

Digestibility and N-retention with alternative protein sources in diets

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Digestibility and N-retention in crossbred pigs of diets with water spinach or water spinach mixed with mulberry leaves as protein sources in basal diets of cassava root meal plus rice bran, or sugar palm syrup plus broken rice

Abstract

The aim of the study was to determine the digestibility and N retention in crossbred pigs fed water spinach or water spinach mixed with mulberry leaves, as protein sources in basal diets of cassava root meal (CR) plus rice bran (RB), or sugar palm syrup (SP) plus broken rice (BR). Eight castrated male crossbred pigs (Large White X Local breed) of average live weight 25 kg were used in the experiment. The design was a 2*2 factorial within duplicated 4*4 Latin squares with 12 days per period, 7 days for adaptation and 5 days for faeces and urine collection.

In the factorial analysis there were no significant interactions between energy and protein (leaves) sources in any of the measured traits. There were no differences due to source of energy for dry matter (DM) and crude protein (CP) intakes ($P>0.05$), but crude fibre (CF) intake was higher on the CRRB diet, reflecting the presence of the rice bran, which had a higher crude fibre content than all the other ingredients. Coefficients of apparent digestibility of DM, CP and CF were higher for the SPBR diets. The source of protein had no effect on either feed intake or apparent digestibility coefficients ($P>0.05$). However, when 50% of the water spinach was replaced by mulberry leaves, there were differences in N balance traits, with reduced N excretion in urine and higher N retention in absolute amounts and also in retained N as percentages of N intake and N digested. It is concluded that protein utilization efficiency is increased when the protein source is a mixture of water spinach and mulberry leaves rather than only water spinach.

Key words:

Chemical analysis, crude fibre, crude protein, dry matter, faeces, urine



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