

2021 Consumer Study: Impact of Nutritional Labeling



Mushroom Council
July, 2021

Prepared by Mark Lang, PhD

Impact of Nutritional Labeling

Project Background

As the Mushroom Council adopts a more measured approach to marketing evaluation and planning, they conduct different types of consumer research on a regular schedule. Recent research has been completed on The Blend, COVID shopping, mushroom attitudes and behaviors, and some special topics.

In the spring of 2021, a large scale attitudes and behaviors study was fielded. One of a few special topics included was the potential impact that nutritional labeling could have on shoppers. It is a topic that was originally studied by the Council in 2013 and current market trends regarding mushrooms and food warrant revisiting the topic in 2021.



Impact of Nutritional Labeling

Research Methodology

This study was fielded across the USA in March 2021 with a sample of 1931 adults that closely resembles the US census population in composition and geographic distribution.

Participants from an established consumer panel completed a 12-minute online survey. People that did not perform less than 25% of their household's food shopping were screened out. Some controls on age and income were used to maintain representativeness.

Rating questions was based on a 1 (Strongly Disagree) -10 (Strongly Agree) or similar scale. Average ratings and proportional scores for items are reported. Proportional scores indicate the percentage of shoppers that rated an item 7-10 which indicates some agreement or 9-10 which indicates a strong agreement or intention for marketing purposes.

Study design, fielding, and analysis were completed by Mark Lang, PhD, Professor of Marketing at The University of Tampa, working with the extended Mushroom Council Marketing Team.



Impact of Nutritional Labeling

Research Methodology

Label Experiment

A core part of this study was a controlled experiment where different groups of shoppers were exposed to different package images. One control group was exposed to a generic label on a mushroom package and asked to evaluate it along four dimensions. Six other groups (of about 280 shoppers per group) were shown one of six different nutritional label images and asked to evaluate that label along the same four dimensions. Each shopper was exposed to only one label.

Each of the six labels isolates a different aspect of nutritional labeling. Statistical testing between the control group and the six test groups shows us which aspects of nutritional labeling have the most impact on shoppers, if any.



Impact of Nutritional Labeling

A detailed results table is on slide 10.

Key Learnings

Some labels impact shoppers more than others

- The mushroom package with a Short Nutrient Panel on the front (see slide 9 for image) has the greatest impact on shopper evaluation, interest, and purchase intent. It is interesting that this simpler label is more impactful than labels with more detailed nutritional information.
 - It speaks to a common marketing communications understanding that less is more
 - It is likely the simple Nutrient Panel is cuing shoppers' existing mushroom health and wellness knowledge at the point of sale and triggering positive evaluations and purchase intent
- Mushroom packages with Nutrient Panels and Vitamin D indications were the next most impactful on shoppers, but the package with a Short Nutrient Panel and 50% Vitamin D was the only other to impact purchase intent.



Impact of Nutritional Labeling

Key Learnings

Vitamin D becomes one of the strongest label claims

- Since the 2013 consumer study, the strength of a Vitamin D package claim has increased significantly from the middle of pack to the top of the rankings, second only to Organic.

Vitamin D becomes a significant nutrient with shoppers

- Vitamin D is ranked highest in importance among 11 nutrients in improving health, nutrition, and immunity overall
- Shopper awareness and purchase of fresh mushrooms that are HIGH in VITAMIN D has almost doubled since 2018 and has almost tripled since 2013.

These findings provide evidence of the value that shoppers place on Vitamin D enriched mushrooms and mushrooms in general as they think about health, nutrition, and immunity.



Impact of Nutritional Labeling

Key Learnings

Labels impact most valuable shopper demographic

- Shoppers who favored the Nutrient Panel and Vitamin D are in a highly valuable demographic group:
Age 31-45, income \$100,000-\$149,999, college degree, households with children, and living in more urban areas

Labels impact high mushroom consuming shoppers

- Heavy and Moderate mushroom consumers are the most influenced by the labels as are shoppers who are eating the same or more mushrooms over prior year.
- Shoppers who are aware, have purchased, or intend to purchase Vitamin D enriched mushrooms are much more likely to be influenced by the labels.



Label Impact Experiment

Each respondent was exposed to only one of seven package/label images and asked to evaluate it along four dimensions (see example images below). As a result, each package/label was seen and rated by about 280 different respondents. In the analysis, each package/label was compared to the basic version (shaded first row in table below).

Label viewed	Mean Scores on scale 1-10			
	Evaluate	Health	Interested	Purchase
1Basic Control	7.1	7.3	6.7	6.8
2Short NutPanel	7.6 **	7.4	7.2 **	7.4 **
3Short NutPanel 50%D	7.4 *	7.3	7.1 *	7.2 *
4Short NutPanel 100%D	7.3	7.2	6.7	7.1
5Long NutPanel	7.3	7.2	6.8	7.1
6Long NutPanel 100%D	7.4 *	7.3	7.0	7.0
7Long NutPanel 100%D Burst	7.5 **	7.2	6.8 *	7.0

Mean Agreement with 1=Not at all and 10=Very Much

** 90% confident result is a statistically valid comparison to the Basic Control (10% chance of not being statistically valid)

* 80% confident result is a statistically valid comparison to the Basic Control (20% chance of not being statistically valid)

Evaluate You Evaluate it favorably, like it

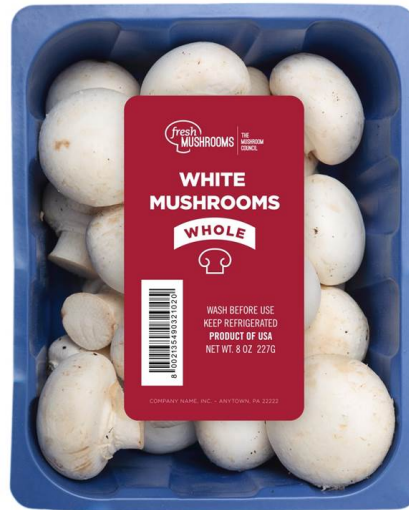
Health Consuming this product would contribute to better nutrition, health, and immunity

Interested You are Interested in it, in knowing more

Purchase You would Purchase this product in the near future, if available where you shop

Label Impact Experiment

1Basic Control



2Short NutPanel



Label images	Description
1Basic Control	Basic label with no other information (above)
2Short NutPanel	Short nutritional panel (above)
3Short NutPanel 50%D	Short nutritional panel with 50% Vitamin D
4Short NutPanel 100%D	Short nutritional panel with 100% Vitamin D
5Long NutPanel	Long nutritional panel
6Long NutPanel 100%D	Long nutritional panel with 100% Vitamin D
7Long NutPanel 100%D Burst	Long nutritional panel with 100% Vitamin D and a Vitamin D burst

Label Impact Experiment

Each respondent was exposed to only one of seven package/label images and asked to evaluate it along four dimensions (see example images below). As a result, each package/label was seen and rated by about 280 different respondents. In the analysis, each package/label was compared to the basic version (shaded first row in table below).

Label viewed	Mean Scores on scale 1-10			
	Evaluate	Health	Interested	Purchase
1Basic Control	7.1	7.3	6.7	6.8
2Short NutPanel	7.6 **	7.4	7.2 **	7.4 **
3Short NutPanel 50%D	7.4 *	7.3	7.1 *	7.2 *
4Short NutPanel 100%D	7.3	7.2	6.7	7.1
5Long NutPanel	7.3	7.2	6.8	7.1
6Long NutPanel 100%D	7.4 *	7.3	7.0	7.0
7Long NutPanel 100%D Burst	7.5 **	7.2	6.8 *	7.0

Mean Agreement with 1=Not at all and 10=Very Much

** 90% confident result is a statistically valid comparison to the Basic Control (10% chance of not being statistically valid)

* 80% confident result is a statistically valid comparison to the Basic Control (20% chance of not being statistically valid)

From the statistical test results in the table, **2Short NutPanel** and **3Short NutPanel 50%D** scored higher than the Basic label on Evaluation, Interested, and Purchase Intent.

Almost **60% of shoppers** exposed to labels 2 and 3 assessed them higher than the Basic Control label.

This may align with marketing experience that less can be more on labels - keep it simple. And even some mention of Vitamin D can be impactful.

7Long NutPanel 100%D Burst scored higher than the Basic label on Evaluation and Interested, probably based on the burst.

Impact of Nutritional Labeling

Label Claims

Q: Please rank the following by how much each **claim on a package label** would increase your **likelihood to purchase** fresh mushrooms.

Enter the numbers 1 through 5 in the boxes to indicate your five most important. 1=most important.

Label Claim	Rank Score
Organic	2.73
100% Vitamin D	2.78
Picked fresh daily	2.88
Excellent Source of Vitamin D	2.89
Naturally Fat and Cholesterol Free	2.92
From your local farmer	2.93
Great for your saute, salad and pizza	2.99
Natural Antioxidant Source	3.16
A Good Source of B-Vitamins	3.22
A Good Source of Phosphorus, promotes strong bones, teeth	3.26
A Good Source of Selenium	3.36

Note a lower number here indicates an average ranking closer to a top ranking of 1.

Vitamin D has moved up significantly on the ladder of packaging health claims that we consider.



Impact of Nutritional Labeling

Health & Nutrition

Q: Please rank the following by **importance** to you in order to have improved **health, nutrition, and immunity**. Enter the numbers 1 through 5 in the boxes to indicate your **five most important**. 1=most important.

Nutrient	Rank Score
Vitamin D	2.5
Vitamin C	2.7
Iron	2.9
Calcium	2.9
Riboflavin (B2)	3.3
Zinc	3.3
Copper	3.3
Selenium	3.3
Vitamin E	3.3
Potassium	3.3
Niacin (B3)	3.5

Note a lower number here indicates an average ranking closer to a top ranking of 1.

Vitamin D now ranks **highest** in terms of improving health and immunity overall.



Impact of Nutritional Labeling

Health & Nutrition

Q: Are you aware of special fresh mushrooms that are **HIGH in VITAMIN D**?

	2018	2021
Yes	26%	49%
No	74%	51%

Q; Have you ever bought fresh mushrooms that are **HIGH in VITAMIN D**?

	2018	2021
Yes	16%	44%
No	84%	56%

Awareness and purchase of Vitamin D mushrooms have increased substantially since 2018.

Increases in purchases may reflect confusion whether all or special mushrooms have Vitamin D.



Impact of Nutritional Labeling

Health & Nutrition

Q: How much are the following statements about fresh mushrooms that are **HIGH in VITAMIN D** true for you?

	Vitamin D		The Blend	Out of 10
	9-10	7-10	9-10	
You Understand the concept, how it works	35%	59%	53%	
You Evaluate them favorably, like them	35%	62%	35%	
You Believe their health and immunity benefits	37%	66%	35%	
You are Interested in them, in knowing more	36%	62%	38%	
You Intend to have them in the near future, if available where you shop	34%	59%	33%	

A high proportion of the mainstream population have positive assessments of Vitamin D mushrooms.

Except for "Understanding", Vitamin D mushrooms perform as well as The Blend in terms of consumer reception.



Impact of Nutritional Labeling

Health & Nutrition

Q: To what degree did you **KNOW** the following about fresh mushrooms?

	2018	2021	2021
	9-10	9-10	7-10
Mushrooms are a low calorie ingredient that can enhance weight loss when substituted for meats	32%	37%	63%
Mushrooms are a natural source of Vitamin D supporting strong bones by helping absorb calcium	19%	32%	57%
Mushrooms are dense with nutrients, vitamins, and minerals that help the immune system, blood pressure, metabolism and energy level	23%	32%	59%
Mushrooms naturally contain antioxidants ergothioneine and selenium which protect cells from damage that may lead to serious chronic diseases including cancer	17%	31%	55%
Adding mushrooms to recipes is a simple way to reduce fat and sodium intake	24%	35%	62%

Knowledge of the health and nutrition benefits of mushrooms have increased significantly over the past few years.

This is likely affecting shoppers' reaction to the Nutrient Label in the experiment



Impact of Nutritional Labeling

Segmentation

- Shoppers in the **age group 31-45** were more likely to be influenced by labels Short NutPanel and Short NutPanel 50%D.
- Lower income shoppers were less likely to be influenced with the **\$100,000-\$149,999** group noticeably more likely to be influenced.
- Shoppers who have completed a **college degree** are more likely to be influenced with those completing a graduate degree noticeably more likely.
- **Male** shoppers are slightly more likely to be influenced than female shoppers.
- **Households with children** are more likely to be influenced than those without children.
- **White/Caucasian and Asian** are more likely to be influenced than Black/African American with no difference based on Hispanic/Latino.
- Shoppers **living in more urban areas** are slightly more likely to be influenced than others.



Impact of Nutritional Labeling

Segmentation

- Heavy (weekly) and Moderate (monthly) mushroom consumers are the most influenced by labels as are those who are eating the same and more mushrooms over prior year.
- Shoppers who are **aware** of and those who have **purchased vitamin D enriched mushrooms** are more likely to be influenced than those who are not.
- Shoppers with **higher intention to purchase vitamin D enriched mushrooms** are much more likely to be influenced.
- Shoppers with higher awareness of fresh mushrooms consumption contributing to better nutrition and Health are much more likely to be influenced.



Impact of Nutritional Labeling

Historical Trend

- A packaging claims study conducted on behalf of the Mushroom Council in 2013 provided the following ranking of possible packaging claims in terms impacting shopper purchase intentions (table on the left). 2021 are presented to the right of the 2013 table to show change over time.
- Since the 2013 consumer study, the strength of a Vitamin D package claim has increased significantly from the middle of pack to the top of the rankings, second only to Organic.

Rank	2013 Packaging Claims
1	A Good Source of B-Vitamins
2	Picked fresh daily
3	Organic
4	100 %Vitamin D
5	Natural Antioxidant Source
6	A Good Source of Phosphorus, which promotes strong bones and teeth
7	Great for your sauté, salad and pizza
8	Scan to learn how to keep mushrooms fresher
9	Naturally Fat and Cholesterol Free
10	From your local farmer
n/s	An Excellent Source of Vitamin D
n/s	100 % Vitamin D for Strong Bones

Rank	2021 Packaging Claims
1	Organic
2	100% Vitamin D
3	Picked fresh daily
4	Excellent Source of Vitamin D
5	Naturally Fat and Cholesterol Free
6	From your local farmer
7	Great for your saute, salad and pizza
8	Natural Antioxidant Source
9	A Good Source of B-Vitamins
10	A Good Source of Phosphorus, promotes strong bones, teeth
11	A Good Source of Selenium

n/s- Not statistically valid or impactful