

# Changes in carotenoid, physicochemical and sensory values of deep-fried carrot chips during storage

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## Abstract

Deep-fried carrot chips were packaged in layered film (metallized polyester and linear low-density polyethylene) pouches under a partial vacuum of <1% O<sub>2</sub> concentration. Packages containing chips were stored in dark chambers at three conditions: 0–1 °C, 94–98% relative humidity (r.h.) (A); 22–23 °C, 31–45% r.h. (B); and 29–31 °C, 89–93% r.h. (C) for 0–5 months. Retention of  $\alpha$ - and  $\beta$ -carotene content and vitamin A activity were >82% over 5 months for all conditions. Colour values (L, a, b) were unchanged over 5 months for A and B, but decreased gradually ( $P < 0.05$ ) for C. No changes in moisture content, fat content, water activity, texture values and sensory values were observed over time for A and B, but changed ( $P < 0.05$ ) for C. No sensory differences were observed by condition or time in colour. Carrot chips, packaged in partially vacuumed opaque pouches, can be stored for at least 5 months at 0–1 °C, 94–98% r.h. or 22–23 °C, 31–45% r.h.

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(Received 10 June 2001; Accepted in revised form 2 December 2002)

## Keywords

Colour • shelf-life • storage conditions • texture • vitamin A activity • water