

**Effect of supplementation of oil palm (*Eleis guineensis*) frond as a substitute for concentrate feed on rumen fermentation, carcass characteristics and microbial populations in sheep**

**ABSTRACT**

Thirty growing cross-bred sheep ( $20.4 \pm 1.9$  kg body weight (BW)) were used to determine the effects of dietary supplementation of oil palm (*Eleis guineensis*) frond (OPF) pellets on growth performance, microbial population and carcass characteristics of sheep. Experimental animals were allotted into three treatment groups fed varying levels of OPF pellets and commercial sheep pellets. Treatment diets were control diet (CON group, n=10), 25% OPF pellet in diet (% w/w) (HAF group, n=10) and 50% OPF pellet in diet (OPF group, n=10). After 100 days of feeding, all animals from each group were slaughtered, and carcass and rumen fluid were sampled. Both the HAF and CON groups had much more propionic acid and less acetic acid ( $P < 0.05$ ) compared to the OPF group at 8 h of sampling. Both HAF and CON had more marbling compared to OPF ( $P < 0.05$ ). The HAF and CON groups had also more bacteria per milliliter (mL) of rumen fluid compared with the OPF group at 0 and 2 h of sampling. Therefore, the supplementation of OPF, which is an easily available oil palm by-product, could be used as a feed ingredient at 25% inclusion level to support sheep farming in tropical countries that lack grazing pasture.

**Keyword:** Carcass; Microbe oil palm frond; Rumen; Sheep