number of post-natal deaths and comment.
- Weaned, age and weight.
- Slaughter, age, weight and fat cover (P2).
- Units of feed per unit of gain.
- Dressing percentage.

Sow: Age, weight at first mating.
Farrowing interval.
Litter history as above.

Boar: Frequency of mating.
Mating data (returns).
Litter history as above.
Individual record of Average Daily Gain, Food Conversion Ratio and Fat Cover from performance test.

Collated figures on all these aspects and many combinations and permutations are available across the whole herd as well.

All this data simply demonstrates that the modern large piggery because of its special technology and rapid generation turnover, has an enormous potential for genetic improvement.

While a great deal has been done towards improving the meat producing potential of the animal, little has been done to increase its reproductive potential. Perhaps the reverse is true.

Increased growth has led to a reduction in the average age at first mating with animals as young as 24 weeks commonly being presented. In combination with reduced fat cover, this has contributed to a large degree to what is called "the thin sow syndrome" becoming widely recognised as a major problem in the first-weaned sow group. Some sows show an inability to maintain body weight during lactation and continue to demonstrate that inability in the following gestation. A significant number of sows are culled each year because of this long time before their normal reproductive life is at an end.

There is also increasing evidence of stress related problems. Increased lean content in growing pigs has produced in some animals, a symptom known as P.S.E. (pale soft exudative) which causes curing problems for processors and presentation problems for butchers. The other common problem, known as P.S.S. (porcine stress syndrome) causes heart failure during handling.

Better record keeping has demonstrated that some litters are more affected by scouring than others. Is this an immunity problem in the sow, a problem of passing on that immunity to her piglets, or a problem of increased susceptibility?

Perhaps these are a few of the limits we are currently noting which could be important in the future. There are others.

In 1968 when I returned from a tour of the United Kingdom, I gaily informed a group of stud breeders at a Society Dinner that if they did not adopt performance testing they would be out of business in 10 years. My timing was wrong and my reception was cool, but few of them remain in the breeding business.

The statistics for Australian pig herds in recent times shows 43,000 farms with pigs in 1966 and 18,000 in 1981. This shows an annual reduction of approximately 6%. Pig numbers have changed little over that period, except for a small hic-cup in the early seventies.

In 1970 there were 975 stud herds in Australia. By 1980 there were 410. Of the 410 remaining, only 310 actually registered any pigs even for their own use. It is not difficult to speculate that, of these, considering their average size and the geography of the country, only a handful actually influenced the Australian pig population to any degree. There is no doubt in my mind that this trend will continue. Few, if any of the present studs will see the 1990's because their place will be taken by the more progressive commercial enterprises which will supply breeding stock as a sideline. This will be particularly noticeable with those companies who supply stockfeed or purchase carcases. They will be able to exert enormous pressure on the smaller herd which will tend to become dependent on them for all services. These smaller herds will continue to prosper because it will be in the interest of the companies to see that they do.

The politics of the industry will severely limit the movement of breeding stock between the large enterprises which will tend to depend on their own improvement programs with occasional injections of material from overseas.

The importation of breeding stock deserves mention because of the facilities at Cocos and the possibility of ovum transplants and improved semen storage and transportation. Previous importations have had little affect on the industry because of the quality of the animals and the way in which they were exploited. Future importations will certainly be better utilised and will attract the value their performance dictates, rather than their value as side show freaks. If only we could be sure of excluding all disease risk during importation.

As I said earlier, the pig is a most adaptable animal. Over many years we have taken advantage of that adaptability to increase stocking densities. This has led to improved herd performance largely through better supervision. However, there is a strong move to encourage governments in Australia to legislate on the way animals can be housed and the management techniques involved. This is likely to be successful with government agencies becoming more involved in housing design approvals. While this effort is largely aimed at the "Multi-National Factory Farms", if it succeeds, it will effectively close down all the small breeders who do not have the resources to cope with the change. I suppose the real argument lies in whether the animal we have carefully designed to cope with the physical requirements for stalls and farrowing crates, has the capacity to cope psychologically with these conditions. An even greater problem will be to convince those with no knowledge of animals just what is fact and what is emotional nonsense.

Seventy-five percent of our costs are accounted for by food purchases. It is natural therefore, that pork producers take a great deal of interest in the foods that are available and their cost per unit of gain. While the work to improve the efficiency of conversion should continue, producers will have to take a greater interest in the activities of plant breeders. It is obvious that appetite becomes a limiting factor to growth rate. It is important therefore that pig breeders make known to the plant breeders the difficulties caused by tannin, alkaloids and susceptibility to aflotoxin for example. It is impossible for the industry to continue making improvements if it attempts to do it in isolation.

There is no doubt that pork is an attractive and versatile food. The industry is quite capable of producing it in large quantities with uniform quality. Present trends in the industry will ensure that pork will double its consumption rate in the next 15 years.