

Evaluation of Calcium Content in Tofu Products and Comparison with Canadian Nutrient File

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Introduction

In May 2022, Health Canada released “Applying Canada’s Dietary Guidelines” which aims to provide additional information to support health professionals and policymakers in the application of the 2019 dietary guidelines. Among suggested foods to support specific nutrient needs across different life stages, tofu (prepared with calcium) is listed as a food with a high calcium content to help achieve increased requirements in several age groups, notably children, adolescents, adult females and older adults.

Objectives

1. Evaluate and compare the calcium content of in-store tofu products with Canadian Nutrient File (CNF) reference values.

2. Validate whether various tofu products in the current marketplace can be considered to have a high calcium content.

Methods

- Data on tofu were collected using front-and-back label photographs in local and Asian grocery stores/supermarkets in: Quebec, Alberta, the Maritimes, Manitoba. Products were categorized according to firmness/coagulant and compared to corresponding CNF products.
- Information on nutritional labels determined if the item qualified for a “high in” calcium claim nutrition labels (NFT) ($\geq 15\%$ Daily Value/ ≥ 195 mg per 85g reference amount [RA]) per Health Canada regulations.
- Products indicating a calcium content >300 mg per RA underwent nutrition analysis by a certified laboratory.

Results

<p>OUT OF 92 IDENTIFIED TOFU PRODUCTS, 65% HAD NO CNF EQUIVALENT</p> <p>Of those with a CNF equivalent, 80% (n=24) contained less calcium than the corresponding CNF product (51% less on average).</p>	<p>ALMOST ALL PRODUCTS (98%) USED A CALCIUM COAGULANT</p> <p>yet 80% didn't reach the condition for a 'high in' calcium claim.</p>	<p>TWELVE PRODUCTS (13%) INDICATED "AND/OR" CALCIUM CHLORIDE (COAGULANT)</p> <p>in their ingredient list.</p>	<p>OUT OF NINE PRODUCT THAT UNDERWENT NUTRIENT ANALYSIS</p> <p>only 33% displayed accurate ($\pm 20\%$) calcium values on their label and only 66% actually qualified for the 'high in' calcium claim.</p>
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Coagulant use and calcium content of tofu products located in grocery stores in four Canadian provinces

Texture/Firmness (categories based on those in CNF)	% Using a calcium coagulant*	% Qualifying as good source of calcium†** (≥ 195 mg calcium per reference amount)
FRIED TOFU		
All textures (n=4)	100%	0%
REGULAR TOFU		
Extra firm or firm (n=13)	100%	15.4%
Medium firm or firm (n=15)	100%	20.0%
Soft or firm (n=12)	100%	0%
Other† (n=35)	94.3%	37.1%
SILKEN TOFU		
All textures (n=7)	100%	0%
DESSERT TOFU		
All textures (n=6)	100%	0%

* Includes products indicating "and/or" a calcium coagulant
 ** Based on Health Canada criteria to be considered a good source, i.e., using the reference amount for tofu (85 grams) and based on 1300 mg Daily Value (DV)
 † Excludes products with missing data for calcium content (n=3)
 ‡ This category includes a variety of tofu products for which a categorization by firmness was not possible based on labelling or if the product was in a distinct form (i.e. flavored, "spiced" or sprouted).

Conclusions

<p>THE CALCIUM VALUE OF TOFU PRODUCTS FOUND IN THE CNF MAY NOT BE REFLECTIVE OF THE TOFU PRODUCTS IN THE CURRENT MARKETPLACE</p> <p>and generally indicate higher calcium contents than similar products available in-store.</p>	<p>MOST TOFU PRODUCTS FOUND IN-STORE USE CALCIUM COAGULANTS YET ARE INELIGIBLE FOR A 'HIGH IN' CALCIUM CLAIM.</p> <p>Furthermore, the calcium content of tofu may be below label value.</p>
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Significance

Although Canada’s dietary guidelines recommend tofu (prepared with calcium) as a food high in calcium, caution is advised as the calcium content of in-store products varies substantially, and most do not qualify as being “high in” calcium.



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