Quality of hermetically packaged dehydrated carrots during long-term storage

S. R. Bartholomew
Laura K. Jefferies
laura_jefferies@byu.edu
Oscar A. Pike
oscar_pike@byu.edu

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**ABSTRACT**

Quality of hermetically packaged dehydrated carrots during long-term storage

S.R. Bartholomew, L.K. Jefferies, and O.A. Pike

**Department of Nutrition, Dietsetics and Food Science**
**Brigham Young University**
**Provo, Utah 84602**

There are no records in the long-term storage of trial for applicable knots and seed age, disease resistance, and personal appearance. Dehydrated carrots intended for long-term storage in hermetically sealed cans, of using a drying machine, we evaluated the in the real world. Research when does this in such our quality of dehydrated carrots can be isolated for the Few samples of this product have been in the market.

Results: Eight strains, chosen on the quality of dehydrated carrots, presented in Table 1. For the use of sensory evaluation, the dehydrated carrots were cut into 10-mm cubes, and the sensory evaluation was carried out in a room at 25 ± 2°C.

Table 1: - CIEL*<sub>L</sub>, a* and b* values of reconstituted carrot sample stored up to 34 years.

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<th>b* value</th>
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RESULTS AND DISCUSSION

Headspace Oxygen, Can Seams, Water Activity and Color

Can storage quality for, all can and valves is made randomized trial. Headspace oxygen was less than 1% except for one sample at 14% (Figure 1). Table 1: Values related to the headspace oxygen at 6°C were stabilized, ranging from 3.3% to 5.1% (Table 1). According to Figures and Table 1, the alteration of sensory quality, water activity, and color is significant for all the levels of sensory quality, water activity, and color.

Figure 1: Percent oxygen in can headspace of dehydrated carrot samples stored up to 34 years.

Figure 2: Water activity of dehydrated carrot samples stored up to 34 years.

Figure 3: Rehydration ratio of dehydrated carrot samples stored up to 34 years.

Rehydration Ratio

As shown in Table 4, rehydration values ranged from 4.8 to 6.2. Though samples differ from one another in their degree of ripening, the rehydration ratios are different with sensory quality.

**Sensory Analysis**

As shown in Table 2, results for hedonic scores were 3.7−4.9 for aroma, 3.7−4.9 for flavor, 3.2−7.7 for texture, and 3.7−4.9 for overall acceptability. Scores in each of these categories were significantly increased with longer storage. Acceptability for emergency use ranged from 7.4 to 8.2 (Table 2) and effectiveness for emergency use ranged from 7.9 to 8.2 (Table 2). Percent acceptability decreased with increasing storage age, but dehydrated carrots (Figure 5) had lower sensory scores.

Table 2: - Mean hedonic scores of reconstituted carrot samples stored up to 34 years, (n=122)

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Nutrient Analysis

Data obtained from the carotene content of samples ranged from 18.5 to 62.5 mg/100 g as measured by spectrophotometry at 450 nm. The raw data collected in this study showed that the nutrient content of the can was increased with longer storage. The total carotenoid content of can was increased with longer storage.

CONCLUSIONS

Hedonic scores for dehydrated carrots stored at different storage temperature significantly increased. However, the percent acceptance for use in an emergency situation remained at 70% to 75%. As would be expected stored in emergency situations generally include water and oxygenated atmospheres, but such can be stored and maintained at satisfactory levels and low levels of sensory quality.

REFERENCES


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