



Established and supported under the Australian Government's Cooperative Research Centres Program



Pork CRC Research Summary

Project Number & Title:

2C-108 - The use of nucleotides, functional amino acids and vitamins to stimulate feed intake, enhance GIT

Principle Investigator:

Dr K Moore

Background:

The growth check that many piglets experience after weaning is sufficient to influence growth through to slaughter, which can have a detrimental impact on profitability. Sow's milk contains a number of different components and some of these can be described as growth factors because they do more than supply nutrients, but may be important for helping reduce the various stressors experienced at weaning. If we can identify those that play a role, then fortification of weaner diets with these components could help reduce the growth check after weaning. This experiment aimed to examine the effect of the addition of nucleotides, inositol or glutamate, either individually or in combination, to weaner diets on gut development, immune function and lifetime pig performance.

Methodology:

Ninety Large White x Landrace x Duroc surgically castrated male pigs were used in a completely randomized block experiment. The experimental treatments were:

1. Control: Standard weaner 1/weaner 2 diet
2. Inositol: Standard weaner 1/weaner 2 diet + inositol
3. Glutamate: Standard weaner 1/weaner 2 diet + glutamate
4. Nucleotides: Standard weaner 1/weaner 2 diet + nucleotides
5. Combined: Standard weaner 1/weaner 2 diet + inositol + glutamate + nucleotides

Key measures included growth performance, gut histology and acute phase proteins.

Key Findings/Conclusions:

- No difference in growth performance between treatments was found in this study. However, there were beneficial effects of feeding the combined diet on feed to gain in the first three weeks post-weaning, gut histology and immune function.
- The near optimum conditions of the facility in which the study was conducted may have reduced the stressors the pigs were subjected to and so impacted on the outcome. It is recommended that wherever possible more sensitive measures of pig performance should be used rather than relying solely on growth performance measures.
- Under commercial conditions it is thought that the inclusion of a product containing inositol, glutamate and nucleotides would be optimal.

Potential Users of Information (including value assessment):

Producers, nutritionists

