**Effects of palm kernel cake on performance and blood lipids in rats**


ABSTRACT

Palm kernel cake (PKC), a by-product of oil palm seeds after extraction of their oil. The aim of this study was to investigate the effects of different levels of PKC on growth performance and blood lipids in rats. A total of 64 Sprague-Dawley (8 weeks of age) male rats were assigned individually to four treatments with different levels of PKC in the diet: 0, 15, 20 and 25%. No differences ($p<0.05$) were found in daily feed intake (6-8 g/day), body weight, growth rate and epididymal fat weight for all the dietary groups. Plasma protein and very low density lipoprotein (VLDL) triacylglycerol (TG) were higher ($p<0.05$) for 20% PKC fed rats than the control rats. Conversely, the plasma cholesterol and TG and VLDL-phospholipid (PL) concentrations of the control rats were higher ($p<0.05$) than those of PKC fed rats. The VLDL-protein, total cholesterol, free cholesterol (FC) and cholesteryl ester (CE) were not significantly different ($p>0.05$) among the treatment groups. Rats fed PKC had greater ($p<0.05$) ratios of total surface to core lipid components [(FC+PL)/(CE+TG)] than control rats. The results reflect dissimilarities of VLDL particle size between PKC treatment and control rats, where the plasma of the PKC treated rats contained more lipid rich VLDL. In conclusion, there was no adverse effect on growth performance when inclusion of PKC up to 25%. However, fibre content may affect the plasma lipid concentrations.



**Keyword:** Blood lipids; Growth performance; Palm kernel cake; Rats