Several alternative methods are available to the pig producer of administering iron to pigs to prevent anaemia. These include self-help systems and dosage either orally or parenterally. Some of these alternative systems were evaluated in a controlled experiment.

A further experiment was carried out to evaluate the effects of dosage level (100 or 200 mg iron) and intramuscular injection (3 or 7 days of age).

Experiment 1

The following methods of administering iron to pigs were evaluated:

1. Control (no supplementary iron).
2. Panax System. This is a self-help system developed in Norway (Foster, Koller A/S). The concentrated ferrous liquid is an antacid electrolyte solution containing iron in readily available form (as iron gluconate). A 4 per cent solution of concentrated ferrous liquid is made up by adding water. This diluted solution is held in a 5 litre plastic container from which a polythene delivery pipe carries the liquid to a stainless steel drinking bowl activated by the pigs. This dispenser was placed adjacent to the creep area and target pigs were selected for administration of the iron by the Panax system.

On Day 1 of life:
4. 2 ml of Ferrofax Oral Iron Iron Gallon (100 mg Fe/ml; C. Vet Ltd.) was given orally on Day 1 of life.
5. 2 ml of Ferrofax Injectable Iron Iron Gallon (100 mg Fe/ml; C. Vet Ltd.) was given by intramuscular injection into the hind leg on Day 1 of life.
6. 2 ml of Ferrofax Injectable Iron injected into the hind leg on Day 1 of life.

A mixing of 1 litre per treatment was involved and an equivalent number of control litters receiving no supplementary iron were also evaluated. Thus, a total of 102 litters were involved in the experiment. Litters were reared between 14 and 21 days of age (mean 17 days). Individual pig weights were recorded at birth, 4 and 6 weeks of age, while blood samples were taken for hematological examination at 10 days and 4 weeks of age.

For treatments 1 to 6 above, mean number of pigs at the start was 6.68, 6.35, 6.44, 6.30, 6.60 and 6.50 respectively. Mean days per treatment were 0.48, 0.47, 0.39, 0.59, 0.38 and 0.18 for treatments 1 to 6 respectively. These means were not significantly different from each other.

Mean piglet daily weight gain (g) to 6 weeks of age was 187.9, 185.5, 177.8, 184.8, 179.0 and 186.4 for treatments 1 to 6 respectively. While differences between iron treatments were not significant, weight gain of control pigs was significantly lower (P<0.05) than that of pigs receiving iron supplementation. Hemoglobin level (g/dl) for a week of age was 9.04, 10.74, 11.74, 9.85 and 10.78 respectively for treatments 1 to 6, control pig having significantly lower level than pigs from any of the iron supplemented treatments.

Thus, there were no significant differences between the various iron treatments.

Experiment 2

The effects of either 100 or 200 ml of Lodox (Iron supplement, 10 mg Fe per ml; Lox Laboratories Ltd.) given by intramuscular injection at either 3 or 7 days of age were evaluated in an experiment with 20 litters per treatment. The work was carried out on a commercial farm in the north of England, which normal pig stock was kept for a period of 4 weeks. For treatments A (3 days; 200 ml), B (3 days; 100 ml), C (7 days; 200 ml) and D (7 days; 100 ml) mortality to 6 weeks of age was 14.7, 11.1, 10.8 and 10.2 per cent respectively, mean piglet gain to 6 weeks (kg) was 9.04, 9.09, 8.87 and 9.20 respectively while haemoglobin level at 14 days (g/dl) was 10.74, 10.50, 10.54 and 10.05 respectively. None of the differences between treatments were statistically significant.

Discussion

Alternative systems of administering iron have been developed to facilitate pig management in different situations. Oral dosing and injection soon after birth were developed to make it possible to administer iron at this stage when the piglet was being handled in any case for its rearing, weaning and transport. The self-help Panax system was developed to avoid the need for handling the pig to administer iron. This latter system incorporates an acidified solution of electrolytes along with iron and has the potential for alleviating side effects such as tachyCARDIA.

Significant differences in piglet mortality, growth to 6 weeks of age or in haemoglobin level at 4 weeks were reported among the methods evaluated. All methods appeared to be effective in preventing piglet anaemia. Thus, the treatment selected for use in practice should be based on the ease of administration, its cost and on the personal preferences of the producer and his staff.

Selected References

Farming Press Ltd, Ipswich, Suffolk.