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**FACTORS INFLUENCING THE APPARENT
FAECAL DIGESTIBILITY OF ENERGY AND
ORGANIC MATTER IN WHEAT AND WHEAT
BY-PRODUCTS (BRAN AND BROLL) FOR
THE GROWING PIG**

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New Zealand**

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ABSTRACT

The effect of several factors on the determination of the apparent faecal digestibility of dietary energy (ADE) and dietary organic matter (ADOM) for the growing pig was studied. The work was conducted in three parts.

In the first part of the overall study, the effects of collection method (total faeces collection versus chromic oxide as a marker) and duration of the faeces collection period were examined. Thirty kg liveweight pigs were subjected to a conventional balance study (7 days adaptation, 12 days faeces collection) and were for either a wheat- or wheat by-product- (broll/bran) based diet. ADE and ADOM were higher ($P < 0.001$) for the wheat diet in comparison to the wheat by-product based diet and in general higher ($P < 0.001$) ADE and ADOM values were found with total collection versus the marker. There was a significant ($P < 0.001$) effect of duration of the collection period. Chromium recovery (%) increased, for both diets, over the first 3 to 4 days of the collection period, but thereafter was relatively constant.

The aim of the second part of the study was to determine the influence of the two factors, feeding level (6 or 11% of metabolic liveweight) and liveweight (25 or 90 kg), on ADE and ADOM in the two cereal based diets. Growing pigs were subjected to a conventional balance study and digestibility coefficients were calculated by reference to the indigestible marker, chromic oxide. There were no significant ($P > 0.05$) effect of feeding level but a significant ($P < 0.05$) though relatively small effect of animal liveweight, with digestibility being somewhat higher for the heavier pigs.

The third part of the overall study evaluated the effect of genotype on ADE and ADOM for the two cereal based diets. Four-month-old Large White x Landrace pigs,

(55 kg liveweight) and three-month-old Kune-Kune pigs (20 kg liveweight) were subjected to a conventional balance study with ADE and ADOM being determined based on a total collection of faeces. When for the wheat by-product based diet the Kune-Kune pigs showed a higher ($P < 0.001$) digestibility of nutrients, no statistically significant difference between genotypes was found for the more digestible wheat based diet.

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