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## Effects of Probiotics on the Utilisation of Fiber Feedstuffs by Weaner Pigs in the Humid Tropics

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### Abstract

This study was carried out for 70 days to investigate the effects of probiotics on the utilisation of three fiber feedstuffs (Brewers' dried grain (BDG), Wheat Offal (WO) and Palm Kernel Cake (PKC) by weaner pigs for growth, apparent nutrient digestibility and economics of production.

Eighteen weaner pigs (Large White × Hampshire) of average weight of  $6.17 \pm 0.44$  kg were randomly distributed into 6 experimental diets of 3 animals per diet with each animal serving as a replicate. Diets 1, 3 and 5 contained 25 % each of BDG, WO and PKC respectively while a commercial probiotics (Re3) was added at recommended rate of  $2.5 \text{mlkg}^{-1}$  of feed into diets 2, 4 and 6 which had the same formulation as 1, 3 and 5. The bacteria and fungi in the probiotics include *Lactobacillus* spp., *Bacillus* spp. and *Saccharomyces* spp. The fixed ingredients which constituted 75 % in each of the 6 experimental diets in this study were made up of 45 % maize, 15 % groundnut cake, 10 % soybean meal, 2 % fish meal, 2.25 % bone meal, 0.5 % salt and 0.25 % vitamins/minerals premix. The design was completely randomised design. The animals were fed 5 % of their body weight on daily basis and water was supplied ad libitum.

The result from growth performance showed an increase ( $p > 0.05$ ) in final weight and average daily gain of animals on PKC and BDG supplemented with probiotics while those on WO had a reduced final body weight and average daily gain. The average daily gain was lowest in diet 1 ( $160 \text{ g day}^{-1}$ ) and highest in diet 3 ( $238 \text{ g day}^{-1}$ ). The feed conversion ratio was best in WO based diet without probiotics (2.14). The apparent nutrient digestibility showed that probiotics had a significant ( $p > 0.05$ ) positive effect on the dry matter, crude protein, crude fiber, ash content and ether extract digestibility. The feed cost per kg gain was highest in diet 1 and lowest in diet 3.

In conclusion, the inclusion of probiotics had positive effects on PKC and BDG based diets on growth and apparent nutrient digestibility. Also the feed cost/kg gain was better with PKC and BDG based diets supplemented with probiotics.

**Keywords:** Apparent nutrient digestibility, economics of production, fiber feedstuffs, growth, probiotics, weaner pigs