



Australasian Pork Research Institute Ltd **APRIL**

PROJECT SUMMARY

Project Number and Title: 7C-006 *Easing the weaning transition: pellet form and size to reduce the post-weaning growth check*

Project Leader: Dr Kate Plush, SunPork Group.

Project Participants: Robert Hewitt, Jessica Zemitis (SunPork), Robert Parkes (Ridley Agriproducts Pty Ltd).

Aims and Objectives: This project seeks to confirm the findings of the previous study (APRIL 6A-103, Easing the transition: large piglets from large pellets) in a commercial setting with an older weaning age (~26 days), testing the primary hypothesis that piglets that receive semi-moist large (diameter) pellets will have an increased body weight at day 28 following weaning, and secondly, that piglets receiving the semi-moist large pellet will have an improved growth performance in the first week after weaning.

Key Findings: Unlike the previous study (6A-103) where the shorter lactation length restricted the ability of creep feeding to influence post-weaning performance, this project was able to show that using a large diameter pellet in a managed creep feeding program was able to positively influence post-weaning growth. There was no difference in average daily gain from the start of creep feeding at day 8 of lactation through to day 21. However, from day 21 until weaning at day 26, piglets receiving the standard creep feed grew significantly faster than those fed semi-moist pellets.

Average daily gain in the first 9 days after weaning was significantly affected by both pellet size and creep feed presentation. Piglets that received the large pellet in both lactation and as a transition feed at the start of the nursey phase grew faster than those receiving the small pellet (127 vs 96 g/d, $P < 0.001$), whilst those piglets receiving the standard creep diet grew faster than those receiving the semi-moist feed (135 vs 88 g/d, $P < 0.001$). These treatment differences were additive, with the large-standard diet treatment growing at 160 g/d in the first 9 days after weaning, compared to the small SMEC-fed piglets growing at 82 g/d ($P = 0.002$).

Applications to Industry: This project showed that using a large diameter pellet in a managed creep feeding program positively influenced post-weaning growth, adding further support to previous studies where lactation lengths were greater than 25 days. Although this study was likely under-powered for determining differences between treatments in piglet removals, a larger percentage of pigs receiving the small pellets failed to exit the nursery, consistent with previous findings.

Behavioural observations in this study support the exploratory behaviour data that were observed in the previous study. The destructible nature of the pellets that deliver nutritional value to the pig means they are a more relevant form of enrichment than indestructible, inedible objects, and their ability to be picked up and carried is more likely to stimulate object play. Moreover, larger diameter pellets have advantages over more traditional sources of enrichment such as straw, that are less compatible with slatted floors and liquid effluent systems.

A limiting factor on the application of this research is the willingness of feed mills to change to larger diameter dies for the smaller volumes of creep feed required, and the inclusion of shorter shelf-life raw materials such as milk powders means large production runs and subsequent storage is likely problematic. There are mills that currently produce larger diameter pellets for extensive pig production operations; however, the availability of raw materials and the ability to bag feed to extend shelf-life are some of the issues that likely require further work before commercialisation.