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Pork CRC Research Summary

Project Number & Title:

2F-109 *Field evaluation of the benefits of fish oil dietary supplementation to multiparous sows fed during lactation and early pregnancy on fertility*

Principle Investigator:

Mr Rob Smits

Background:

One of the major causes of high sow turnover is due to low reproductive performance and reproductive failure. In project 2F102, we showed that by supplementing the diet fed during lactation and post-weaning with long-chain omega 3 fatty acids from fish oil embryo survival and litter size post-implantation was significantly increased in mature sow parities. The aim of this experiment was to assess the effect on reproductive performance when commercially housed multiparous sows were offered supplemented diets pre-mating, post-mating or both.

Methodology:

Conducted at Rivalea, Corowa, during winter and spring, 1216 commercial sows ranging in parity from weaned parity 1-7 were fed a lactation diet either with 3 g/kg fish oil or an unsupplemented control diet during 20 day lactation and post-weaning up to mating. 860 of these sows were then used in a 2 x 2 factorial design and fed either an unsupplemented control gestation diet or a supplemented (6 g/kg) gestation diet with fish oil for 28 days in early pregnancy. Fish oil replaced tallow. The incidence of post-weaning oestrus, farrowing rate and subsequent litter size was recorded.

Key Findings/Conclusions:

The subsequent litter size was significantly increased (12.6 vs. 11.7 total born; $P < 0.05$) in those sows fed the fish oil supplemented diets through lactation, post-weaning and early pregnancy compared to sows fed unsupplemented diets. Diets fed either during lactation and post-weaning, or during early pregnancy alone produced intermediate results. The response was more pronounced in older parity sows (weaned parity 4-7). There were no effects of supplementation on the resumption of oestrus and sow retention to remating. Farrowing rate was similar between treatments (83.1%). Feeding diets supplemented with fish oil is a strategy that could improve declining productivity from the ageing sow herd.

Potential Users of Information (including value assessment):

Nutritionists, feed formulators, pig producers. It is calculated that the improvement of 1.6 pigs /sow/year and a reduction in sow culling rates will save \$0.06/kg to COP.