

THERMOPLASTIC EXTRUSION OF PEACH PALM FLOUR AND CORN

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Amazon palm tree, also called peach palm, produces a fruit that is consumed in a large variety of foods. It is rich in carotenoids. The fruits can be dried, milled and used as flour. Extrusion cooking is used to produce a large variety of food. It was used a twin screw extruder to process mixtures of peach palm and corn grits under varying conditions of temperature and screw speed. The extrusion process was monitored by specific mechanical energy (SME) and the extrudates were analysed according to the degree of expansion and carotenoid content. Output rate and SME varied from 6.20 to 6.65 kg h^{-1} and 776.9 to 883.1 kg h^{-1} , for the mixtures with 25% and 50%, respectively. The extrudates with 50% palm peach flour presented higher density and lower radial expansion than the extrudates with 25% palm peach. It was attributed to the higher lipid content of the mixture with higher content of peach palm. The levels of carotenoids and β -carotene found in the corn grits, yellow palm peach flour and corn extrudates with 25% and 50% of palm peach were respectively 1367.23 $\mu\text{g}/100\text{g}$ and 62.89 $\mu\text{g}/100\text{g}$; 2353.16 $\mu\text{g}/100\text{g}$ and 943.62 $\mu\text{g}/100\text{g}$; 883.01 $\mu\text{g}/100\text{g}$ and 90.95 $\mu\text{g}/100\text{g}$; 1264.47 $\mu\text{g}/100\text{g}$ and 159.32 $\mu\text{g}/100\text{g}$. There was a substantial loss of carotenoids in the extrudates, most probably due to the extrusion process. The non extruded flour of peach palm is high in provitamin A, once 40.1% of total carotenoid is β -carotene, which demonstrates its potential use as natural ingredient in food systems.