Piglets need extra supplies of iron to promote faster pre-weaning growth, but the product used must be easily assimilated and in form that the piglet can readily use. New comparative trials claim to show a relaunched, newly formulated injection with gleptoferron improves performance and allowed the pigs to express their genetic potential more readily.

Stop piglets becoming anaemic

LET THEM GET IRON QUICKLY

At birth, the newborn piglet has very low reserves of iron which it can use to make haemoglobin to form new red blood cells to carry oxygen around the body, as well as being involved in other essential body constituents.

Unless the piglet is provided with extra supplies of iron that it can readily utilise for these purposes, it will become anaemic and unthrifty.

This early supply of iron must be sufficient to meet the piglet's physiological needs for this mineral until it begins to ingest iron in its feed.

Therefore, the product used to supply the iron must be easily assimilated by the pig and in a form that it can readily use as it grows.

Traditionally, iron has been supplied to the piglet as an injection shortly after birth, although in recent years other types of products have been developed, including pastes and other oral products.

However, the injectable products have generally proved superior in providing the iron needed by the pig and they are said to hold a major share of the market.

Of the injectable products available, the iron dextran type has proved successful for many years.

But, when Gleptosil was relaunched by Alstoe Animal Health Ltd in 1996, it claimed that the new formulation, containing 20 per cent gleptoferron, would give improved piglet performance, compared with 20 per cent iron dextrans.

Trials

Now, trials carried out by Newsham Hybrid Pigs have confirmed that piglets survive better and grow quicker pre-weaning when injected with Gleptosil.

Previously, Newsham had used an iron dextran preparation on their breeding units, but decided to run a comparative trial on two of their sites when Gleptosil became available last year.

The study was carried out on Newsham's Penhowe and Pastures breeding farms, one being of high health and the other normal health status.

Alternate litters born on each farm were injected within 24 hours of birth with 1ml of the two products in rotation to supply 200mg of iron.

Each replicate was weighed at birth and again at weaning and a record kept of all pigs dying in the pre-weaning period.

A total of 1,843 piglets from 193 litters were involved in the trial. Of these, 990 piglets from 100 litters were born on the high health status farm and 853 piglets in 93 litters on the normal health unit. All progeny were pure bred.

Combined farm data (Table 1) showed that piglets injected with the Gleptosil had a birth to weaning mortality of 14.2 per cent, compared with 15.6 per cent for the iron dextran product.

Weaning age

Average daily liveweight gain, at 219 grammes per day, was 6.3 per cent higher in those pigs receiving Gleptosil, compared with 206 grammes a day for those piglets injected with the other product. Average weaning age on both treatments across both farms was 23.5 days.

On the high health unit, the differential between the two products in terms of mortality was narrower, at 0.7 per cent, reflecting the overall improved health of the pigs.

However, daily liveweight gain before weaning was much higher for the pigs treated with the gleptoferron product than the combined data had shown.

On this unit, the Gleptosil-injected piglets grew at the rate of 249 grammes per day, compared with 230 grammes a day for those piglets injected with the iron dextran (see Table 2)

Comparison of the data (Table 3) between the high health and normal health units showed that piglets born on the high health units survived better (by two per cent), while the daily liveweight gain was 33 per cent higher (240 grammes a day pre-weaning, compared with 180 grammes a day in the normal health herd).

Even on the normal health unit, there was a significant improvement in piglet performance when they received gleptoferron (Table 4).

On that unit, mortality was 2.2 percent-

TABLE 1
Combined farm results: Birth to weaning mortality comparisons.

Mortality	Gleptosil	Iron dextran	Weight gain	Gleptosil	Iron dextran
No of litters	96	97	No of piglets	794	724
No piglets at birth	925	918	Mean birth weight (kg)	1.55	1.51
No of piglets weaned	794	725	Birth to weaning gain (kg)	6.77	6.69
Birth to weaning mortality (%)	14.4	15.6	Average weaning age (days)	23.5	23.5
Birth to weaning daily gain (grammes)	219	206			
Mortality - 1.4% benefit to Gleptosil					
Liveweight - 7.1% benefit to Gleptosil		(p<0.02)			
Daily liveweight gain - 6.3% to Gleptosil		(p<0.02)			

Daily liveweight gain much higher

TABLE 2
Growth rates on the high health unit.

Mortality	Gleptosil	Iron dextran
No of litters	50	50
No piglets at birth	507	483
No of piglets weaned	438	414
Birth to weaning mortality (%)	13.6	14.3
Weight gain		
Number of piglets	438	413
Mean birth weight (kg)	1.58	1.53
Birth to weaning gain (kg)	6.35	5.82
Average weaning age (days)	25.5	25.4
Birth to weaning daily gain (grammes)	249	230
Mortality - 0.7% benefit to Gleptosil		
Liveweight gain - 9.2% benefit to Gleptosil (p<0.001)		
Daily liveweight gain - 8.3% benefit to Gleptosil (p<0.01)		

TABLE 3
Comparing data between high health and normal health units.

Mortality	High	Normal
No of litters	100	93
No of piglets born	990	853
No of piglets weaned	852	717
Birth to weaning mortality (%)	13.9	15.9
Weight gain		
Number of piglets	851*	717
Mean birth weight (kg)	1.55	1.51
Birth to weaning daily gain (grammes)	240	180
(*One weaned piglet birth weight not recorded)		
Mortality - 2% benefit to high health		
Birth weight - 2.6% benefit to high health (p<0.05)		
Daily liveweight gain - 33% benefit to high health (p<0.001)		

TABLE 4
Results on normal health unit.

Mortality	Gleptosil	Iron dextran
No of litters	46	47
No piglets born	418	435
No of piglets weaned	356	361
Birth to weaning mortality (%)	14.8	17.0

Weight gain	Gleptosil	Iron dextran
Number of piglets	356	361
Mean birth weight (kg)	1.52	1.49
Birth to weaning gain (kg)	5.34	5.29
Mean weaning weight (kg)	3.82	3.79
Average weaning age (days)	21	21.2
Birth to weaning daily gain (grammes)	182	178
Mortality - 2.2% benefit to Gleptosil		
Liveweight gain - 0.8% benefit to Gleptosil		
Daily liveweight gain - 2.2% benefit to Gleptosil		

age points better than for those piglets receiving the iron dextran.

Although daily liveweight gain was only four grammes a day better in the gleptoferron-treated group, this still represented a 2.2 per cent improvement.

With both units fed and managed in identical ways, the differences in results can only be attributed to the impact of the two iron preparations administered to the piglets.

All results, apart from that for mortality were statistically different. However, at least 5,000 piglets would have had to be trialled to give a result with statistical meaning for the mortality.

Potential

It is interesting to note that performance on the high health unit in terms of daily liveweight gain showed that the gleptoferron preparation allowed the pigs to express their genetic potential more readily than the iron dextran.

A high growth rate puts a high demand on iron requirements and the Gleptosil was demonstrated to make the full dose of 200mg of iron rapidly available to the piglet.

Though Newsham points out that Gleptosil demonstrated improved economic benefits over the iron dextran preparation of lower mortality and improved weight gain on both the high and normal health units, the company did not carry out a cost benefit analysis.

In its situation, the pigs were being taken on for selecting as breeding stock, rather than moving into the commercial growing and finishing sections.

However, as the gleptoferron-treated pigs were growing faster pre-weaning, it would be fair to assume that this faster growth would have proved beneficial in the later growth stages, leading to such pigs reaching their slaughter weight earlier and more efficiently.

Economic benefits

Therefore, the economic benefits that this iron preparation provided before weaning would also have been extended into the growing and finishing stages.

That could be seen as helping the commercial producers to generate a greater margin.

According to John Nellis of Alstoe Animal Health, this trial confirms previous trial results with Gleptosil.

The overall results were good, especially those that were carried out on the high health unit, and they showed the benefits of using gleptoferron product in terms of their growth rates, compared with the results that were achieved in the trials on the normal health status unit.