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## Performance and Hematology of Weaner Rabbits Fed Diets Containing Culture Fermented Cowpea Husk

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### Abstract

In order to develop new, more efficient contemporary diets for growing rabbits, upgraded agro-industrial by-product, cowpea husk (CH), was tested in diet formulations for rabbit. Performance and haematology were used as response criteria. Seventy weaned rabbits (average weight of 550 g) were allocated to seven dietary treatments of five replicates each and two rabbits per replicate. Six dietary groups received diets containing fermented CH while the seventh group was placed on unfermented CH. Cowpea husks were collected from designated centres, sundried ( $DM \geq 90\%$ ) and appropriate weights of milled (1.0 mm sieve) CH were measured into six different double layered polythene bags. The cowpea husks were moistened with distilled water ( $2.5 \text{ l kg}^{-1}$ ) and spore solutions of respective fungi species were added at the rate of  $200 \text{ ml kg}^{-1}$  as follows: *Aspergillus niger* (ASP), *Rhizopus oligosporus* (RHZ), *Trichoderma reesei* (TRI), *A. niger* + *R. oligosporus* (ARH), *A. Niger* + *T. reesei* (ATR) and *T. reesei* + *R. oligosporus* (TRH) and the content of each bag mixed thoroughly. The crop residues were afterwards allowed to ferment anaerobically for 96 hours. Dried fermented and unfermented CH ( $DM \geq 90\%$ ) were then incorporated into respective rabbit rations to supply 10% fibre. Rabbits were fed for ten weeks to monitor performance indices such as weight gain, feed intake and feed conversion ratio. At the end of the feeding trial, four rabbits were randomly selected from each dietary group for blood collection. Haematological parameters such as packed cell volume, red blood cells, white blood cells, haemoglobin concentration, blood glucose and total blood protein were determined. Data collected were analysed using ANOVA in a SAS software package. Rabbits on TRH performed better ( $p < 0.05$ ) than other treatments in terms of weight gain and feed conversion ratio. The haematological measurements indicated that the fermented cowpea husk was well tolerated by the rabbits. These results have shown the potential usefulness of fermented cowpea husk as a source of fibre and to a lesser extent as a protein source in practical rabbit feed.

**Keywords:** Fermentation, hematology, performance, rabbit