LOREN OLDENBURG
STATE REPRESENTATIVE • 96th ASSEMBLY DISTRICT

Assembly Bills 515, 516 & 518

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

Assembly Committee on Agriculture

November 6, 2019

Good Morning, Chairman Tauchen, and committee members. I want to thank you for your willingness to hear Assembly Bills 515, 516 & 518. 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. Assembly Bills 515, 516 & 518 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, Assembly Bill 518 - 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 Assembly Bills 515, 516 & 518.

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Rep.Oldenburg@legis.wi.gov

HOWARD MARKLEIN
STATE SENATOR • 17TH SENATE DISTRICT

November 6, 2019
Assembly Committee on Agriculture Testimony on Assembly Bill (AB) 515, AB 516, and AB 518

Thank you Chairman Tauchen and committee members for hearing Assembly Bill (AB) 515, AB 516, and AB 518, which create truth in food labeling laws to support Wisconsin's agriculture economy and alleviate consumer confusion. Thank you Chairman Tauchen, Rep. Tranel, Rep. Edming, Rep. Novak, Rep. Pronschinske, and Rep. VanderMeer for co-authoring all three pieces of important legislation.

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.

AB 515, 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!

AB 518, 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

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wing", or "bacon", illegal. This legislation would apply to packaging on products sold in stores, menus in restaurants, and promotional materials.

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.

AB 516, 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 AB 515, 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.

AB 515, AB 516, and AB 518 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.

PLANT BASED
FOODS ASSOCIATION

To: Assembly Committee on Agriculture

Re: Opposition to AB 515, AB 516 & AB 518

Date: November 6, 2019

The Plant Based Foods Association (PBFA) was founded in 2016 to represent the interests of companies producing plant-based meat and dairy alternatives. Today the association has grown to include 160 member companies, ranging from small start-up food companies to established brands to ingredient suppliers. Many of our members make and sell dairy alternatives, including plant-based milk, cheese, yogurt and ice cream using American grown agricultural commodities.

PBFA is opposed to these bills because we believe that they are solutions in search of problems. Our member companies selling dairy and meat alternatives already use qualifiers such as "non-dairy", "dairy-free", "plant-based", and/or "vegan" to make their labels clear to consumers.

We also take action to ensure that consumers are fully informed. That is why PBFA has established industry guidance for the labeling of plant-based milks and dairy alternatives. These include recommendations that labels clearly identify the main ingredient as part of the word "milk" or be labeled as a "plant-based milk," along with an easy to read disclosure of the main ingredient. We also recommend that the principal display panel contain the words "dairy-free" or "non-dairy," as these are the phrases that are the most meaningful to consumers to indicate that these products do not contain animal milk.

PBFA is also finalizing similar industry guidance for the wide range of plant-based meat products currently in the marketplace.

PBFA is developing these standards to promote consistency in labeling across the categories because we want shoppers to have no doubt about what they are buying. We believe that this approach ensures an open and competitive marketplace without the need for government intervention.

The three bills before you would have the effect of setting Wisconsin apart from the rest of the United States when it comes to how these products are presented to consumers.

PLANT BASED
FOODS ASSOCIATION

These bills would promote costly new regulatory systems creating differing Wisconsin-based labeling standards; state agencies would now be in the position to interpret and enforce their provisions. The bills are ambiguously drafted and raise many questions about what might or might not be prohibited forcing Wisconsin regulators to make decisions impacting manufacturers, grocers and consumers that would be completely different than anywhere else in the US.

Additionally, the three bills raise significant legal concerns. These food alternatives are in full compliance with current FDA regulations by using "common and usual" names on labels, such as "soy milk" or "almond milk." As such, attempts to impose new restrictions run afoul of First Amendment protections allowing companies to label their foods with clear, non-misleading terms.

While true that some states have enacted laws pertaining to labeling of meat and milk products, there are important points to note. Labeling bills passed in several states are much more carefully written in ways that ensure properly labeled plant based meats comply with state laws. Laws in Arkansas, Missouri and Mississippi are all under court challenge, however under legal pressure, Mississippi has amended its proposed rules to allow for appropriately labeled plant-based meats.

It is inaccurate to believe that federal regulators are not addressing these issues. The US Food & Drug Administration is completing a formal review of standards of identity pertaining with an eye to whether plant-based milk products are causing consumer confusion. We fully support this FDA process because we believe that this issue is best left to be determined on a federal level with input from all concerned parties, rather than enacted on a state-by-state basis.

To be clear, use of the terms "milk", "cheese", "meat" or "burger" by plant-based food companies is not meant to diminish the value of cow's milk produced by Wisconsin dairy farmers nor the quality of beef and animal products. Rather, we believe these terms have been understood and accepted in the marketplace as the common and usual names for more than 30 years and are clearly understood by shoppers.

While we understand and fully empathize with the challenges that the dairy industry faces here in Wisconsin and elsewhere, we don't believe that governments should be in the position of choosing one industry over another. There is room in the market for all of us.

For these reasons and others, we must respectfully oppose AB 515, AB 516 & AB 518.

DBA

DAIRY BUSINESS ASSOCIATION | DAIRY FORWARD

Testimony in Favor of AB 515, AB 516 and AB 518
November 6, 2019

Good morning, my name is Chad Zuleger and I am the associate director of government affairs for the Dairy Business Association. Thank you Chairman Tauchen, Ranking Member Considine and the rest of this committee for allowing me to speak with you today regarding DBA's support for Assembly Bills 515, 516, and 518. We appreciate the leadership shown by Representatives Tranel and Oldenburg 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 also 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. It found 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 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 already occurred in the dairy space.

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

WISCONSIN CHEESE MAKERS ASSOCIATION

DAIRY FARMERS OF WISCONSIN

Edge

DBA

DAIRY BUSINESS ASSOCIATION | DAIRY FORWARD

Testimony in Favor of AB 515, AB 516 and AB 518
November 6, 2019

Good morning, my name is Greg Siegenthaler. I serve on the Board of Directors with the Dairy Business Association. I want to thank Chairman Tauchen, and the committee members for giving me the opportunity to speak with you today regarding these three labeling bills.

Together with my family, I run a cheese factory, Grande Cheese, based in Fond du Lac with facilities located throughout central and southeastern Wisconsin. This gives me a direct interest in two of three bills being considered at today's hearing. I do have thoughts related to the meat labeling bill and will share those as part of my testimony as well.

First, I want to speak to you regarding AB 516, 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 coopted, but it is far from the last. Assembly Bill 516 addresses other dairy products that are increasingly facing similar challenges as milk 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 union, Wisconsin, the Dairy State, 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. Meat labeling is addressed in AB 518. 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 and foresight 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 this committee 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 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.

WISCONSIN GROCERS ASSOCIATION

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WisconsinGrocers.com

MEMORANDUM

TO: Members of the Assembly Agriculture Committee

FROM: Wisconsin Grocers Association

DATE: November 6, 2019

RE: Assembly Bills 515, 516 & 518 re: labeling of meat, cheese and dairy products.

On behalf of Wisconsin Grocers Association (WGA), we would like to share our concerns with Assembly Bills 515, 516, and 518 relating to labeling of meat, cheese and dairy products. While we support Wisconsin's meat, cheese and dairy producers and the intent of this bill, we are concerned with the impact and cost to retailers to police the labeling requirements.

In general, WGA and our members are concerned when mandatory labeling bills are introduced. Usually intended to affect product manufacturers, it also falls upon retailers to determine if products they are selling are labeled correctly. As part of Wisconsin law, modeled after the FDA Model Food Code, retailers are responsible for proper food labeling, whether related to the name of the product, nutrition facts, weight and content, food allergans, and manufacturer information.

In addition, many WGA retail and warehouse members offer private label products which are manufactured goods available under a specific retailer or company brand. Private labels include meat, cheese and dairy products as well as plant-based foods. The increased cost of the necessary labeling changes would be significant and would inevitably be passed on to consumers through higher prices of those products.

Retailers on average offer 50,000 to 80,000 different products. Many retailers like to offer local products from small, local manufacturers and producers. As retailers are already responsible for proper food labeling, these proposals would add another layer of responbility that retailers must consider each time they are adding a new product to their existing inventory. Local, small manufacturers and producers do not have the same resources as national manufacturers, and therefore retailers must be more diligent with the labeling of these products.

-continued-

Our biggest concerns relate to the retail costs which include the cost of uncompliant products and the potential fines and penalties that could be applied to a retailer. As mentioned, retailers are subject to existing law and the Wisconsin Food Code which requires accurate food labeling. Penalties for non-compliance are found in Statute 97.72 and read, "Any person who violates any of the provisions of this chapter for which a specific penalty is not prescribed shall be fined not less than $100 nor more than $1,000 or imprisoned for not more than 6 months, for the first offense; and for each subsequent offense, fined not less than $500 nor more than $5,000, or imprisoned for not less than 30 days nor more than one year in the county jail or both."

DATCP has said that it is rare that these penalties would be imposed, but they are extremely high and concerning nonetheless. According to DATCP, the usual procedure to address misbranded products consists of the inspection staff ordering the retailer to remove the product from the shelf and not offering it for sale. Attached you will find a memo outlining these procedures for current law which states that only a product made from cow's milk or cream can be labeled as butter. As you can see in the memo, if products are mislabeled, it is the retailer's responsibility to 1) work with the manufacturer to make label corrections before the product is available for sale; 2) return the product for a credit; or 3) discard the product. All of these scenarios are difficult for a retailer with the easiest option being to discard the product and taking a financial hit on the loss.

In summary, while we understand the intent of the bill, we believe that efforts should focus on labeling and definitions of plant-based foods and assign the responsibility for proper labeling to the manufacturer based on agreed upon definitions.

We hope you will take into consideration our concerns as you deliberate these issues. Please let us know if you have any questions.

State of Wisconsin
Governor Tony Evers

Department of Agriculture, Trade and Consumer Protection
Bradley M. Pfaff, Secretary

TO: Retail Food Establishment Operators
FROM: Dr. Steve Ingham, Division Administrator
Division of Food and Recreational Safety
RE: Requirements for Selling Butter Products in Wisconsin

A reminder that as a retail food establishment in Wisconsin, your store must meet the requirements of the Wisconsin Food Code (Wis. Admin. Code ATCP 75 Appendix). The Wisconsin Food Code states that all food received at a retail food establishment must be obtained from sources that comply with the law. Packaged food that is received and then sold at your business must be labeled to meet federal and state regulations.

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) continues to receive reports of labeling violations related to butter. Butter and imitation butter products that do not meet the requirements described below must not be sold in Wisconsin retail food establishments.

All butter sold at retail in Wisconsin must be graded in accordance with either the Wisconsin or federal grade standards. The butter's grade must be on the package. Images A and B show packages of ungraded butter. Imported butter that has not been graded cannot be sold at a retail food establishment in Wisconsin. DATCP has procedures by which employees of foreign or out-of-state butter companies can become licensed as Wisconsin butter graders and then grade their company's butter. When these procedures are followed, the Wisconsin butter grade may be indicated on the package.

Image A. Package of ungraded butter.

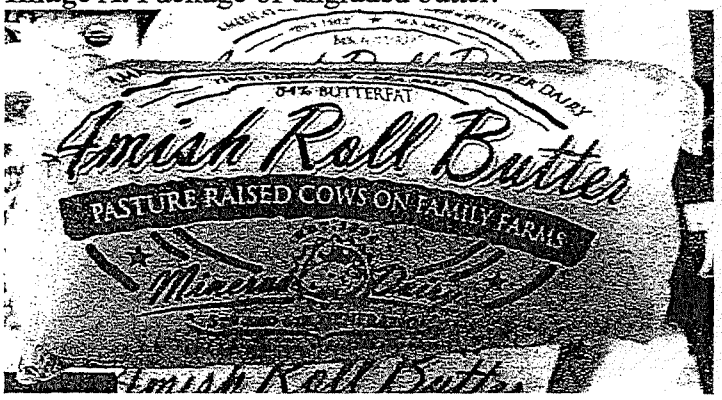
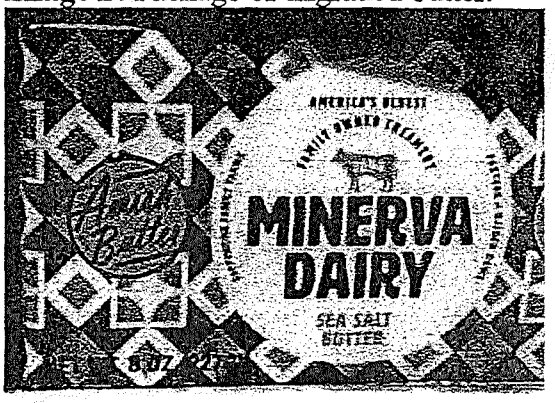


Image B. Package of ungraded butter.



Only a product made from cow's milk or cream can be labeled as "butter." In accordance with food labeling regulations the statement of product identity on a food package must be accurate. Butter is defined in federal and state law as being made from cow's milk or cream. By definition, a vegan product (see Images C and D for examples) cannot be legally labeled and sold as butter. These products might be labeled as imitation butter or imitation margarine. Alternatively, the products might be labeled as a vegetable oil spread.

Image C: Product improperly labeled as butter.

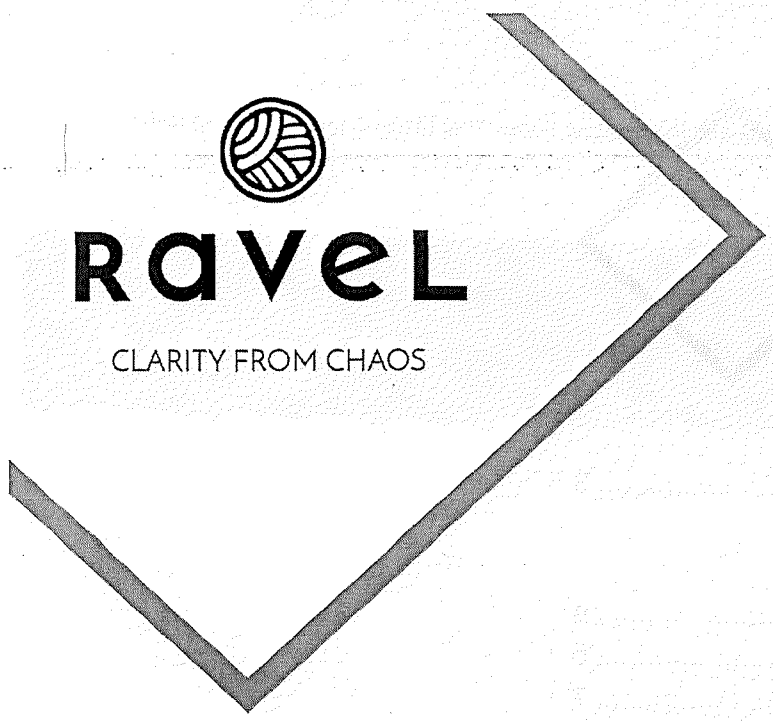
Image D: Product improperly labeled as butter.

If you receive butter or an imitation butter product that appears to not meet labeling requirements, any of the following actions would comply with state law:

- Working with the food manufacturer to make label corrections before the product is available for sale.
- Returning the product for a credit.
- Discarding the product.

For assistance with labeling requirements, contact DATCP's retail food specialists at datcpdfrsretail@wisconsin.gov. Resources for food labeling requirements can also be found at https://datcp.wi.gov/Pages/Programs_Services/FoodLabeling.aspx.

Statutory citations: Wis. Stats. 97.01(1r) – definition of butter; 97.10(1) – prohibition against selling misbranded food; 97.176(1) and (2) – butter grading requirements. 21 US Code 321a – definition of butter.
Regulatory citations: ATCP 75 Appendix 3-201.11(A) - sources that comply with law; 3-201.11(C) – packaged food labeled as specified in law.



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.

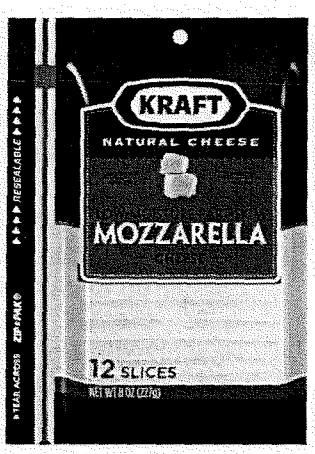
- Ravel, LLC partners with select, proven national online panels to provide quality targeted samples.
- Data collection period was December 21, 2018 through December 30, 2018 and paused for the holiday on December 24 and December 25.
- Ravel, LLC promoted data quality by ensuring that questions were 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

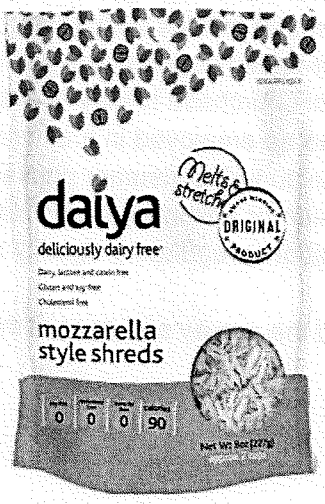
Dairy Mozzarella Shreds



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.

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%

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

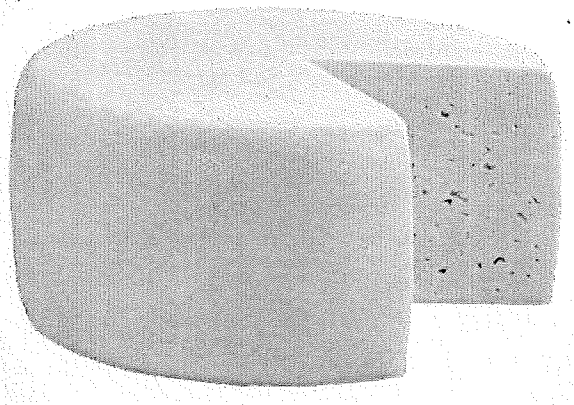
27% 21% 26%

low in fat

29% 24% 23%

contain no additives

22% 23% 27%



INGREDIENTS

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

24% 21% 25%

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

WISCONSIN CHEESE MAKERS ASSOCIATION

DAIRY FARMERS OF WISCONSIN

Edge

Lauer, Ethan

From: Rep.Tauchen
Sent: Friday, November 15, 2019 2:19 PM
To: Lauer, Ethan; Rep.Tauchen; Rep.Novak; Rep.Kurtz; Rep.Tranel; Rep.Kitchens; Rep.VanderMeer; Rep.Mursau; Rep.Edming; Rep.Pronschinske; Rep.Plumer; Rep.Considine; Rep.Vruwink; Rep.Kolste; Rep.Spreitzer; Rep.Myers
Subject: Additional Testimony Regarding Food Labeling and Enforcement
Attachments: 11.6.19 Marklein Labeling Testimony.pdf; AttachA.Ravel, Study on Dairy Cheese and Plant-Based Foods that Mimic Cheese (Jan. 17, 2019).pdf; Plant-based Cheese Report Summary.pdf

Committee Members-

Here is additional information we have received regarding the food labeling bills. Please keep for your own records.

-Craig Arrowood
Agriculture Committee Clerk

DATCP about their enforcement process for products that are "mislabeled". Here is the response that we received:

The Bureau of Food and Recreational Businesses (BFRB) may begin progressive compliance action in a retail food establishment when a sanitarian identifies a public health/safety concern during an inspection at a business. If a BFRB sanitarian observes and documents a significant number of violations, chronic or acute, or violations repeated across multiple inspections, the sanitarian will begin a progressive enforcement process. The BFRB may also begin a progressive compliance action in response to investigation of a complaint raised by industry, consumers, or other agencies. The BFRB generally allows the business to correct minor deficiencies when noted or observed. The BFRB strives to keep compliance actions proportional to public health risk.

Steps in the Progressive Compliance Process: The steps that may be taken in the progressive compliance process, in order of increasing severity, are listed. This order may be adjusted, however, depending on the specific public health risks associated with a situation and/or actions taken by the operator. In extreme cases, the severe steps of immediate closure or summary suspension of a license may be taken.

Routine Inspection → Administrative Follow-up → Warning Letter → Re-inspection → Administrative Conference → Re-inspection → Enforcement Conference → Re-inspection → Conditional License or Voluntary Compliance Agreement → Suspension or Voiding of License

Overall, if an inspector were to find a food item from an unapproved source (meaning that it does not comply with law – either adulterated or misbranded) offered for sale in a licensed establishment, the inspector will request that the operator remove the unapproved item(s) from the shelves and not continue to offer it for sale to consumers. The operator has the option to hold it for return to the manufacturer or dispose it at their discretion. The administrative follow-up would be that the next time the inspector came into the establishment, the inspector may check to make sure that those food items are not being offered for sale.

In almost all cases, that ends the matter. An example of this was when staff found non-graded butter (Minerva) being sold at retail food establishments.

Here are two relevant articles Rep. Tranel mentioned today in cmte regarding the food labeling bills. Please distribute to committee members. Thank you so much!

Fake milk is real news, as synthetic alternatives threaten traditional dairy farms

Survey shows plant-based food label confusion

Survey shows plant-based food label confusion

Wednesday, January 23, 2019 (0 Comments)
Posted by: Jamie Mara, director of public relations

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FOR IMMEDIATE RELEASE
Wednesday, Jan. 23, 2019
Contact: Jamie Mara, director of public relations
Edge Dairy Farmer Cooperative
(920) 209-3990 | jmara@voiceofmilk.com (mailto:jmara@voiceofmilk.com)

Survey shows plant-based food label confusion

Wisconsin dairy groups release customer research on products that mimic cheese

MADISON, Wis. — In a marketplace increasingly crowded by plant-based imitation dairy products, the results of a new survey show that customers are confused about whether those products are indeed dairy foods and whether they carry the same nutritional value.

The research evaluated three plant-based foods that mimic dairy cheese to understand if the packaging and descriptions are confusing. The survey, conducted by Ravel, was commissioned by Wisconsin Cheese Makers Association (WCMA), Dairy Farmers of Wisconsin and Edge Dairy Farmer Cooperative, based in Wisconsin.

The findings were included in comments that WCMA and Edge submitted to the U.S. Food and Drug Administration, which is collecting public input as the agency considers changes to its enforcement of non-dairy labeling rules.

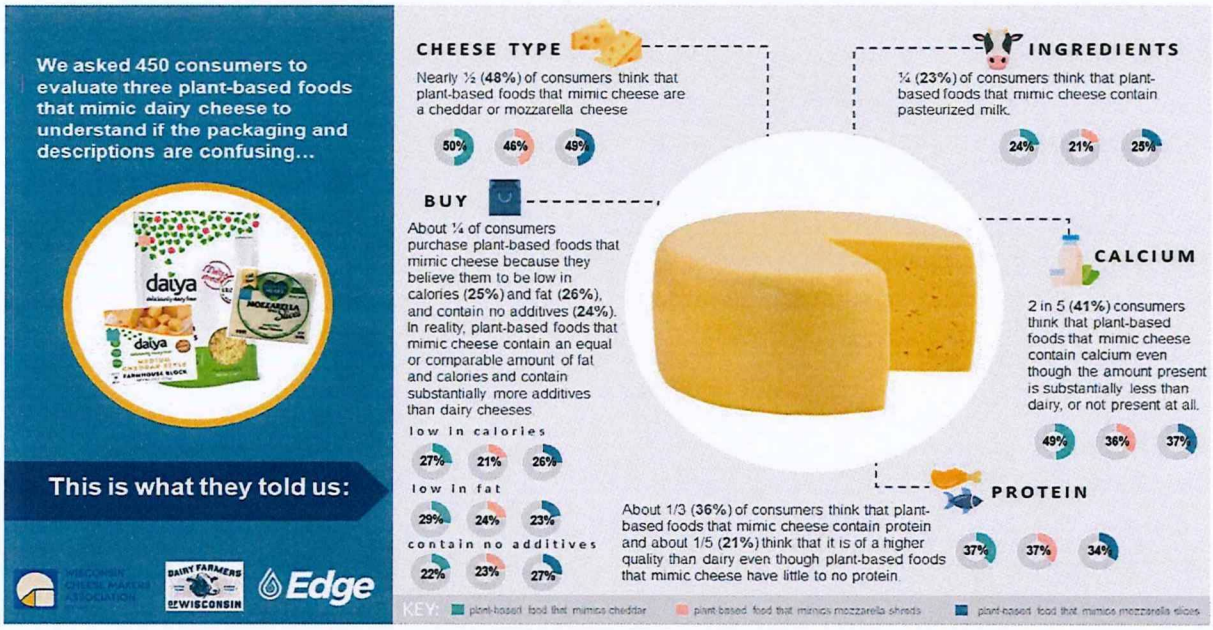
"Consumers deserve complete clarity as they choose what to eat, and how to feed their families. Our research proves that mislabeling leads people to believe that the nutritional content of plant-based products is equivalent to that of dairy, which is simply not true and potentially harmful to public health," said Rebekah Sweeney, director of communications, education and policy for the cheese makers group. "WCMA members encourage the Food and Drug Administration to enforce labeling standards to help consumers make well-informed choices at the grocery store."

Among the national survey's findings:

- Nearly half of customers indicated that plant-based foods that mimic cheddar and mozzarella cheese were actually cheese.
- About one-quarter of customers said they don't know what ingredients are in the plant-based imitations. The same percentage mistakenly thought the products contained milk.
- About one-third of customers think that plant-based foods that mimic cheese contain protein, and twenty-one percent think that it is of a higher quality than dairy

even though the imitations have little to no protein. Real dairy cheese has 7 grams of protein.

- About one-quarter of customers purchase plant-based foods that mimic cheese because they believe them to be low in calories and fat and without additives. In reality, these plant-based foods contain an equal or comparable amount of fat and calories and substantially more additives than dairy cheeses.



"The Ravel survey findings are similar to other consumer surveys pertaining to food — consumers don't know what's in the food they eat regardless of what they hear," said Patrick Geoghegan, senior vice president, marketing and industry relations at Dairy Farmers of Wisconsin. "The next phase is to understand why consumers associate dairy and non-dairy products with differing attributes."

Brody Stapel, president of Edge Dairy Farmer Cooperative and a dairy farmer in eastern Wisconsin, said the survey demonstrates that words do matter.

"These misperceptions about non-dairy foods are real. The imitations confuse customers who rely on names and product packaging to make judgments about a food. Those customers deserve transparency," said Stapel, whose group represents its member farmers throughout the Midwest on federal policy. "Our dairy farmers and processors work hard to produce incredible food. Milk and dairy products — real dairy foods — offer almost unbeatable nutritional value, and customers deserve to know this.

"The FDA should move to aggressively enforce its existing regulations, which clearly define milk, cheese and other dairy foods as originating from a cow, not a plant."

Attachments:

- Study background and executive summary (/resource/resmgr/docs/alerts/dairy_plant-based_product_ev.pdf)
- A graphic that breaks down key findings (/resource/resmgr/docs/alerts/plant-based_cheese_report_su.pdf)

About Wisconsin Cheese Makers Association

Since 1893, Wisconsin Cheese Makers Association has represented manufacturers of dairy products, as well as companies that process, market, or distribute cheese and support the industry with supplies and services. Today, WCMA's 600+ member companies and cooperatives operate across the country and around the world. WCMA serves members as a strong policy advocate, networking hub, and trusted source of education and information.

About Dairy Farmers of Wisconsin

Funded by Wisconsin dairy farmers, Dairy Farmers of Wisconsin is a non-profit organization that focuses on marketing and promoting Wisconsin's world-class dairy products. For more information, visit our website at wisconsindairy.org.

About Edge Dairy Farmer Cooperative:

Edge Dairy Farmer Cooperative provides dairy farmers throughout the Midwest with a powerful voice — the voice of milk — in Congress, with customers and within their communities. Under the Federal Milk Marketing Orders, the co-op also provides milk testing verification services and market information. Edge, based in Green Bay, Wis., is one of the top cooperatives in the country based on the amount of milk produced by its members. For more information, visit voiceofmilk.com.

BUSINESS NEWS

Fake milk is real news, as synthetic alternatives threaten traditional dairy farms

To prevent consumers from becoming confused between regular milk and plant-based milk, dairy farmers are asking the FDA to enforce the definition of milk as "lacteal secretion from milking one or more healthy cows."

There are just over 40,000 dairy farms in the U.S., down from 650,000 in 1970.

Trevor Hagan / Bloomberg via Getty Images file

Feb. 19, 2019, 1:40 PM CST

By Cassie Slane

The old question "Got milk?" has a complicated answer these days, because it all depends on what you mean by "milk."

Consumers could soon be faced with confusion in the dairy aisle as they wonder if the milk they're drinking came from a cow – or was made in a lab.

Perfect Day Foods is one company creating a synthetic milk alternative. It's similar to milk in that it consists of casein and whey, the proteins found in milk. However, a cow was never used to produce their product. Instead, the animal-free dairy product is made in a lab using genetically engineered yeast programmed with DNA to produce the same proteins found in cow's milk.

Silicon Valley-based Perfect Day Foods says its animal-free milk is better for the environment and healthier than cow's milk because it's lactose-free, hormone-free, antibiotic-free, gluten-free and cholesterol-free. The company also claims the product tastes more like milk than other plant-based milk alternatives. Plus, its overall environmental impact is substantially lower than that of conventionally produced milk, according to a preliminary report by The University of the West of England.

While some vegan consumers may be excited about the new alternatives coming to the market, dairy farmers aren't. Many small dairy farmers are worried this new "fake milk" will confuse consumers and could put them out of business as they already face extinction from an oversupply of milk, increased competition from plant-based dairy alternatives, and industrial farming.

The U.S. dairy industry has been under extreme pressure recently, experiencing a sales decline since 2014, which is expected to continue until 2020, according to a report by Mintel. As a result, dairy farms have been closing in record numbers. In 1970 there were nearly 650,000 dairy farms in the U.S., but just 40,219 remained at the end of 2017, according to the U.S. Department of Agriculture.

Mike Eby, Chairman of the National Dairy Producers Organization and a seventh-generation dairy farmer, was forced to sell his herd of 60 dairy cows two years ago because he, like many others, couldn't compete with corporate agriculture and the continuing decline in milk prices. He is worried Perfect Day's product is so similar to milk's composition that it could look and be labeled like milk produced from a cow, making it difficult for a consumer to decipher.

"If [processors] are successful in considering Perfect Day as milk, they [could] use Perfect Day to make ice cream or yogurt or cheese," Eby said. "And the worst part about it would be that it wouldn't be labeled as such. No one would know the difference and they would actually claim there is no scientific difference."

Dairy advocates say Perfect Day's product is so similar to milk's composition that it could look and be labeled like milk produced from a cow, making it difficult for a consumer to decipher. Perfect Day

Currently, the Food and Drug Administration allows makers of almond milk, soy milk, and rice milk to label their products as "milk." In countries such as England and Canada, where they are much more protective of dairy farming, those plant-based products aren't permitted to use the word "milk," and must use alternatives like "beverage" or "drink." Many U.S. dairy farmers are fighting the FDA to enforce the definition of milk as "lacteal secretion" produced by "the complete milking of one or more healthy cows." While the FDA has the definition in place, historically it hasn't enforced it.

"It appears that the FDA is not very farmer friendly; they are more processor friendly," said Eby. "So if history is our guide, look no further than to see how they have not taken proper care of the word 'milk' and they've allowed it to be exploited. So why would anyone think that this is any different?"

This week, Perfect Day Foods announced it had raised $34.75 million, bringing its total fundraising so far to $60 million. The company received $24.7 million in investments last year, making its product one of the most-backed early-stage food tech startups ever. Lab-grown meat companies such as Memphis Meats and Future Meat Technologies have garnered the interest of billionaire investors such as Bill Gates and Richard Branson, and food giants Tyson Foods and Cargill.

Kate Krueger, research director at cellular agriculture non-for-profit New Harvest, said there are significant benefits to making food products in a lab.

“When you make something in a lab, you’ve got a lot more control over it and what goes into it,” Krueger told NBC News. “So that means you make it healthier, you can make it more delicious, you can make it different; different from what you can produce otherwise.”

But many farmers are cautious about putting America's food supply in the hands of Silicon Valley investors instead of Lancaster County farmers.

“I think it’s more about making money than it is anything else,” said Lorraine Lewandrowski, an agricultural lawyer who represents farmers in New York and Pennsylvania. “I don’t see them pouring their heart and soul into land or people going for generations trying to hang on to a farm or people who are little farmers who work with their community. They’re the volunteer firemen, they’re on the board of education, they’re committed to an area. I don’t see that with these guys. They will go wherever the money is.”

In addition to the typical dairy items, Perfect Day's animal-free dairy proteins could also wind up in a lot more products after the company penned a partnership with Archer Daniels Midland, one of the world’s largest food ingredient providers.

"Instead of Perfect Day, Call it Perfect Storm," said Eby. "Because that's exactly what's been happening to the dairy industry. And it's coming at the worst time possible."