EFFECT OF PROCESSING TECHNIQUES (STEAMING, STEAM-DRYING AND FRYING) ON THE PROVITAMIN A CAROTENOÏDS AND VITAMIN C CONTENTS OF SQUASHES (Cucurbita Sp).

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Abstract: The content of α-carotene, all-trans-β-carotene and vitamin C was determined in 5 landraces of raw, steamed, steam-dried and fried squashes from Cameroon in order to compare their vitamin A potential. Lutein, moisture and total lipid contents were also determined. The landraces used were: Light green with small white spots; rounded; Orange flesh (PE1), and Green-yellow in places; straight neck; Red flesh (PE2), for Cucurbita pepo (C. pepo), Dark- green with less visible small white spots; rounded; Orange flesh (MO1), and Dark green with white spots; straight neck; Yellow flesh (MO2), for Cucurbita moschata (C. moschata) and finally Light-green with white strips from bottom; rounded; Orange flesh (MA), for Cucurbita maxima (C. maxima). 5cm slice of squashes were steamed at 90°C for 30 min or sliced again at 5 mm thickness and then dried at 80°C during 4hours to obtained steamed or steam-dried squashes. Concerning fried squashes, slices of 1mm thickness were fried in boiling refined palm oil (free of carotenoïds) bath at 150°C during 7 to 10 min. The results obtained show that in steam-dried and fried squashes provitamin A carotenoïds contents (µg/100g serving) range were 250 to 14445.97 and 201.01 to 15571.94 for α-carotene, 707.74 to 44672.88 and 1318.01 to 35483.92 for all-trans-β-carotene. Other nutrient contents range were 6.30 to 229.20 and 72.33 to 173.26 µg/100g serving for lutein, 7.22 to 25.35 and 33.18 to 68.02 mg/100g serving for vitamin C, and then 3.58 to 4.40 and 7.34 to 9.50 g/100g serving for total fat. These contents were significantly higher (P<0.05) as compared to those of raw and steamed squashes. 89 to 95% of water was loose from steam-dried and fried squashes. These results suggest that steam-dried and fried squashes could contribute to fight against vitamin A while increasing availability of squashes.