Evaluation of Selected Kenyan Potato Cultivars for Processing into French Fries

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Abstract

The demand for potato varieties (*Solanum tuberosum* L.) with acceptable yield and processing characteristics is increasing in Kenya. However, most potato varieties and promising clones have not been adequately evaluated. In this study, three advanced potato clones (393385.47, 393385.39 and 391691.96) and five established Kenyan varieties (Tigoni, Desiree, Dutch Robyjn, Kenya Karibu and Kenya Sifa) were evaluated for processing into fresh and frozen French fries. All the 8 cultivars had acceptable physical tuber characteristics, dry matter content ($\geq 20\%$) and specific gravity (≥ 1.070). A linear positive correlation was established between tuber specific gravity and dry matter content ($r = 0.97$). All the cultivars made highly acceptable French fries (freshly prepared or frozen), with clones 393385.47 and 393385.39 having lower acceptability scores. The four varieties Tigoni, Desiree, Dutch Robyjn, Kenya Karibu and Kenya Sifa and clone 391691.96 can also be used for processing fresh or frozen chips to supplement variety Tigoni that is currently the most preferred for processing in Kenya. This will reduce over reliance on a single potato variety for this rapidly expanding industry, and thus safeguard availability and quality of raw materials.

Key words: Potato processing, physical characteristics, frozen chips, sensory properties