Evaluation of Fibrous Feeds for Growing Pigs in Vietnam

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Effects of fibre level and source in the diet on the digestive physiology, growth performance and carcass traits of different genotypes of pig (Ninh Thi Len, Vietnam)

Abstract

The aim of this study was to evaluate the effects of fibre level and source in the diet on the digestive physiology, growth performance and carcass traits of different genotypes of pig, and the efficiency of supplementation of an exogenous enzyme mixture to fibrous diets for weaned piglets.

The first experiment showed that the coefficient of total tract apparent digestibility (CTTAD) of nutrients in the diet was negatively affected by fibre level. Irrespective of fibre level, the local growing pigs (Mong Cai (MC)) had the highest CTTAD, followed by F1 (crossbred of Mong Cai and Yorkshire) and Landrace x Yorkshire (LY). Nitrogen retention versus nitrogen intake was negatively affected by fibre level. Nitrogen utilization and retention was highest for LY, lowest for MC and intermediate for F1. In the second experiment, the weight and length of the gastro-intestinal tract (GIT) were not different between MC and LY piglets at the age of 10 and 30 days but were higher for MC at 63 days. MC had longer caecum and colon+rectum than LY at 10 and 30 days. At 63 days MC had heavier visceral organs and GIT and longer intestines on fibrous diets than LY. The CTTAD of nutrients was lower for LY than MC, and for fibrous diets than for the control diet.

Performance was lower for the sweet potato vine meal diet than other diets. In the third experiment, dry matter (DM) intake (g/kg BW0.75) was not affected by fibre level but was higher for MC than LY. The negative effects of fibre level on performance were seen clearly in the growing period, while effects were small in the finishing period. The MC had the lowest average daily gain (ADG) and highest feed conversion ratio, followed by F1 and LY. Carcass and dressing percentage was highest for LY and for the pigs given low fibre diets. The final experiment showed that the coefficient of ileal apparent digestibility (CIAD) and CTTAD of nutrients in piglets given a high fibre diet was lower than those given a low fibre diet. The CIAD of nutrients and amino acids was similar between MC and LY but CTTAD of nutrients was lower for LY than for MC. Supplementation of an exogenous enzyme mixture to a high fibre diet for piglets improved ADG, CIAD and CTTAD.

Keywords
: Carcass traits, Digestibility, Digestive physiology, Enzyme supplementation, Fibre level, Fibre source, Growing pigs, Growth performance, Landrace x Yorkshire, Mong Cai, Piglets, Vietnam.

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