

## **Enhancing broilers performance fed Palm Kernel Expeller (PKE) feeds fortified with supplements**

### **ABSTRACT**

Poultry production in Malaysia is heavily dependent on imported feed ingredients. There is a need to utilize local feed ingredients such as palm kernel expeller (PKE) to sustain poultry industry through physical treatments and so that it suitable to be incorporated into the feeds. Hence this study evaluates on the effects of control (0% PKE), untreated PKE (UPKE) , extruded PKE (EPKE), less-shell PKE (LSPKE) and extruded less-shell PKE (ELSPKE) at 10%, 20% and 30% inclusion rates in finisher diets (d 21-42) showed that growth performance of broilers (Cobb 500) fed 10% PKE, 20% LSPKE and ELSPKE, were comparable to control birds. At 30% PKE inclusion, broilers performance was significantly ( $P<0.05$ ) reduced. Birds fed PKE diets, irrespective of treatments and inclusion levels had lower LDL and total cholesterol, and similar villi height and crypt depth compared to control. At 30% PKE inclusion level, although energy metabolism was enhanced, as indicated by the up-regulation of hexokinase I and phosphofructokinase, but broilers growth performance did not improve. The feeding trial showed that broilers fed 25% or 30% LSPKE (grower feed, d 16-24), followed by 20% LSPKE (finisher feed, d 25-35) containing feed supplements 0.02% commercial enzymes and 0.30% humic acid), had comparable FI, BWG and FCR to broilers fed commercial feeds. Broilers fed 25% or 30% UPKE (grower feed, d 16-24) followed by 20% UPKE (finisher feed, d 25-35) showed significantly higher ( $P<0.05$ ) FCR compared to birds fed commercial feeds. The cost of feeds for production of birds fed LSPKE feeds (2.27-2.29 RM/kg liveweight), was lower than those fed commercial feeds (2.36 RM/kg liveweight). The study showed that physical treatments enhanced the nutritive value of PKE and feeds containing 25-30% and 20% LSPKE as grower and finisher rations, respectively, could attain broilers growth performance comparable to broilers fed commercial feeds.

**Keyword:** Palm kernel expeller; Physical treatment; Extrusion; Static cling; Growth performance poultry