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Quality of dehydrated mashed potatoes retail packaged in No. 10 cans

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ABSTRACT
Manufacturers of further processed potato products recognize consumer demand for convenience and the economy of transporting dehydrated commodities. Because of their bulkiness, dehydrated potato products are often sold in large containers, including No. 10 cans. The quality of such products available at the retail level has not been reported. The objective of this research was to compare the quality of several brands of dehydrated instant mashed potatoes packaged in No. 10 cans for retail sale.

Eight brands of instant mashed potatoes, including two types (4 granules, 4 flakes) packaged in No. 10 cans were obtained from retail outlets representing at least five different manufacturers. A 56-member consumer panel evaluated aroma, flavor, texture, and overall acceptability using a 9-point hedonic scale. Other observations included can headspace oxygen, can size, seam evaluation, water activity, and vitamin C content.

Regarding overall acceptability, mean hedonic scores for flakes and granules were 6.2 and 4.5 respectively. Within the sub categories of flakes and granules, overall acceptability of the highest brand was significantly different than the lowest brand. Flakes ranged from 6.5 to 5.9 and granules ranged from 5.0 to 4.6. Headspace oxygen ranged from 0.02 to 18%.

Headspace Oxygen, Can Seams and Water Activity

INTRODUCTION
Manufacturers of further processed potato products recognize consumer demand for convenience and the economy of transporting dehydrated commodities. Because of their bulkiness, dehydrated potato products are often available at the retail level in large containers, including No. 10 cans. The quality of such products available at the retail level has not been reported. The objective of this research was to compare the sensory and nutritional quality of several brands of dehydrated instant mashed potatoes packaged in No. 10 cans for retail sale.

RESEARCH AND METHODS

Four brands of mashed potatoes, including two types (4 granules, 4 flakes) packaged in No. 10 cans were obtained from retail outlets representing at least five different manufacturers. The conditions of processing and storage were unknown. Cans of all brands were less than 1 year old, except Brand A, which was 2 years old and brand B which did not have acceptable odor.

METHODOLOGY

Samples
Eight brands of instant mashed potatoes, including two types (4 granules, 4 flakes) packaged in No. 10 cans were obtained from retail outlets representing at least five different manufacturers. The conditions of processing and storage were unknown. Cans of all brands were less than 1 year old, except Brand A, which was 2 years old and brand B which did not have acceptable odor.

RESULTS AND DISCUSSION

Headspace Oxygen, Can Seams, and Water Activity

Headspace Oxygen was measured using the 3H40 Series Headspace Oxygen Analyzer (Illinois Instruments, Inc., Johnstown, IL). Can seams were evaluated by using the ScanMate System (ScanMate Corporation, Watertown, MA) to measure the following seam dimensions: width, thickness, body, hook, cover, and overlap. Seam tightness was rated on a scale of 0 to 1.0. The means were given an overall rating of good, satisfactory, or poor by an experienced evaluator. Water activity was measured using an Aquapod CX2 (Efragen Devices, Inc., Pullman, WA).

Sensory Analysis
Sensory analysis was conducted at the BYU Sensory Laboratory using standard procedures. Samples were prepared according to package directions and served in a randomized manner to a 50-member consumer panel in 4 visits. Panelists evaluated aroma, flavor, texture and overall acceptability using a 9-point hedonic scale.

Vitamin C
Vitamin C content was determined using the method of Wang (1998) using an Agilent Model 1100 diode array detector. Determinations were carried out under subdued light. Recovery rate was 100%.

RESULTS
There was significant variation in quality between brands of dehydrated instant mashed potatoes packaged in No. 10 cans for retail sale. Those who purchase instant potatoes should be aware of possible differences in headspace oxygen, sensory quality and vitamin C content among types and brands.

CONCLUSIONS
There was significant variation in sensory and nutritional quality between brands of dehydrated instant mashed potatoes packaged in No. 10 cans for retail sale. Those who purchase instant potatoes should be aware of possible differences in headspace oxygen, sensory quality and vitamin C content among types and brands.

REFERENCES

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