

# Palm kernel cake extraction and utilisation in pig and poultry diets in Ghana

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an interesting review of palm kernel cake utilization in animal nutrition

## Abstract

The President's Special Initiative on oil palm has spurred oil palm cultivation and processing and would subsequently lead to an increase in the production of palm kernel cake which is the by-product obtained after the extraction of the oil. A review was therefore carried out to investigate the various methods of extracting palm kernel oil and palm kernel cake production and the extent of palm kernel cake utilization in Ghana. Two industrial-scale and two other cottage-scale palm kernel oil extraction set-ups were visited to ascertain the processes employed in the production of the palm kernel oil and palm kernel cake. The available literature on palm kernel cake was obtained in order to undertake a review of palm kernel cake utilization in animal nutrition in Ghana and elsewhere.

The 'Traditional' and Expeller processes were identified as the two methods of palm kernel oil extraction in Ghana and these produce the 'Cottage-type' and 'Factory-type' palm kernel cakes respectively. The literature surveyed showed that in one study, a 30% palm kernel cake-diet with high level of residual fat led to a higher average daily gain and better feed conversion efficiency compared to a low-fat palm kernel cake-based diet; but increased carcass fat with a consequent reduction in leanness in pigs. A 20% palm kernel cake-diet also yielded positive responses in broilers and layers but beyond that, reduced egg numbers and quality were recorded.

The high fibre content has been identified as the main limitation to its optimum utilization in the feeding of non-ruminant livestock. Some authors have observed that palm kernel cake may also be quite gritty and may require grinding before feed compounding. The cottage-type palm kernel cake has been found to have a rather strong smell which may lead to reductions in feed intake and growth performance if high levels are included in diets. Some studies have shown that supplementation of palm kernel cake-diets with exogenous non-starch polysaccharide degrading enzymes such as Mannanases may help to ensure its maximum utilization by pigs and poultry and help to reduce feed cost as well as promoting a more efficient use of a material that has a potential of becoming a major environmental pollutant.

### **Key words:**

African oil palm, expeller, factory-type, indigenous

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