HOWARD MARKLEIN
STATE SENATOR • 17TH SENATE DISTRICT

October 24, 2019
Senate Committee on Agriculture, Revenue and Financial Institutions Testimony on Senate Bill (SB) 463, SB 464, and SB 466

Thank you committee members for hearing Senate Bill (SB) 463, SB 464, and SB 466, which create truth in food labeling laws to support Wisconsin's agriculture economy and alleviate consumer confusion.

My Senate district is one of the most agriculture-dependent districts in Wisconsin. I consistently hear from farmers that they are growing increasingly frustrated with the number of imitation products that are on the market. Walk into most grocery stores and the "2% Milk" will be sitting right next to the "Soy Milk" and "Almond Milk". Imitation dairy products, such as imitation cheese, butter, and ice cream, are all in close proximity to each other on shelves. In restaurants, the 100% plant-based "Impossible Burger" is listed under the "Hamburger" section of the menu. This is not right.

In fact, the Wisconsin Cheesemakers, Edge Dairy Farmer Cooperative and the Dairy Farmers of Wisconsin recently conducted a study to determine whether consumers know the difference between real cheese and plant-based, imitation "cheese". They found that 48% of people surveyed thought that fake, plant-based "cheese" was actually real cheese!

In response, I have introduced these three bills to tell the truth in food labeling. I want consumers to know what they are buying and eating. I want consumers to know the differences between the real, nutritious products grown and made by our farmers versus the fake, lab-grown, plant-based products that are passing for milk, meat, cheese, ice cream and other dairy products in our state. I want consumers to fully recognize the nutritional differences between real dairy and meat versus imitation food by the same name.

SB 463, the truth in dairy product labeling bill, will ensure that if a package says "cheese" or "yogurt", the product actually has dairy in it. 90% of Wisconsin's milk goes into cheese. It is concerning that many consumers don't know the difference between which products contain milk and which do not. This confusion, oftentimes without the consumer knowing otherwise, hurts Wisconsin's dairy industry. Wisconsin would be the first state to pass a truth in labeling law for dairy products!

SB 464, the truth in meat labeling bill, will make labeling plant-based meat alternatives and cell-cultured meat alternatives as "meat" or a similar term, such as "burger", "sausage", "chicken wing", or "bacon", illegal. This legislation would apply to packaging on products sold in stores, menus in restaurants, and promotional materials.

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Similar legislation is now law in at least 11 other states including North Dakota and South Dakota and been introduced in at least a dozen other states including Iowa, Indiana, and Illinois.

SB 466, the truth in milk labeling bill, will ensure that the only products that can be labeled as "milk" come from a cow or other hooved or camelid mammal, such as a goat. Plant-based products would need to be labeled as "drink" or "beverage". This bill is modeled after similar legislation in North Carolina and Maryland, both of which have passed milk labeling laws in the last two years.

To alleviate interstate commerce concerns and align with the North Carolina and Maryland laws, the milk labeling law would only go into effect after at least 10 out of a group of 15 states pass similar legislation by June 30, 2031. I have also introduced an amendment to enact the same multi-state requirement for SB 463, dairy product labeling, at the request of stakeholders.

I know these bills aren't a silver-bullet that will solve the problems for our ag-economy, but they are something we can do to protect and promote real agriculture products to consumers. These bills will also put pressure on the federal government to take action on existing food labeling regulations that aren't being enforced.

SB 463, SB 464, and SB 466 have broad support from agriculture groups across the state including the Wisconsin Farm Bureau Federation, the Dairy Business Association, the Wisconsin Cheese Makers Association, the Wisconsin Cattlemen's Association, and the Wisconsin Pork Association. Thank you again to the committee for hearing this proposal, and your timely action on the bill.

LOREN OLDENBURG

STATE REPRESENTATIVE • 96th ASSEMBLY DISTRICT

Senate Bills 463, 464 & 466

Relating to: labeling a dairy products, meat & milk and granting rule making authority

Senate Committee on Agriculture, Revenue and Financial Institutions

October 24, 2019

Good Morning, Chairman Marklein, Vice-Chair Petrowski, and committee members. I want to thank you for your willingness to hear Senate Bills 463, 464 & 466. These three bills affectively protect the labeling of genuine dairy products, meat & milk.

It is incredibly important that we protect consumers so that they know what they are getting from the food that they purchase. Allowing for the clear and defined packaging of dairy products, meat and milk will help to protect the identity of these whole foods.

Dairy products, meat & milk are the high quality, high protein, high nutrition safe foods that Wisconsin is known for across the globe. Senate Bills 463, 464 & 466 help to protect these foods, and the farmers who work to provide them to people like us during tough times in the agricultural industry.

Wisconsin is not the first state to have labeling legislation introduced. For example, Senate Bill 464 - the meat labeling bill, similar legislation is actually law in 11 states including North and South Dakota. Generally, these bills have been passed with broad bipartisan support. Iowa, Illinois, Indiana and at least 12 other states have also introduced similar legislation.

With the increasing presence of 100% plant based options at grocery stores and restaurants it is important that we take the steps to have clear labeling so we can help Wisconsin's agricultural industry and so that consumers are fully aware of the nature of the products they are purchasing.

The entire truth in food labeling package is supported by agriculture industry associations. If Wisconsin passes these bills we will protect meat, milk & dairy products. The dairy product labeling law will be the first law in the country to protect real dairy products.

It is important that we protect both Wisconsin's vital agriculture industry and consumers by passing the truth in labeling package. Thank you again for hearing Senate Bill 463, 464 & 466.

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Testimony in Favor of Truth in Food Labeling Bills (SB 463, 464, & 466)

Thank you to Chairman Marklein, who is the lead Senate author on this legislation and is testifying in favor with me today, as well as all the committee members for letting me speak in support of the three "Truth in Food Labeling" bills.

It is no secret that our farmers are struggling. Too often, we hear stories of farms going bankrupt because farmers are no longer able to sustain a healthy business. As a farmer myself, I understand the struggles farmers face. This important legislation is a relatively easy, and common-sense way to help farmers succeed.

The first bill I want to talk about is Senate Bill 463, relating to the labeling of dairy products. Basically, if a product is labeled as a dairy product, the bill would require that it actually contain dairy. This legislation will help clear up confusion among consumers, while supporting our dairy farmers. A recent study found that nearly half of consumers thought that imitation, plant-based cheese, was real cheese! This is extremely concerning. Not only are consumers not aware what they are eating, but farmers, already suffering from unstable milk prices, struggle to compete with fake, plant-based products.

The second bill I want to talk about is Senate Bill 466, concerning the labeling of milk products. This bill will require that the only products that can be labeled as "milk", come from a cow, or other hooved or camelid animal. All plant-based products will have to be labeled "drink" or "beverage". Like SB 463, this legislation will ease confusion among consumers, while aiding our dairy farmers. Similar legislation was already passed by North Carolina and Maryland.

The final bill I would like to speak in favor of today is Senate Bill 464, regarding labeling of meat products. Essentially, the bill will require that meat alternatives not be allowed to be labeled as "meat", or "burger" for example. Similar to the other two bills, this will decrease consumer confusion, while supporting farmers. Related legislation has also already been passed with bi-partisan support in at least 11 other states.

Overall, these bills will benefit both consumers and farmers. This legislation is a relatively simple, common-sense way to help support our agriculture industry. To ease interstate trade concerns, SB 463 and SB 466 also require that at least 10 other states out of a group of 15 (listed in the bill), pass similar legislation by June 30, 2031, before the laws are enacted. SB 464 does not have this provision because at least 11 other states have already passed similar legislation.

Struggling farmers should not have to compete with misleadingly labeled products, and consumers should know exactly what they are eating. A huge thank you to Senator Marklein for taking initiative on getting this legislation introduced.

I hope members of this committee will support this important legislation. Thank you for listening to my testimony today.

Nasonville Dairy Testimony | Wisconsin Master Cheesemaker Ken Heiman
Senate Committee on Agriculture, Revenue, and Financial Institutions
October 24, 2019 | 10:00 a.m.

Thank you for the opportunity to speak today in support of Senate Bills 463 and 466, to ensure clarity in milk and dairy product labeling.

I am Ken Heiman and, along with family members, I co-own Nasonville Dairy, Weber's Farm Store, and Heiman Holsteins in Marshfield, Wisconsin.

About Our Businesses

Our family's history in Wisconsin's dairy industry began in 1904, when Peter and Elizabeth Weber began farming in Wood County.

As you might imagine, generations of work led to business growth. Today, we have 500 Holstein cows at our farm.

Some of our milk is transported to Weber's Farm Store for processing, and we're proud to offer the highest quality milk available to customers.

Any excess milk from Heiman Holsteins is shipped to Nasonville Dairy for making cheese, but we also purchase milk from more than 200 other farmers.

Nasonville Dairy produces more than 160,000 pounds of award-winning cheese each day, shipping Cheddar, Colby, Monterey Jack, Asiago, and Feta across the country and around the world.

Need for Labeling Clarity

I am proud to be a Wisconsin Master Cheesemaker, and proud of the products that my colleagues and I make.

Milk and cheese are packed with protein to build muscles, calcium to keep your bones and teeth strong, and essential vitamins and minerals, especially for infants and older adults. These benefits are naturally occurring in cow's milk.

When consumers reach for milk or cheese, they're expecting not only a delicious product, but a nutritious, natural one, as well.

Unfortunately, that's what many of them think when they choose a dairy imitator called "milk" or "cheese" too.

You heard the results of WCMA's study: one-quarter of people buying a dairy imitator think that it contains real dairy milk. Of course, that's not the case. And the products are not delivering the same nutrition.

Plant-based imitators may be fortified in processing, what that means is adding tricalcium phosphate, titanium dioxide, xantham gum, psyllium husk, vegetable glycerin, and sodium phosphate.

Plant-based imitators often add sugars, to mask off flavors.

The makers of these products are benefitting from the good name and reputation of dairy, but they're not delivering on it.

Senate Bills 463 and 466

I believe that the U.S. Food and Drug Administration should enforce existing labeling requirements to protect consumers from confusion in the dairy aisle.

Since 1954, the FDA has regulated the labeling of foods with standards of identity – in effect, definitions of what a product is. Cheese has a standard of identity, and it's tied to the use of real, dairy milk.

Last year, the FDA noted concern over plant-based products use of the word cheese on their product labels, but the agency has yet to take meaningful action.

Absent action on the federal level, states should intercede. Wisconsin is the Dairy State and Wisconsin should lead.

The bills proposed by Senator Marklein and Representative Tranel shine a light on the issue of consumer confusion and lay out a reasonable plan of action.

I encourage you to approve SB 463 and 466, so that they might be considered by the Senate and Assembly this session.

Thank you.

National consumer research experts at Ravel surveyed 450 consumers identified as purchasers of dairy products, purchasers of plant-based foods that mimic dairy, or buyers of both. They asked these consumers about ingredients in real cheese vs. these plant-based products, about nutrients, protein content, overall nutrition, naturalness and buying habits.

What did the study find? Consumers are confused by these plant-based foods that borrow standardized words like cheddar and mozzarella, and display terms like cheese alternative. Consumers are confused about what they're buying, about the nutrition they're expecting and ingredients they never anticipated.

Here's some findings Ravel reported from the study, now in the hands of FDA:

- One quarter of consumers mistakenly indicated that pasteurized milk was present in plant-based foods that mimic cheese and one quarter didn't know what ingredients are in these mimics. The high prevalence of "don't know" and mistaken responses indicates that the use of traditional dairy names such as cheddar and mozzarella confuse consumers, leading to the selection of dairy ingredients in these plant-based foods.
- About one-third of consumers said they "don't know" or they think that the plant-based cheese has higher quality protein, even though the plant-based foods that mimic cheese that these consumers were shown have little to no protein content.
- Significantly more consumers indicate that they would buy one of the plant-based foods that mimic cheese because they are low in calories, low in fat, and contain no additives. In actuality, plant-based foods that mimic cheese contain an equal or comparable amount of fat and calories to dairy cheeses and contain substantially more additives than dairy cheeses.
- About half of consumers say plant-based foods that mimic cheese <u>are actually</u> cheddar or mozzarella cheese. And compared to the dairy cheeses, a significantly higher percentage "don't know" if the plant-based foods are cheddar or mozzarella cheese. Together, these answers indicate more than <u>half of consumers surveyed</u> mistook a plant-based food mimicking cheddar or mozzarella to be traditional cheddar or mozzarella or were unclear about applying these traditional cheese names to plant-based foods.

When Wisconsin Cheese Makers Association submitted this data to FDA last winter, we asked that the agency fulfill its statutory requirement to regulate honesty and fair dealing in foods and examine this misuse of standardized dairy names. These almond, potato and tapioca starch-based products are not cheese and are not cheddar or havarti or mozzarella. The deceptive labeling of these plant-based imitation products must stop, because consumers are being misled for a fast buck.

The bills before you bring clarity and enforcement to the message that imitation products must be prohibited from using dairy names. We welcome this clarity and enforcement, and this message of leadership from the state of Wisconsin.
Thank you.

WISCONSIN CHEESE MAKERS ASSOCIATION
EST. 1891

Comments of the Wisconsin Cheese Makers Association
Before the Wisconsin Senate Committee on Agriculture, Revenue and Financial Institutions
Oct. 24, 2019
Re: SB 463 and 466

Good Morning, I am John Umhoefer and I am executive director of the Wisconsin Cheese Makers Association or WCMA. Our trade association represents manufacturers of dairy products with operations here in Wisconsin, and companies and cooperatives in 19 states altogether. Last winter, our organization joined with thousands of voices across the country and supplied detailed data to the U.S. Food and Drug Administration, FDA, when the federal agency asked for public comment about consumer concerns and consumer confusion over what they called: "plant-based products manufactured to resemble dairy foods."

FDA is America's food policeman, upholding honesty and fair dealing in the interest of consumers. A food is misbranded and prohibited from introduction into interstate commerce if it purports to be a food with a standard of identity and fails to meet that standard.

And the Food, Drug and Cosmetic Act that FDA enforces requires that labels on packaged food products in interstate commerce not be false or misleading in any way.

Plant-based food described as "mozzarella" or "cheddar-style" that are made without milk or dairy ingredients fall clearly outside the federal standard set for these cheese names, and worse, these foods labels mislead consumers who are expecting natural protein and calcium in these imitation cheeses and finding plant-based mimics have little or none of these essential nutrients.

Wisconsin Cheese Makers Association, representing cheesemakers, buttermakers, yogurt makers, whey processors, is grateful that Senator Marklein and fellow senators have stepped into an enforcement void and have proposed that Wisconsin lead the charge on protecting the true meaning of words like milk and cheddar and butter as dairy-derived foods. We do not oppose the existence or the sale of imitations, but we insist that these imitations not be allowed to mislead consumer through false labeling -- by pretending to be something they are not.

Last fall, FDA posed dozens of questions to the public at large, with this stated goal: "We are interested in learning whether consumers are aware of and understand the basic nature, essential characteristics, characterizing ingredients, and nutritional differences between plant-based products and dairy foods."

Wisconsin Cheese Makers Association, Edge Dairy Farmer Cooperative and Dairy Farmers of Wisconsin partnered this winter on a consumer research study to discover the objective consumer data FDA was seeking.

We asked 450 consumers to evaluate three plant-based foods that mimic dairy cheese to understand if the packaging and descriptions are confusing...

This is what they told us:

CHEESE TYPE

Nearly ½ (**48%**) of consumers think that plant-based foods that mimic cheese are a cheddar or mozzarella cheese

50% 46% 49%

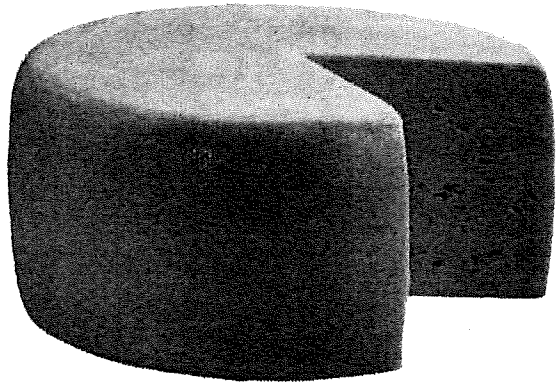
INGREDIENTS

¼ (**23%**) of consumers think that plant-based foods that mimic cheese contain pasteurized milk.

24% 21% 25%

BUY

About ¼ of consumers purchase plant-based foods that mimic cheese because they believe them to be low in calories (**25%**) and fat (**26%**), and contain no additives (**24%**). In reality, plant-based foods that mimic cheese contain an equal or comparable amount of fat and calories and contain substantially more additives than dairy cheeses.



low in calories

27% 21% 26%

low in fat

29% 24% 23%

contain no additives

22% 23% 27%

CALCIUM

2 in 5 (**41%**) consumers think that plant-based foods that mimic cheese contain calcium even though the amount present is substantially less than dairy, or not present at all.

49% 36% 37%

PROTEIN

About 1/3 (**36%**) of consumers think that plant-based foods that mimic cheese contain protein and about 1/5 (**21%**) think that it is of a higher quality than dairy even though plant-based foods that mimic cheese have little to no protein.

37% 37% 34%

KEY: plant-based food that mimics cheddar | plant-based food that mimics mozzarella shreds | plant-based food that mimics mozzarella slices

DAIRY FARMERS OF WISCONSIN

Edge

DBA

DAIRY BUSINESS ASSOCIATION | DAIRY FORWARD

Testimony in Favor of SB 463, SB 464 and SB 466
October 24, 2019

Good morning, my name is John Holevoet and I am the director of government affairs for the Dairy Business Association. Thank you Chairman Marklein, Ranking Member Smith and the rest of this committee for allowing me to speak with your today regarding DBA's support for Senate Bills 463, 464 and 466. We appreciate the leadership shown by Chairman Marklein in authoring this legislation and are thankful for everyone who signed on as a co-sponsor of these bills.

DBA represents all aspects of the dairy community. Our membership includes dairy farmers, dairy processors, and a variety of other businesses that help to make farmers and processors successful in our state. This means our members have an interest in the subject matter of all three of these bills. Together, they produce milk and dairy products and, of course, every dairy farmer is also a beef producer.

These bills are meant to promote fairness in the marketplace and ensure that consumers have the correct information they need to make informed buying decisions. We are not seeking to remove the offending products from the shelves. These products have a certain market share and we do not begrudge them that. We merely object to them building their market share by misusing the good name of wholesome products that we have spent many years and much money to promote. In jurisdictions that have enforced sensible labeling protections, we have seen that plant-based products continue to do well. For example, in Canada, you will have not have an issue finding almond drink in your local grocery store and it sells just fine without misappropriating the name milk.

Giving consumers good information starts by accurately labeling food products. It is not too much to ask that food products meet the standards of identity reflected by the product's name. Indeed, that seems like the very least we can do. Milk is very clearly defined in federal law as: "the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows." Imitation products that do not meet this definition should not be allowed to be labeled as "milk." Yet, the federal government has refused to enforce existing law. The problem is similar for other dairy products. For example, existing federal law contains a standard of identity for cheese and it is clear that cheese should be made from milk. However, non-dairy products that label themselves cheese, mozzarella, cheddar and the like are finding their way into American grocery stores.

This failure to enforce labeling requirements has gone on far too long. The dairy community has repeatedly voiced concerns, but the Food and Drug Administration has not acted. Consumers agree that clarity is needed. According to a 2018 National Tracking Poll, respondents said "milk" should not be used to market non-dairy beverages by over a two-to-one ratio. A subsequent survey conducted by IPSOS, a global market research and consulting firm, found that 80 percent of people believe plant-based beverages should not be labeled as milk. Even a majority of those consumers that buy plant-based beverages agreed. People want honest and accurate information on their food. They need it to make healthy and nutritionally-sound food purchasing decisions

for their families. The IPSOS survey mentioned earlier found that more than one-third of consumers incorrectly believed that plant-based beverages have the same or more protein than milk when milk actually contains up to eight times as much protein as imitation products.

DBA's affiliated co-op, Edge Dairy Farmer Cooperative, partnered with the Wisconsin Cheese Makers Association and Dairy Farmers of Wisconsin to commission a survey specifically looking at plant-based foods that are meant to mimic cheese. I have provided a summary document of the survey's findings with my written testimony. The survey results indicate that consumer confusion over what these products contain and how they compare nutritionally to real dairy is even greater than in the beverage space. Nearly one-quarter of those surveyed thought the plant-based products contained milk. About half of those shown products meant to imitate mozzarella and cheddar cheese thought the products were real cheese.

When it comes to comparing the nutritional value, those surveyed faired poorly. More than a third thought a plant-based product that imitated mozzarella slices contained protein and calcium. The product actually contains neither. This bad information caused by dishonest labeling hurts not just dairy farmers and processors, but also the consumers of these inferior products. Dairy foods are well-known as an important part of a healthy diet, with milk, cheese and yogurt providing nine key nutrients. The 2015-2020 Dietary Guidelines for Americans concluded that most Americans under consume dairy and do not get enough of several nutrients of concern, including vitamin D, calcium and potassium.

I ask you to please support these bills. They will help to protect our dairy and meat industries from being unfairly undermined by mislabeled products. They will also help all Wisconsinites to make better nutritional choices at the grocery store when faced with a proliferation of imitation products that do not have the same nutrients as those items they attempt to mimic. The federal government's failure to enforce existing standards of identity for milk and other dairy products has made it necessary for states like Wisconsin to act. Their failure to stand up for proper labeling of dairy products also raises concerns about how well they will be able to handle emerging labeling concerns about plant-based products that imitate meat as well as lab-grown cultured tissue. Hopefully, by states taking action regarding meat labeling now, we can prevent the abject failure to protect farmers, processors and consumers that has occurred in the dairy space.

DBA

DAIRY BUSINESS ASSOCIATION | DAIRY FORWARD

Testimony in Favor of SB 463, SB 464 and SB 466
October 24, 2019

Good morning, my name is Tom Crave. I am president of the Dairy Business Association. I want to thank Chairman Marklein and the rest of the committee for giving me the opportunity to speak with you today regarding these three labeling bills.

Together with my family, I run a dairy farm and farmstead cheese factory north of Waterloo in Dodge County. This gives me an interest in each of the three bills being considered at today's hearing. We have a hand in producing milk, dairy products and meat.

First, I want to speak to you regarding SB 466, the milk labeling bill. It is long past time that Wisconsin enact this type of legislation. Existing federal rules are supposed to limit the use of the word milk to describe what is obtained by milking cows. Sadly, the law has not been enforced by the Food and Drug Administration and non-dairy beverage makers have illegally misappropriated the term milk to help market their products. This is unfair to dairy farmers, who spend millions of dollars each year promoting milk through a mandatory checkoff program. Plant-based beverage makers that use the term milk on their labels and packaging are taking advantage of the significant investment dairy farmers have made without having to shoulder any of the costs.

Milk might have been the first dairy product to have its name stolen, but it is far from the last. Other dairy products are increasingly facing similar challenges from products that sell themselves as cheese, ice cream or yogurt, but do not contain any dairy. All these products have existing standards of identity rooted in federal law. Indeed, the Wisconsin statute that deals with dairy products refers to these federal standards. As with milk, plant-based product manufacturers are imitating our products and riding on our marketing coattails. Of all the states in the country, Wisconsin, America's Dairyland, should be at the forefront of standing up to protect our dairy farmers and processors.

Even worse, consumers are being mislead about what they are buying. Some consumers who buy plant-based products with names that include terms like milk or cheese think they are getting real milk and cheese or that the products at least contain some dairy. This has been repeatedly shown by consumer research. More common, but just as troubling, consumers might understand the product does not contain dairy, but they assume the product will be nutritionally equivalent to the real dairy product it is meant to be imitating. This is not the case and consumers are being adversely impacted. A mother who buys her child a plant-based beverage because she thinks it will provide roughly the same vitamins, calcium and protein as milk has been mislead and is shortchanging her child.

The labeling fight over milk has been going for years and the fight for fair labeling of dairy products and their imitators has been gaining steam. The next labeling fight is almost certainly going to be over meat. Disagreements exist over what terms should be used to described both

plant-based products that imitate meat and lab-grown cultured tissue. Wisconsin would be a leader in taking a stand in this area, but that kind of leadership will hopefully head off the type of confusion we now see in the areas of milk and dairy products. Instead of trying to have our laws catch up to technology, helping to clarify the standards over what can be fairly labeled as meat would give us an advantage over other jurisdictions that will eventually have to wrestle with this issue later.

I urge you all to support these three common sense bills. The broad support shown for them makes it clear that this is not partisan issue. Fair labeling of our agricultural products is a Wisconsin issue. Agriculture is one of the most important parts of our state's economy. Dairy alone generates nearly $50 billion each year in economic activity in Wisconsin. It only makes sense for our lawmakers to step up to protect this important economic driver from labeling issues that undermine it.

Thank you for your time and attention to this matter. I would be happy to answer any questions that you may have.

STUDY ON DAIRY CHEESE AND PLANT-BASED FOODS THAT MIMIC CHEESE

QUANTITATIVE REPORT | JANUARY 17, 2019

Privileged and Confidential

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BACKGROUND

Three dairy industry organizations, Wisconsin Cheese Makers Association, Edge Dairy Farmer Cooperative (representing dairy farmers and processors from across the Midwest) and Dairy Farmers of Wisconsin (the Dairy Groups) would like to understand how consumers perceive plant-based foods that mimic dairy products. These organizations represent dairy farmers and processors from across the Midwest.

The prevalence of plant-based foods that mimic dairy products continues to increase. Some of these plant-based foods use terms such as milk, cheese alternative, cheddar/gouda-style, etc. that may be misleading to the consumer. Further, natural cheeses have traditional names with federal standards of identity which describe ingredients and preparation processes that plant-based foods cannot adhere to (i.e. a plant-based food cannot meet the milkfat required in cheddar cheese). To ensure consumers understand the products they are purchasing and consuming, it is important to understand how they currently perceive plant-based foods that mimic dairy products, and what labeling modifications can or should be made to ensure consumers understand the products they are purchasing and consuming.

OBJECTIVES

The Dairy Groups want to understand:

- Why consumers purchase plant-based foods that mimic cheese.
- What consumers believe the ingredients of plant-based foods that mimic cheese are, and if that is influenced by the terminology/labeling (i.e. 'milk', 'cheese', 'cheddar-style').
- Consumer perception of the nutritional value of plant-based foods that mimic cheese compared to dairy, and if perceptions are influenced by the terminology/labeling (i.e. 'milk', 'cheese', 'cheddar-style').
- How consumers perceive plant-based foods that mimic cheese perform in various eating and cooking tasks (vs. dairy).

METHODOLOGY

A 15-minute online survey was completed among a national U.S. sample of consumers ages 18 and older.

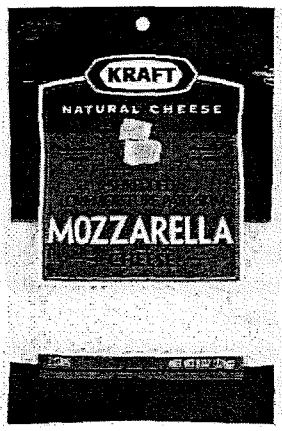
- Respondents who reported that they purchased a dairy product (cheese, milk, or yogurt) and/or a plant-based food that mimics dairy (plant-based cheese made without dairy, plant-based milk, or plant-based yogurt made without dairy milk) within the last 4 weeks qualified for the study. This purchase history is available in Appendix Table A.
- Consumers determined to be employed in a competitive industry were excluded from the study. These industries included: consumer packaged goods; food manufacturer, retailer, wholesaler, retailer, or advocacy organization; marketing, market research, advertising, or public relations; regulatory agency related to food (e.g. FDA, USDA, FTC); and agriculture.
- Ravel, LLC programmed the survey and hosted the data collection using Confirmit software tools.

- Ravel, LLC partners with select, proven national online panels to provide quality targeted samples.
- Data collection period was December 21, 2018 through December 30, 2018 and paused for the holiday on December 24 and December 25.
- Ravel, LLC promoted data quality by ensuring that questions were reasonable and engaging for respondents.
- At the completion of the survey, data cleaning steps were employed to reduce sampling error:
    - Eliminated respondents who stated they could not see the images
    - Eliminated respondents who fell outside of time completion parameters (i.e. completed the survey too quickly).

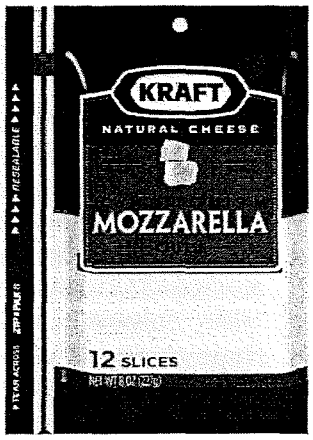
PRODUCTS EVALUATED

DAIRY CHEESES

Dairy Cheddar

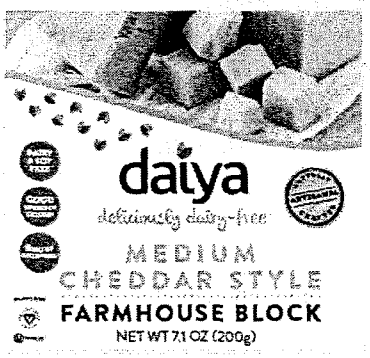


Dairy Mozzarella Shreds

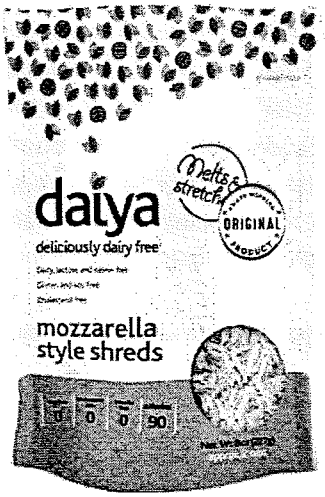


Dairy Mozzarella Slices

PLANT-BASED FOODS THAT MIMIC CHEESE



Plant-based food that mimics cheddar



Plant-based food that mimics mozzarella shreds

Plant-based food that mimics mozzarella slices

EXECUTIVE SUMMARY

Ingredients

Over one-quarter of consumers indicated that they don't know what ingredients are in the plant-based foods that mimic cheese (Table A). Furthermore, about one-quarter mistakenly indicated that pasteurized milk was present. The high prevalence of 'don't know' and mistaken responses perhaps indicates that the use of traditional dairy names such as cheddar and mozzarella confuse consumers, leading to the selection of dairy ingredients in these plant-based foods.

Nutrients

About one-third of consumers indicate that the plant-based food that mimics mozzarella slices has protein (34%) and calcium (37%), when in actuality it does not contain either of these nutrients (Table B).

A significantly greater percentage of consumers indicate that they don't know which nutrients are in the plant-based foods, perhaps indicating that the front labeling does not clearly reveal the product nutrients (Table B).

Cheese Type

About half of consumers say plant-based foods that mimic cheese are actually cheddar or mozzarella cheese (Table C). And compared to the dairy cheeses, a significantly higher percentage don't know if the plant-based foods are cheddar or mozzarella cheese.

Together, these answers indicate more than half of consumers surveyed mistook a plant-based food mimicking cheddar or mozzarella to be traditional cheddar or mozzarella or were unclear about applying these traditional cheese names to plant-based foods.

Nutrition

A statistically greater percentage of all consumers surveyed believe that dairy cheese is more nutritious than plant-based food that mimics cheese, versus consumers who believe the opposite (Table D). However, this varies by food type purchased. Consumers who purchase plant-based foods that mimic cheese are significantly more likely to believe that these foods are more nutritious than dairy cheese (Table E).

Protein

About one-third of consumers don't know or think that the plant-based cheese has higher quality protein, even though plant-based foods that mimic cheese have little to no protein content (Table F). The prevalence of consumers who don't know or mistakenly identify the higher quality protein food may be an indication that the use of traditional dairy names such as cheddar and mozzarella confuses consumers, leading to the expectation of significant amounts of high quality protein in these plant-based foods.

The percentage of consumers who indicate that the plant-based foods have higher quality protein is significantly greater among plant-based food purchasers (Table G), perhaps indicating

that they believe their food choice is providing an adequate protein source, when in actuality plant-based foods that mimic cheese contain little to no protein.

Natural

A statistically greater percentage of consumers believe that dairy cheese is more natural than plant-based foods that mimic cheese (Table H). However, this varies by food type purchased. Consumers who purchase plant-based foods that mimic cheese are significantly more likely to believe that these foods are more natural than dairy cheese (Table I).

Substitute

About one in five consumers do not believe that dairy cheese and plant-based food that mimics cheese are good substitutes for each other (Table J). Dairy cheese consumers are significantly more likely than plant-based dairy consumers to believe that plant-based foods that mimic cheese cannot be substituted for dairy cheese (Table K).

Buy

Almost one in five dairy purchasers said they would buy a plant-based food based on the front label, even though these consumers do not purchase plant-based dairy products (Table L). This may indicate that plant-based food labels do not clearly indicate the non-dairy nature of these foods, or the use of traditional dairy names such as cheddar and mozzarella confuses consumers, leading to the selection of these plant-based foods.

Some of the reasons consumers purchase plant-based foods that mimic cheese do not correlate with the product. Specifically, significantly more consumers indicate that they would buy one of the plant-based foods that mimic cheese because they are low in calories, low in fat, and contain no additives (Table M). In actuality, plant-based foods that mimic cheese contain an equal or comparable amount of fat and calories and contain substantially more additives than dairy cheeses.

INGREDIENTS

Consumers were asked to identify the ingredients of three dairy cheeses and three plant-based foods that mimic cheese based on the front packaging of the product. Options available to consumers included the most common ingredients of both dairy cheese and plant-based food that mimics cheese.

About one-quarter of consumers were able to correctly identify the ingredients of the plant-based foods that mimic cheese (Table A). However, over one-quarter of consumers, significantly more than in the dairy cheese products, indicated that they don't know what ingredients are in the plant-based foods that mimic cheese. Furthermore, about one-quarter mistakenly indicated that pasteurized milk was present. The high prevalence of 'don't know' and mistaken responses perhaps indicates that the use of traditional dairy names such as cheddar and mozzarella confuse consumers, leading to the selection of dairy ingredients in these plant-based foods.

Table A: INGREDIENTS

Based on what you see, which ingredients do you believe are included in this food?	Dairy cheddar n=450 A (%)	Dairy mozzarella shreds n=450 B (%)	Dairy mozzarella slices n=450 C (%)	Plant-based food that mimics cheddar n=450 D (%)	Plant-based food that mimics mozzarella shreds n=450 E (%)	Plant-based food that mimics mozzarella slices n=450 F (%)
DAIRY CHEESE INGREDIENTS						
Pasteurized milk	68 DEF	69 DEF	69 DEF	24	21	25
Cheese culture	62 DEF	63 DEF	62 DEF	31	30	32
Enzymes	27 EF	28 EF	27 EF	24	22	22
PLANT-BASED INGREDIENTS						
Filtered water	23	24	24	26	29 ABC	27
Modified Food Starch	18	15	16	19	21 BC	20 B
Canola and/or Safflower oil	14	12	12	22 ABC	19 ABC	20 ABC
Potato Starch	10	9	9	18 ABC	18 ABC	18 ABC
Pea protein	10	9	8	18 ABC	20 ABC	17 ABC
Coconut oil	9	9	10	17 ABC	17 ABC	16 ABC
Tapioca	6	6	7	11 ABC	13 ABC	12 ABC
OTHER						
Salt	52 BDEF	47 DEF	50 DEF	38	37	38
Other	0	1	0	1	1	1
Don't know	8	9	9	26 ABC	27 ABC	27 ABC

Notes:
Data in each column may not add up to 100% as consumers could choose more than one response.
A/B/C/D/E/F indicates significance, significance is tested at the 95% confidence level.

NUTRIENTS

Consumers were asked to identify the nutrients contained in three dairy cheeses and three plant-based foods that mimic cheese, based on the front packaging of the product. Options available to consumers included macronutrients (i.e. fat, carbohydrate, protein) and the micronutrients listed on the ingredient label of the products.

Dairy cheese and plant-based food that mimic cheese tend to have similar nutrients which primarily include fat, carbohydrates, proteins, and calcium. However, the quantity of these nutrients varies by product. Generally, dairy cheese is higher in fat, protein and calcium and plant-based food that mimics cheese is higher in carbohydrates.

The percentage of consumers who expect these nutrients to be present varies by food type and by nutrient (Table B). A significantly greater percentage of consumers indicated that the dairy cheeses contain protein and calcium. However, about one-third of consumers indicated that the plant-based food that mimics mozzarella slices has protein (34%) and calcium (37%) when in actuality it does not contain either of these nutrients.

The plant-based foods that mimic cheddar and mozzarella shreds do contain protein (1g), but at a much lower level than dairy cheddar (6g) and dairy mozzarella shreds (7g). The plant-based food that mimics mozzarella shreds has a much lower level of calcium (2% DV) than dairy mozzarella shreds (15% DV), and the plant-based food that mimics cheddar contains 10% DV calcium (from tricalcium phosphate) vs. 15 % DV natural-occurring calcium in dairy cheddar.

A significantly greater percentage of consumers indicated they don't know which nutrients are in the plant-based foods, perhaps indicating that the front labeling does not clearly reveal the product nutrients.

Table B: NUTRIENTS

Based on what you see, which nutrients do you believe are included in this food?	**Dairy cheddar** n=450 A (%)	**Dairy mozzarella shreds** n=450 B (%)	**Dairy mozzarella slices** n=450 C (%)	**Plant-based food that mimics cheddar** n=450 D (%)	**Plant-based food that mimics mozzarella shreds** n=450 E (%)	**Plant-based food that mimics mozzarella slices** n=450 F (%)
Calcium	65 DEF	65 DEF	64 DEF	49 EF	36	37
Vitamin D	47 DEF	48 DEF	49 DEF	30	31	32
Protein	47 DEF	46 DEF	44 DEF	37	37	34
Carbohydrate	25 D	25 D	23	20	21	21
Fat	44 BDEF	38 DEF	42 BDEF	27 E	23	26
Vitamin A	27 EF	27 EF	26	24	22	23
Vitamin C	25 DE	23	26 DEF	20	20	21
Iron	22 DEF	21 E	20 E	18	16	18
Potassium	21 D	19	21 F	19	18	17
Don't know	10	11	11	23 ABC	30 ABCD	30 ABCD

Notes:
Data in each column may not add up to 100% as consumers could choose more than one response.
A/B/C/D/E/F indicates significance, significance is tested at the 95% confidence level.

CHEESE TYPE

Consumers were asked if the food they evaluated is a cheddar or mozzarella cheese based on the front packaging of the product and the most relevant cheese type.

Nine in ten consumers correctly identify the dairy cheeses as a cheddar or mozzarella cheese (Table C; 91% dairy cheddar, 90% dairy mozzarella shreds, 92% dairy mozzarella slices).

About half of consumers identify the plant-based foods that mimic cheese as a cheddar or mozzarella cheese. And, a significantly higher percentage, versus the dairy cheeses, don't know. Together, these answers indicate more than half of consumers surveyed mistook a plant based food mimicking cheddar or mozzarella to be traditional cheddar or mozzarella or were unclear about applying these traditional cheese names to plant-based foods.

Table C: Cheese Type

Is this a cheddar/mozzarella cheese?	Dairy cheddar n=450 A (%)	Dairy mozzarella shreds n=450 B (%)	Dairy mozzarella slices n=450 C (%)	Plant-based food that mimics cheddar n=450 D (%)	Plant-based food that mimics mozzarella shreds n=450 E (%)	Plant-based food that mimics mozzarella slices n=450 F (%)
Yes	91 DEF	90 DEF	92 DEF	50 E	46	49
No	4	4	4	42 ABC	45 ABCDF	42 ABC
Don't know	5	6	4	8 AC	8 AC	9 ABC

Notes:
Data in each column may not add up to 100% due to rounding.
A/B/C/D/E/F indicates significance, significance is tested at the 95% confidence level.

NUTRITION

Consumers were asked if the food they evaluated is more nutritious, less nutritious, or equally as nutritious as the corresponding food (i.e., paired together were dairy cheddar and plant-based food that mimics cheddar; dairy mozzarella shreds and plant-based food that mimics mozzarella shreds; and dairy mozzarella slices and plant-based food that mimics mozzarella slices). The food shown first was randomized to minimize potential bias.

A statistically greater percentage of all consumers surveyed believe that dairy cheese is more nutritious than plant-based food that mimics cheese (Table D). However, this varies by food type purchased. Consumers who purchase plant-based foods that mimic cheese are significantly more likely to believe that these foods are more nutritious than dairy cheese (Table E).

Table D: NUTRITION

Based on what you see, do you believe Food A is more nutritious, less nutritious, or equally as nutritious as Food B?	**Dairy cheese is more nutritious** n=450 A (%)	**Equally nutritious** n=450 B (%)	**Plant-based food is more nutritious** n=450 C (%)
Cheddar	37 C	38 C	25
Mozzarella shreds	37 C	43 C	20
Mozzarella slices	33 C	44 AC	23

Notes:
Data in each row may not add up to 100% due to rounding.
A/B/C indicates significance, significance is tested at the 95% confidence level.

Table E: NUTRITION BY FOOD GROUP

Based on what you see, do you believe Food A is more nutritious, less nutritious, or equally as nutritious as Food B?	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
CHEDDAR				
Dairy cheese is more nutritious	37	42 C	33	26
Equally nutritious	38	39 C	43 C	20
Plant-based food is more nutritious	25	19	24	54 AB
MOZZARELLA SHREDS				
Dairy cheese is more nutritious	37	44 BC	33 C	18
Equally nutritious	43	43	47	36
Plant-based food is more nutritious	20	14	21	46 AB
MOZZARELLA SLICES				
Dairy cheese is more nutritious	33	40 BC	25	20
Equally nutritious	44	43	49 C	30
Plant-based food is more nutritious	23	17	25 A	50 AB

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

PROTEIN

Consumers were asked which of two corresponding foods (i.e., paired together were dairy cheddar and plant-based food that mimics cheddar; dairy mozzarella shreds and plant-based food that mimics mozzarella shreds; and dairy mozzarella slices and plant-based food that mimics mozzarella slices) they expect to have a higher quality protein content. The food shown first was randomized to minimize potential bias.

A statistically greater percentage of consumers believe that dairy cheese has a higher quality protein content than plant-based food that mimics cheese (Table F).

About one-third of consumers don't know or think that the plant-based food has higher quality protein, even though plant-based foods that mimic cheese have little to no protein content. The prevalence of consumers who don't know or mistakenly identify the higher quality protein food may be an indication that the front labeling of the plant-based foods does not clearly indicate the non-dairy nature of these foods, or the use of traditional dairy names such as cheddar and mozzarella confuses consumers, leading to the expectation of significant amounts of high quality protein in these plant-based foods.

The percentage of consumers who indicate that the plant-based foods have higher quality protein is significantly greater among plant-based food purchasers (Table G), perhaps indicating they believe their food choice is providing an adequate protein source, when in actuality plant-based foods that mimic cheese contain little to no protein.

Table F: PROTEIN

Proteins may vary in nutritional quality. Based on what you see, how do you expect the protein in Food A to compare to the protein in Food B?	Dairy cheese has higher quality protein n=450 A (%)	The protein is of the same quality n=450 B (%)	Plant-based food has higher quality protein n=450 C (%)	Don't know n=450 D (%)
Cheddar	34 CD	31 CD	21 D	14
Mozzarella shreds	32 CD	34 CD	20	15
Mozzarella slices	32 CD	33 CD	21 D	14

Notes:
Data in each row may not add up to 100% due to rounding.
A/B/C/D indicates significance, significance is tested at the 95% confidence level.

Table G: PROTEIN BY FOOD GROUP

Proteins may vary in nutritional quality. Based on what you see, how do you expect the protein in Food A to compare to the protein in Food B?	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
CHEDDAR				
Dairy cheese has higher quality protein	34	39 C	31	20
The protein is of the same quality	31	28	35	32
Plant-based food has higher quality protein	21	16	23	38 A
Don't know	14	18 B	10	10
MOZZARELLA SHREDS				
Dairy cheese has higher quality protein	32	36 C	33 C	12
The protein is of the same quality	34	33	36	30
Plant-based food has higher quality protein	20	13	23 A	42 AB
Don't know	15	18 B	8	16
MOZZARELLA SLICES				
Dairy cheese has higher quality protein	32	35 C	31	20
The protein is of the same quality	33	31	38	28
Plant-based food has higher quality protein	21	16	24 A	42 AB
Don't know	14	19 B	7	10

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

NATURAL

Consumers were asked if the food they evaluated is more natural, less natural, or equally as natural as the corresponding food (i.e. paired together were dairy cheddar and plant-based food that mimics cheddar; dairy mozzarella shreds and plant-based food that mimics mozzarella shreds; and dairy mozzarella slices and plant-based food that mimics mozzarella). The food shown first was randomized to minimize potential bias.

A statistically greater percentage of consumers believe that dairy cheese is more natural than plant-based foods that mimic cheese (Table H). However, this varies by food type purchased. Consumers who purchase plant-based foods that mimic cheese are significantly more likely to believe that these foods are more natural than dairy cheese (Table I).

Table H: NATURAL

Looking at the labels of Food A and Food B, would you consider Food A more natural, less natural, or equally natural as Food B?	**Dairy cheese is more natural** n=450 A (%)	**Equally natural** n=450 B (%)	**Plant-based food is more natural** n=450 C (%)
Cheddar	38 C	36 C	26
Mozzarella shreds	40 C	38 C	22
Mozzarella slices	37 C	38 C	25

Notes:
Data in each row may not add up to 100% due to rounding.
A/B/C indicates significance, significance is tested at the 95% confidence level.

Table I: NATURAL BY FOOD GROUP

Looking at the labels of Food A and Food B, would you consider Food A more natural, less natural, or equally natural as Food B?	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
CHEDDAR				
Dairy cheese is more natural	38	47 BC	30	22
Equally natural	36	33	41	34
Plant-based food is more natural	26	20	29	44 A
MOZZARELLA SHREDS				
Dairy cheese is more natural	40	50 BC	27	28
Equally natural	38	38	41	28
Plant-based food is more natural	22	12	31 A	44 A
MOZZARELLA SLICES				
Dairy cheese is more natural	37	46 BC	29	22
Equally natural	38	34	43	38
Plant-based food is more natural	25	20	28	40 A

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

SUBSTITUTE

Consumers were asked if the food they evaluated is a good substitute for the corresponding food (i.e. paired together were dairy cheddar and plant-based food that mimics cheddar; dairy mozzarella shreds and plant-based food that mimics mozzarella shreds; and dairy mozzarella slices and plant-based food that mimics mozzarella slices). Approximately half of consumers were asked if a dairy cheese is a good substitute for a plant-based food that mimics cheese, and the other half were asked if a plant-based food that mimics cheese is a good substitute for dairy cheese.

About one in five consumers do not believe dairy cheese and plant-based food that mimics cheese are good substitutes for each other (Table J). Dairy cheese consumers are significantly more likely than plant-based dairy consumers to disagree with the statement that plant-based food that mimics cheese is a good substitute for dairy cheese (Table K).

Table J: SUBSTITUTE

Looking at the labels of Food A and Food B, do you agree or disagree with the following statement: Food A is a good substitute for Food B?	Dairy cheddar n=226 A (%)	Dairy mozzarella shreds n=231 B (%)	Dairy mozzarella slices n=228 C (%)	Plant-based food that mimics cheddar n=224 D (%)	Plant-based food that mimics mozzarella shreds n=219 E (%)	Plant-based food that mimics mozzarella slices n=222 F (%)
Strongly/Somewhat agree that this food can be substituted	50	54	51	54	49	51
Neither agree or disagree	31	29	31 D	24	32 DF	25
Strongly/Somewhat disagree that this food can be substituted	19	16	18	22	19	24

Notes:
Data in each column may not add up to 100% due to rounding.
A/B/C/D/E/F indicates significance, significance is tested at the 95% confidence level.

Table K: SUBSTITUTE BY FOOD GROUP

Looking at the labels of Food A and Food B, do you agree or disagree with the following statement: Food A is a good substitute for Food B?	Total Sample n=>219*** (%)	Dairy Purchasers n=>109 A (%)	Dairy and plant-based food purchaser n=>68* B (%)	Plant-based food purchaser n=>21** C (%)
DISAGREE THAT DAIRY CHEESE CAN BE SUBSTITUTED				
Cheddar	19	21	14	27
Mozzarella shreds	16	18	12	23
Mozzarella slices	18	16	15	33
DISAGREE THAT PLANT-BASED FOODS CAN BE SUBSTITUTED				
Cheddar	22	33 B	14	0
Mozzarella shreds	19	27 B	9	18
Mozzarella slices	24	32 B	13	17

Notes:
/Indicates small/very sample size.*
****Sample size varies due to randomization.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

BUY

Consumers were asked which of two corresponding foods (i.e. dairy cheddar and plant-based food that mimics cheddar; dairy mozzarella shreds and plant-based food that mimics mozzarella shreds; and dairy mozzarella slices and plant-based food that mimics mozzarella slices) they would be more likely to buy. The order of the foods was randomized to eliminate potential placement bias. Consumers were then asked why they would purchase the food they selected.

As to be expected, dairy purchasers were significantly more likely than plant-based food purchasers to select a dairy cheese and vice versa (Table L). However, about 18 percent of dairy purchasers selected a plant-based food, even though these are consumers that do not purchase plant-based dairy products. This may indicate that plant-based food labels do not clearly indicate the non-dairy nature of these foods, or the use of traditional dairy names such as cheddar and mozzarella confuses consumers, leading to the selection of these plant-based foods.

Significantly more consumers indicate that they are likely to buy dairy cheese versus plant-based foods that mimic cheese because it tastes good, it is flavorful, it is a good source of calcium, habit, and it has a good texture (Table M). Consumers also noted several 'other' reasons they would purchase a dairy cheese including: it's real cheese, contains dairy, and trust the brand.

Significantly more consumers indicate that they are likely to buy plant-based foods that mimic cheese because it is healthy, it is all natural, it contains no artificial ingredients, it contains no additives, it is low in fat, it comes from a sustainable food source, it is lactose free, it is low in calories, it contains no added sugar, and it is produced in an environmentally friendly way (Table M).

Interestingly, some of the reasons consumers purchase plant-based foods that mimic cheese do not correlate with the product. Specifically, significantly more consumers indicate that they would buy plant-based foods that mimic cheese because they are low in calories, low in fat, and contain no additives. In actuality, plant-based foods that mimic cheese contain an equal or comparable amount of fat and calories and contain substantially more additives than dairy cheeses.

Table L: BUY

Based on the label, which food are you more likely to buy?	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
Dairy				
Cheddar	71	78 BC	67 C	50
Mozzarella shreds	75	86 BC	68 C	44
Mozzarella slices	70	82 BC	61 C	38
Plant-based foods				
Cheddar	29	22	33 A	50 AB
Mozzarella shreds	25	14	32 A	56 AB
Mozzarella slices	30	18	39 A	62 AB

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

Table M: WHY BUY

Why are you more likely to buy ____?	Dairy cheddar n=321 A (%)	Dairy mozzarella shreds n=338 B (%)	Dairy mozzarella slices n=315 C (%)	Plant-based food that mimics cheddar n=129 D (%)	Plant-based food that mimics mozzarella shreds n=112 E (%)	Plant-based food that mimics mozzarella slices n=135 F (%)
It tastes good	53 DEF	54 DEF	49 DEF	22	22	36 DE
It is flavorful	40 DEF	41 DEF	39 DEF	19	20	17
It is a good source of calcium	30 D	34 D	33 D	21	25	26
It is nutritious	28	28	27	32	36	37 C
It is a good source of protein	27	29	28	27	26	25
Habit, I always buy this type of product	27 DEF	28 DEF	25 DEF	7	16 D	12
It is safe to consume	26 C	22	19	22	22	27 C
It has a good texture	26 DE	23	21	16	17	19
It is healthy	23	23	20	42 ABC	39 ABC	41 ABC
It is all natural	23	20	22	33 ABC	31 B	37 ABC
It is a good source of vitamins and minerals	21	21	19	19	21	21
It contains no artificial ingredients	11	14	12	20 A	19	24 ABC
It contains no additives	11	9	10	22 ABC	27 ABC	23 ABC
It is low in fat	10	12	11	29 ABC	23 ABC	24 ABC
It has a limited number of ingredients	10	11	10	15	17	16
It comes from a sustainable food source	10	12	8	18 AC	18 AC	17 AC
It is lactose free	9	10	11	22 ABC	16	25 ABC
It is low in calories	8	8	6	27 ABC	26 ABC	21 ABC
Manufacturers are transparent about how it is produced	7	10	8	17 AC	17 AC	19 ABC
It is low in cholesterol	7	9	7	21 ABC	29 ABC	24 ABC
It contains no added sugar	7	9	7	22 ABC	17 ABC	15 AC
It is produced in an environmentally responsible way	4	7	6	16 ABC	18 ABC	16 ABC
It is good for someone with milk allergies*	-	-	-	20	25	21
Animals are not used in their production*	-	-	-	18	17	21
Other	9 DF	10 DF	11 DF	2	0	1

Notes:
Data in each column may not add up to 100% as consumers could choose more than one option.
A/B/C/D/E/F indicates significance, significance is tested at the 95% confidence level.
**Asked only of plant-based foods*

Appendix

SHOPPING HISTORY

Consumers who reported that they purchased a dairy product (cheese, milk, or yogurt) and/or a plant-based food that mimics dairy (plant-based milk, plant-based cheese made without dairy, or plant-based yogurt made without dairy milk) within the last 4 weeks qualified for this study. To mask the purpose of the study a list of common foods was presented for consumers to choose from.

Appendix Table A: SHOPPING HISTORY

Which of these foods have you purchased in the last 4 weeks?	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
Bread	81	86 C	83 C	46
Eggs	80	85 C	84 C	44
Fresh fruit	80	80 C	89 AC	52
Dairy milk	75	88 C	79	-
Dairy cheese	74	84	84	-
Pasta	65	64 C	75 AC	38
Frozen vegetables	62	58	74 AC	48
Baking ingredients (e.g. flour, sugar)	62	57	75 AC	46
Dairy yogurt	55	50	82 AC	-
Plant-based milk (e.g. almond, soy, rice)	38	-	87	76
Gluten-free bread or pasta	17	6	31 A	28 A
Plant-based cheese made without dairy milk	17	-	37	40
Plant-based yogurt made without dairy milk	16	-	35	40
Egg substitutes	14	2	31 A	22 A

Notes:
Data in each column may not add up to 100% as consumers could choose more than one option.
**Indicates small sample size*
A/B/C indicates significance, significance is tested at the 95% confidence level.

Appendix Table B: Demographics Table 1

	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
GENDER				
Female	42	42	37	60 AB
Male	58	58 C	63 C	40
AGE				
18 to 24	16	14	18	20
25 to 34	16	9	21 A	32 A
35 to 44	16	13	19	18
45 to 54	20	19	23	14
55 to 64	16	22 BC	9	8
65 or older	17	23 BC	10	8
GEOGRAPHIC RESIDENCE				
South	36	35	39	32
West	24	22	22	36
Northeast	21	22	20	22
Midwest	19	21 C	19	10
HOUSEHOLD INCOME				
Under $25,000	16	16	17	10
$25,000 - $49,999	24	21	23	38 AB
$50,000 - $74,999	21	25 B	16	18
$75,000 - $99,999	16	13	25 AC	10
$100,000 - $149,999	13	14	9	20
$150,000 - $199,999	5	5	7	2
$200,000 or more	4	5	4	2
NUMBER IN HOUSEHOLD				
1	24	27 B	15	36 B
2	34	42 B	23	30
3	19	16	25 A	16
4	16	11	24 A	16
5	5	4	8	-
6 or more	2	2	4	2
CHILDREN IN HOUSEHOLD				
Yes	36	25	57 AC	32
No	64	75 B	43	68 B

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size*
A/B/C indicates significance, significance is tested at the 95% confidence level.

Appendix Table C: *Demographics Table 2*

	Total Sample n=450 (%)	Dairy Purchasers n=250 A (%)	Dairy and plant-based food purchaser n=150 B (%)	Plant-based food purchaser n=50* C (%)
EDUCATION				
Some schooling completed, no high school diploma	1	1	3	0
High school graduate or equivalent (GED)	19	19	17	22
Some college credit, no degree	19	21	18	12
Associate's degree	11	12	10	6
Bachelor's degree	30	28	30	34
Post-graduate work, no degree	4	4	3	6
Master's degree	12	12	12	16
Professional/Doctorate degree	5	3	7	4
ETHNICITY**				
White/Caucasian	78	82 C	78 C	60
Black/African American	10	10	6	24 AB
Hispanic/Non-white	7	6	9	10
Asian/Pacific Islander	5	3	8 A	6
Native American/Aleutian Eskimo	1	1	1	-
Other	1	-	2	2
EMPLOYMENT STATUS				
Employed full-time	46	38	54 A	62 A
Employed part-time	11	10	13	10
Self-employed	7	8	6	8
Student	4	3	5	4
Retired	21	27 BC	13	10
Homemaker	5	6	5	2
Unemployed/not currently working	6	8	4	4

Notes:
Data in each column may not add up to 100% due to rounding.
**Indicates small sample size*
***Respondents could select all that apply.*
A/B/C indicates significance, significance is tested at the 95% confidence level.

FDA STATEMENT

Statement from FDA Commissioner Scott Gottlieb, M.D., on modernizing standards of identity and the use of dairy names for plant-based substitutes

For Immediate Release:

September 27, 2018

Statement From:

Español (/news-events/press-announcements/declaracion-del-comisionado-de-la-fda-scott-gottlieb-md-sobre-la-modernizacion-de-los-estandares-de)

Consumers should be able to know at a quick glance what type of product they're purchasing for themselves and their families. Implementing clear and transparent food labels and claims is an issue I've made a high priority. We've outlined these goals in a new, multi-year Nutrition Innovation Strategy (/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-fdas-new-steps-advance-health-through-improvements) released earlier this year. As part of this plan, we promised to address issues related to modernizing the outdated framework for food standards to allow industry flexibility for innovation, for example to produce more healthful foods, while maintaining the basic nature, essential characteristics and nutritional integrity of key food products.

The wide variety of plant-based foods that are being positioned in the marketplace as substitutes for standardized dairy products has been the subject of much discussion in our initial work on the Nutrition Innovation Strategy. The rising demand for plant-based products, like soy-based alternatives to cheese and nut-based alternatives to milk, has created a growing number of new food choices in supermarket aisles. However, these products are not foods that have been standardized under names like "milk" and "cheese." The FDA has concerns that the labeling of some plant-based products may lead consumers to believe that those products have the same key nutritional attributes as dairy products, even though these products can vary widely in their nutritional content. It is important that we better understand consumers' expectations of these plant-based products compared to dairy products.

Many dairy products, such as milk, yogurt and certain cheeses, have standards of identity established by regulation, which require certain components and ingredients in these foods. Names such as "milk", "yogurt" and "cheddar cheese" have long been recognized by the American public as identifying the dairy foods described in the standards. More recently, these names have appeared in the labeling of plant-based products as part of the name of the product. Some examples include "soy milk" or "almond milk" and "vegan mozzarella cheese." These plant-based products are sometimes packaged very similarly to those used for milk or yogurt, for example, and sold in the dairy section of grocery stores. However, these plant-based products may not be satisfactory substitutes for all uses of dairy. And some may not be nutritionally equivalent.

This can have significant health consequences – contributing to under consumption of key nutrients, such as calcium and vitamin D for which dairy products are good sources in the U.S. population. The risk of under-consuming key nutrients may be heightened in children if parents substitute certain plant-based beverages for milk because children have less diverse diets than adults with fewer opportunities for other foods to provide those nutrients.

The FDA supports choice and innovation in the marketplace, and we recognize that some consumers may prefer to use plant-based products instead of dairy products for a variety of reasons, including an allergy or lifestyle choice. However, we must also ensure that the labeling of such products does not mislead consumers, especially if this could compromise their health and well-being.

We're working on modernizing our standards of identity, which define through regulation certain characteristics, ingredients and quality of specific foods. These standards of identity help to ensure that consumers know "vanilla extract," for example, will always be made from vanilla beans and not artificial flavorings. We're on a fast track to take a fresh look at the labeling of products that are being positioned in the marketplace as substitutes for dairy products. And, today, we've taken the first step in this process by issuing a request for information (https://www.federalregister.gov/documents/2018/09/28/2018-21200/food-labeling-use-of-the-names-of-dairy-foods-in-the-labeling-of-plant-based-products) (RFI) in the Federal Register to solicit comments and feedback from the public to gain more insight into how consumers use plant-based alternatives and how they understand terms like "milk" or "cheese" when used to label products made, for example, from soy, peas or nuts. We're interested to know if consumers are aware of, and understand, the nutritional characteristics and differences among these products -- and between these products and dairy -- when they make dietary choices for themselves and their families.

The FDA hopes to receive new data submissions as part of this RFI to help us learn more about the nutritional profiles of different milk, modified milk, cultured milk, yogurt and cheese products compared to plant-based products (including fortified versions) that are being marketed as dairy substitutes.

The RFI opened today is an important step in our efforts to take a look at how we have been applying the Food Drug and Cosmetic Act with respect to food names and our existing standards of identity. The comments we receive will help inform the development of draft guidance to provide greater clarity on appropriate labeling of plant-based alternatives. As always, we're carefully assessing products currently on the market to determine whether any have misleading labels that would prompt us to take action to ensure that consumers are not under the misconception that their plant-based beverage is a dairy product in disguise.

Today's action is part of the agency's overall efforts to reduce chronic disease and its impact on public health. We have a unique opportunity to empower individuals who are using nutrition to improve their health and the health of their families. And we remain committed to advancing policies that enable consumers to safely benefit from innovations in how foods are produced and labeled.

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

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Dean Foods Statement

Wisconsin State Legislature
Senate Committee on Agriculture, Revenue and Financial Institutions
Public Hearing on SB 463, SB 464 and SB 466
Bills relating to labeling food as a type of milk, dairy product or dairy ingredient and granting rule-making authority

October 24, 2019

Dean Foods strongly supports the proposed bills, specifically SB 463 and SB 466, which would address the mislabeling of imitation dairy products. In the absence of any action at the federal level, we applaud action being taken at the state level to ensure that the regulations are properly enforced.

There are plant-based products called "milk" on grocery store shelves today that don't include a single drop of dairy. Even worse, consumers are being misled into believing that these imitation products are as healthy as their dairy counterparts. We thank the sponsors of this legislation for taking action and for standing up for the dairy industry, for Wisconsin's dairy farmers, for the integrity of our milk products, and for the families who rely on them for adequate nutrition.

Dean Foods Position:

Dean Foods supports enforcement by the U.S. Food & Drug Administration (FDA) of existing Standards of Identity regulations (21 CFR Parts 130 – 135) that exclusively reserve the use of dairy terminology to standardized dairy products (21 CFR Parts 101.3, 101.4). We oppose the current practice that enables plant-based products, which are often nutritionally inferior and positioned as dairy substitutes in the marketplace, to utilize dairy terms, including 'milk', on products that contain no milk and do not meet standardized definitions for dairy products, as defined by the FDA.

The Dean Foods family of brands provides some of the most nutritious products in the grocery store. We are proud of the role we play in bringing wholesome, good-for-you products to consumers. Nutrition and public health experts agree that milk and dairy products are an important part of a healthy diet, providing calcium, Vitamin D and a host of other nutrients naturally.

With this in mind, we believe it is wrong that many plant-based products are marketed using milk's good name, yet are lacking many of the inherent nutrients of their dairy counterparts. While milk and milk products are legally obligated to abide by FDA regulations with respect to use of dairy terms, most of our plant-based competitors are running afoul of these same regulations and are given free rein to innovate with various formulas and ingredient profiles and label the product in whichever way they choose.

We recognize that consumers may choose to purchase plant-based products for a variety of reasons and we support consumers having options from which to choose – both dairy and plant-based products alike. We believe these products can and should co-exist; however, plant-based dairy imitators and alternatives must be properly labeled.

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About Dean Foods:

Dean Foods is a leading food and beverage company and the largest processor and direct-to-store distributor of fresh fluid milk and other dairy and dairy case products in the United States. Headquartered in Dallas, Texas, the Dean Foods portfolio includes DairyPure®, the country's first and largest fresh, white milk national brand, and TruMoo®, the leading national flavored milk brand, along with well-known regional dairy brands such as Alta Dena®, Berkeley Farms®, Country Fresh®, Dean's®, Friendly's®, Garelick Farms®, LAND O LAKES®* milk and cultured products*, Lehigh Valley Dairy Farms®, Mayfield®, McArthur®, Meadow Gold®, Oak Farms®, PET®**, T.G. Lee®, Tuscan® and more. In all, Dean Foods has more than 50 national, regional and local dairy brands as well as private labels. Dean Foods also makes and distributes ice cream, cultured products, juices, teas, and bottled water. Approximately 15,000 employees across the country work every day to make Dean Foods the most admired and trusted provider of wholesome, great-tasting dairy products at every occasion. For more information about Dean Foods and its brands, visit www.deanfoods.com.

*The LAND O LAKES brand is owned by Land O'Lakes, Inc. and is used by license.
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