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Influence of Crop Residues as Major Fibre Sources in Diets on Growth Indices of Rabbits

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Abstract

Crop residues are a sustainable feed resource for livestock production in Nigeria. Incorporation of fibre in the diets improves the nutrition and gut health of rabbits. Corn cob, rice straw, groundnut and cowpea stovers, millet straw, sugarcane tops are a few of the available crop residues in Nigeria. In a study, conventional maize offal (MO) was replaced by corn cob (CC) and rice straw (RS) as fibre sources in the diets of growing rabbits. Eighty four growing rabbit bucks of New Zealand White × Chinchilla crosses weighing 746 ± 2.3g were randomly allocated to seven dietary treatments, with twelve rabbits per treatment at three replicates of four rabbits per replicate in a 56-day feeding trial. The experiment was laid as a completely randomised design in which corn cob and rice straw were each used to replace a proportion of the 30% MO in the control diet at three graded levels to have seven dietary treatments labelled: Control, 10 % CC, 20 % CC, 30 % CC, 10 % RS, 20 % RS and 30 % RS. All the diets were pelleted. Daily dry matter intake (64.5 ± 0.4 g day^{-1}) of rabbits on 20% CC based diets was found to be significantly higher than the MO based control diet (59.0 ± 2.4 day^{-1}). Feed cost per kilogram gain was lowest ($P > 0.05$) on 20 % CC based diet (N515 ± 60.9), against N612 ± 155.1 for the control, while the highest feed cost per kilogram gain was found for the 30 % RS based diet (N763 ± 183.9). There was significant difference in carcass weight for rabbits that consumed 20 % CC based diet (1629 ± 161.6 g) as compared to the rabbits fed 30 % RS based diet(1243 ± 101.3 g), but comparable to the control (1542 ± 61.6 g). Increasing levels of CC in the diet increased the length of small intestine of rabbits but a contrary observation was recorded for rabbits fed RS based diets. In conclusion, replacing the conventional maize offal with corn cob up to 67 % in the diet of growing rabbits was more economical, improved carcass weight, and did not compromise growth performance.

Keywords: Carcass characteristics, crop residue, growth performance, livestock production, rabbits

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