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Bacterial and Fungal Contamination of Commercially Prepared Fresh-Cut Fruits in Wudil, Nigeria and Implications for Consumer Health

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Abstract

The regular consumption of fruits and vegetables is crucial for health. In Nigeria, there's a growing trend of purchasing fresh-cut, washed, and packaged fruits for consumption. This study evaluated the microbial quality of such fruits sold in Wudil, Nigeria. A total of forty-five (45) samples of different fruits (Pawpaw (*Carica papaya*), coconut (*cocos nucifera* L.), Watermelon (*Citrullus lanatus*), Pineapple (*Ananas comosus*) and sugarcane (*Saccharum Officinarum*) were collected from vendors from different parts of Wudil town. Furthermore, swabs of the vendors' hands and samples of the water used for washing the fruits were collected for bacteriological analysis. The bacterial and fungal counts of the fruit samples were obtained and *Escherichia coli* and *Staphylococcus aureus* were isolated from the fruits, hand swab and water samples using standard methods. The bacterial and fungal counts of the coconut samples (3.55×10^5 and 6.36×10^5 cfu/g) were significantly higher than those of all other fruits ($P \leq 0.05$). Alarmingly, *E. coli* and *Staphylococcus aureus* were identified from all the fruit samples. Similarly, they were also isolated from almost all the vendors' hand swabs and water samples. About 66.7 % of the vendors utilised water from boreholes, while the others used pipe borne and well water for washing their fruits. These results highlight the safety issues associated with consuming these fresh-cut fruits, and show that they could be a health hazards to consumers. It is recommended that the vendors be educated on the need for proper hygiene and handling of the fruits.

Keywords: Fruits, Bacteria, Fungi, Wudil, Nigeria

