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“Global food security and food safety:
The role of universities”

Potentials of Agricultural Wastes as Animal Feed in Ensuring Food Security and Food Safety in Africa

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Abstract

The role of agricultural research and universities in addressing and solving both food security and food safety cannot be overemphasised. Food security is still a problem in some parts of Africa. The major factors affecting food security in Nigeria include poverty, high price of food/feed, food wastage as a result of pests and diseases, unstable governmental policies and lack of adequate infrastructure. This paper addressed the potential use of agricultural wastes in feeding animals with the aim of ensuring food security and food safety in Africa. Fifteen common agricultural solid wastes were analysed for chemical composition and amino acid profile. A feeding trial was conducted to assess the effect of wheat bran, corn bran, watermelon peel and groundnut shell on growth performance of rats. Crude protein content ranged between $1.3 \pm 0.11\%$ and $29.8 \pm 0.06\%$. Crude fiber ranged between $2.4 \pm 0.01\%$ and $51.5 \pm 0.23\%$. Groundnut shell (-15.6 ± 2.34 g) resulted in decreased body weight gain of the experimental animals while corn bran (23.6 ± 7.67 g) and watermelon peel (22.5 ± 3.44 g) compared well with the control (24.9 ± 2.46 g). The watermelon peels, currently being discarded in developing countries, may be used to replace wheat offal or corn bran in feeding rats. However, efforts should be focused on enhancing the nutritional contents of agricultural wastes for feeding livestock through effective scientific collaborations involving agricultural research, universities in Africa and international bodies, thereby leading to global food security and food safety.

Keywords: Africa, agricultural waste, environmental pollution, food security