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Full Length Research Paper

Evaluation of proximate changes and microbiology of stored defatted residues of some selected Nigerian oil seeds

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Abstract

Studies were carried out to evaluate the proximate changes and microbiology of stored defatted residues of some oilseeds in Nigeria. Oilseeds studied include Melon (*Colocynthis citrullus*), Soybean (*Glycine max*), Cashew *(Anacardium occidentale*), Groundnut (*Arachis hypogeae*) and Coconut (*Cocos nucifera*). On a general note, the proximate parameters such as % protein, % ash, % ether extract, % carbohydrate and % moisture decreased in all the stored defatted residue, with melon residue recording the highest decrease (protein: 48.1 - 42.1%; Ether extract: 19.2 - 18.0%; Carbohydrate: 10.2 - 9.6%) while coconut residue had the lowest decrease (protein: 19.9 - 19.2%; Ether extract: 16.2 - 15.8%; Carbohydrate: 28.6 - 26.7%). There was a significant difference ($P < 0.05$) in both the total bacterial count (TBC) and total fungal count (TFC) within the period of storage. On melon residue TBC increased from 10.51 log10 to 12.11 log10 cfu/g and TFC from 8.45

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log10 to 10.17 log10 cfu/g. However on coconut residue TBC increased from 10.41 log10 to 11.48 log10 cfu/g while TFC increased from 8.41 log10 to 9.30 log10 cfu/g. Prominent organisms isolated include *A. niger, Rhizopus spp, Bacillus. subtilis, B. licheniformis and Proteus mirabilis* .The effect of proliferation of the isolated organisms on the storage qualities of these defatted residues may have been responsible for the reduction in the nutritive value of the stored residues. Results from these studies have revealed that the storage qualities of the defatted residue are time dependent.

Key words: Defatted residues, proximate, microorganisms, oilseeds, nutritive value.
