Effect of Slice Thickness and Frying Temperature on Color, Texture and Sensory Properties of Crisps nude from Four Kenyan Potato Cultivars

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Abstract

The objective of this study was to determine the performance of four Kenyan potato cultivars in terms of texture, color and sensory properties when crisps are processed at different slice thickness and frying temperatures. Potato tubers were peeled, washed and cut into slices of thickness 1.0 mm, 1.5 and 2.0 mm. Each size was fried at a constant temperature of 170°C for 2-5 min. For frying temperature evaluation, the potatoes for all cultivars were cut into a uniform thickness of 1.5 mm and fried at temperatures of 160, 170 and IS0°C for 2-5 min. There was no significant ($p>0.05$) variation in crisps texture among the four cultivars at different frying temperatures. Texture significantly ($p<:0.05$) increased with increase in frying temperature and slice thickness. Potato cultivar and slice thickness significantly ($p<:0.05$) influenced the lightness (L*), redness (a*) and yellowness (b*) color parameters. Redness and yellowness parameters significantly ($p<:0.05$) decreased with increase in frying temperature. Potato cultivar significantly ($p<:0.05$) influenced sensory scores on crisps color, flavor, texture and overall acceptability. Notably, frying temperature did not significantly ($p>0.05$) affect sensory scores. Color scores significantly ($p<:0.05$) decreased with increasing slice thickness. The effects of variety, frying temperature and slice thickness on potato crisps quality are apparent and hence the need for crisps processors to properly select not only the cultivars but also the critical processing parameters.