Title Development of a Cassava Peeling Machine

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Abstract

Cassava (*Manihot esculenta* Crantz), the favoured root and tuber crop of the tropics, is one of the most important energy sources in the human diet in the tropics. It is an important staple food and cash crop that thrives where most other crops fail. Cassava is utilised extensively for human and livestock consumption as well as for other industrial products such as starch. Most of the usages are in processed forms while only a small quantity is consumed directly. However, cassava processing is labour-intensive requiring mechanisation in other to meet up with current demand for these products. One major bottleneck in cassava processing has been cassava peeling, hence the objective of this study was to present a recently developed cassava peeling machine at the Federal University of Technology, Akure, Nigeria. To our knowledge, this is the first efficient cassava peeler in Sub-Saharan Africa. The machine has a capacity of 8 tons/day and performs the dual role of peeling and grating. The cassava peeler consists of a 5 Hp petrol engine, an abrasive drum (150 mm long), frame and transmission system. This prototype has been designed, fabricated and tested in our machine shop and found to be highly efficient. The cost of a single unit (prototype) was estimated at about 750 US Dollars. The machine is required in the production line of the following products: cassava grit, gari, cassava flour, cassava chips and pellets, lafun, pupuru, and starch. The result of this study has positive implications on food quality and security as well as on economic empowerment of the rural poor of the developing countries in the tropics where cassava products are becoming increasingly important.