

# Food & Beverage Insider

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## Formulating for Success in the Dairy Alternative Aisle



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**4**

Viewpoint: Moo-ve over dairy

**5**

The evolving market for dairy alternatives

**8**

A closer look at dairy alternative beverages

**10**

Got milk? A question that can define your product's identity

**13**

When it comes to coconuts, FDA is nuts

**16**

Milking it: Dairy-free options just keep getting better

**23**

Flavor, function propel oat and other dairy alternatives

**26**

Rise of the conscientious consumer, dairy alternatives and the hemp industry

**30**

Sustainability and health concerns dairy-free market

**32**

CPG brands give the scoop on nondairy alternatives

**35**

None of the dairy, all the taste

**37**

Market analysis: Dairy alternatives are disrupting the traditional dairy aisle



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# Moo-ve over dairy, plant-based alternatives disrupting the industry

**R**ising demand for dairy alternatives is giving conventional dairy counterparts a run for their money and causing innovation and disruption in the marketplace. Increased interest in these products stems from many drivers, including the avoidance of dairy allergens; the desire for clean label products; compatibility with vegetarian, vegan and flexitarian lifestyles; and concerns about sustainability and animal welfare.

In this digital magazine, we'll examine how improvements in plant-protein formulation options, coupled with greater formulation expertise, offer product developers the opportunity to capitalize on this consumer appetite for plant proteins in a variety of dairy alternative products.

Our formulation articles discuss the range of ingredients that provide product developers the necessary tools to create the satisfying taste and indulgent richness consumers expect from traditional dairy applications in dairy-free formats. We also address formulation challenges and solutions to create a winning dairy-free product.

In our Brand Roundtable, we hear firsthand from Mooala, Alden's and siggi's about lessons learned from their efforts to develop dairy-free products. Our In the Aisle column highlights how dairy alternative brands, such as Elmhurst, Miyoko's, Rucksack and others, are expanding their product lines and innovating in terms of both flavor and format to capture plant-based converts.

Finally, our Market Analysis ([page 37](#)) provides in-depth analysis of market growth opportunities for brands looking to play in the dairy alternative aisle. This larger plant-based nutrition movement has been shifting into high gear at our [SupplySide and Food ingredients North America \(FiNA\)](#) shows, where food and beverage executives

connect with ingredient buyers and suppliers across the health and nutrition marketplace. Brands, such as yours, take those new and novel ingredients back to the lab to create healthy, natural and organic products—many of which will be launched at next month's [Natural Products Expo West](#) show in Anaheim March 3-7.

More than 90,000 attendees will be at Expo West, and I hope you'll take the time to explore all that the show has to offer. With an expo hall featuring 3,500+ exhibitors of food and natural products, hundreds of hours of workshops and education sessions, and networking opportunities across five days, there is so much that can propel your business forward.

I invite you to connect with me on LinkedIn and Twitter to continue the dialogue about how industry is striving to create more food for more people while keeping sustainability top of mind.

Cheers,



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# The evolving market for dairy alternatives

by Alison Pomaville



**T**he dairy case at the grocery store looks very different from 10 years ago, let alone 50 years ago, with an expanding assortment of plant-based milk options and lactose-free products. Countless consumer surveys report no substantial rise in veganism or vegetarianism, but rather a noticeable increase in a category of consumers the industry has coined “flexitarians.”

Flexitarians are those seeking to reduce their overall animal-based consumption, including meat and dairy products. Today’s consumers are choosing plant-based dairy, specifically, for varying reasons: animal welfare, environmental concerns and personal nutrition, to name a few. This shift, paired with the advances in product development, has made it easier for consumers to either add plant-based dairy along with animal-based dairy, or replace it altogether.

Soy milk is often credited with starting the specialty category of plant-based milk, but other sources like almond, coconut, rice and the newest rock star, oat, have all had gains in market share. Most plant-based milks provide significantly less protein than dairy milk, aside from soy which matches. This is where plant protein concentrates can step in and close the gap.

One area where brands can differentiate is added protein in concentrate form to boost the overall protein per serving. Some challenges might arise, such as negative flavor or texture impact since most plant proteins are not 100% water-soluble. This can be overcome with quality research and development (R&D) and the appropriate production protocol. Claims surrounding protein are so impactful that the added formulation challenges will be worth it as consumers look to add more protein to their diet. A direct, front-of-label claim related to protein can boost the chance of success with a new product launch.

Currently, only a few protein-fortified plant milks are on the market, including ones featuring pea protein and faba bean protein. Formulators looking to enhance their plant milk with a protein concentrate have other options with popular and innovative sources, such as pumpkin seed, lentil and chickpea, that offer more



consumer appeal than longstanding sources like soy and rice. With this vast range of options, protein fortification is a prodigious opportunity for brands to either line extend or create completely new products.

Plant-based dairy alternatives are indisputably growing faster and taking market share from animal-based dairy, causing a disruption in the dairy industry.

Consumers may limit or remove lactose from their diets for a variety of reasons, and in the past, this meant having to avoid dairy altogether. Today, however, that is generally not the case.

Dairy formulators can use processing tweaks to alleviate the main concern of lactose. Brands have created more options for lactose-free dairy in the form of milk, cheese, creamers and ice cream.

Formulators starting with a lactose-free dairy ingredient can feel like they have a head start when it comes to protein, especially in sports nutrition products, where protein is so explicitly sought-after. Nevertheless, that does not mean plant-based sports nutrition products have no room in the market.

Many athletes tout their plant-based diets. Both plant-based and lactose-free dairy have a place in sports nutrition, but as the market continues to get crowded, innovation and other functional benefits are needed. Formulators can look to botanicals for other added functions associated with protein. For example, formulators can add a natural caffeine boost to milk or incorporate ingredients that help with recovery, such as beet and arugula, to keep hardcore athletes and weekend warriors all performing at their best.

Following protein, the macronutrient most sought-after by consumers is fiber, as consumers often know it is an important part of a healthy diet, but few eat the recommended amount. Incorporating more fiber into plant-based dairy alternatives offers consumers a convenient way to increase their overall fiber intake. Along with the nutritional benefits, fibers can provide textural enhancements to plant milks, yogurts, creamers and frozen desserts. This clean label, consumer-friendly source can be a differentiator, as plant-based dairy is often criticized for using gums and stabilizers that consumers perceive as negative.

Although consumers are choosing plant-based milks for varying reasons, taste still plays a role, as it is a huge driver with any food or beverage purchase. Regardless of segment, consumers expect a great-tasting product. The dairy alternative market is so saturated that subpar products will not last. Brands need to innovate, not just nutritionally but also with respect to flavor profile and enjoyment occasions.

Formulators can find inspiration for flavor profiles by looking to other trends in the food and beverage sector that can work deliciously in a plant-based dairy product. For instance, the beverage industry is experiencing an uptick in product launches featuring botanical spices and flowers. Turmeric is a great example as it has been incorporated into fresh pressed juices, tea, kombucha and the traditional beverage of golden milk. For product developers, turmeric is not only a trendy ingredient but also a clean label natural color, especially for products flavored with peach or mango where consumers expect a vibrant color.

Botanical ingredients can offer formulators opportunities for adding more protein, incorporating fiber or showcasing a trendy flavor profile, providing ample room for innovation and new product development within both the plant-based and lactose-free dairy spaces. ♦



Alison Pomaville has extensive expertise in food and beverage product development and a strong understanding of the most recent science and technological advancements in food science. She works to help create custom solutions for [Martin Bauer Group's](#) food and beverage clients and was a member of the inaugural class to receive Certified Food Scientist designation from IFT. She has over 10 years' experience working in the food industry for both finished product and ingredient manufacturers with roles in both product development and quality. She holds a bachelors of science in Chemistry from California Polytechnic State University.



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# A closer look at dairy alternative beverages

by Geri Berdak



**M**ore consumers are taking an interest in the plant-based category. In fact, a recent study from HealthFocus International found 52% of U.S. consumers are eating more plant-based foods, and [they believe it makes them feel healthier](#).

With this growing interest, much attention has been paid to meat alternatives, but what about dairy alternatives? Let's take a moment and look at the plant-based milk alternative category.

The Good Food Institute [published a study](#) that found the plant-based milk alternatives category is worth approximately US\$1.86 billion. Plant-based milk alternatives are shown to account for almost half the total plant-based food market and is the most developed of all plant-based categories, followed by "other plant-based dairy" and plant-based meat, respectively.

Although dairy products are favored for price and flavor, changing consumption habits, health and lifestyle choices are the key drivers of growth in the plant-based milk alternative market. The younger generation is now more aware of the importance of taking care of their health; this, combined with the growing trend of vegan, vegetarian and flexitarian habits, have and will continue to be [drivers of demand](#).

As a result, some of the world's leading dairy businesses, or companies with a significant position in dairy, [are becoming more involved in providing plant-based dairy alternatives](#), including Danone, Chobani and General Mills.

However, U.S. plant-based beverages look to be slowing as the category becomes more competitive. [IRI data](#) showed the growth rate of refrigerated plant milks slowed to 6% in 2019 from around 9% in 2018. Although the

Although dairy products are favored for price and flavor, changing consumption habits, health and lifestyle choices are the key drivers of growth in the plant-based milk alternative market.





overall dairy milk category declined 3.5% in 2019, looking closer at the data, lactose-free dairy milk grew at a rate of 7.3%, a higher rate than plant-based milk alternatives. In fact, sales of lactose-free dairy milk have almost caught up with those of almond milk. This is significant because almond milk accounts for nearly 70% of all U.S. plant milk sales. Given lactose-free milk sells at a 100% premium to regular milk, the performance of lactose-free milk is even more impressive.

That said, digestive health remains one of the biggest trends in health and nutrition today and is likely to be a more important motivation to buy than the halo of plants. Consumers' desire to avoid the digestive discomfort they associate with cows' milk has been long been a barrier for the dairy industry. That desire has been met by a growing number of plant-based milk alternatives that have come a long way in delivering on taste—but still fall short in other areas [like nutritional equivalency and versatility](#). Plant-based milk alternatives also have the disadvantage of containing many ingredients and fall short of some consumers' desire for “least processed” that is not an issue for lactose-free milk with its natural nutrition message.

Now, dairy is taking an even bolder approach, launching some interesting products in different markets and could continue to pose a threat to plant-based milk alternatives.

For example, Live Real Farms (owned by Dairy Farmers of America), in mid-2019 [launched a plant-plus-lactose-free-dairy milk product in the U.S.](#) Dairy Plus Milk Blends features either a half-and-half combination of oat milk and dairy milk, or almond milk and dairy milk. The lactose-free range is available in five variants: dairy plus almond original, dairy plus almond unsweetened vanilla, dairy plus almond sweetened vanilla, dairy plus almond chocolate, and dairy plus oat original. With the “creamy texture of dairy and the flavor of the respective alternative milk,” these blends have fewer calories and less sugar than regular dairy milk, and more protein and calcium than plant beverages.

Dairy Plus Milk Blends can be enjoyed just as traditional milk or plant-based alternatives would be—in a cold glass on its own, in coffee, in a smoothie or on top of cereal. If plant plus lactose-free milk blends prove appealing to consumers, it won't be long before we see a new niche in the dairy aisle. It will be interesting to watch.

Another successful product is a2 milk, the leading Australian premium brand of cow's milk from the [a2 Milk Company](#). The brand formally launched in the U.S. market in 2015 after success in Australia and China. The company's basic argument is while milk may cause digestive issues, most Americans who believe they are lactose intolerant actually aren't. Ordinary cow's milk contains two types of proteins, A1 and A2. Many people are sensitive to the A1 protein, which can lead to a misdiagnosis of lactose intolerance. By sourcing only from cows that naturally lack the A1 protein, a2 Milk can produce cow's milk that is easy to digest.

Both products are a step forward in the value-added milk category. Looking through the lens of digestive health as a key consumer motivation, the plant-based milk alternative sector is still positioned for growth, but needs to continue to innovate, particularly in the areas of improved taste and nutrition and versatility to recapture its momentum. ♦



Gerri Berdak is president of [CloverQuest Group](#), whose focus is to help companies navigate the dynamic, changing food/wellness landscape and become leading brands in the space. Berdak has dedicated her career to the broader health and wellness category, leading marketing and product innovation efforts for Fortune 500 companies like PepsiCo, Monsanto, Solae/DuPont and for the Innovation Center for US Dairy, Kerry and Isagenix. A nutritionist and classically trained marketer, she partners with her clients to create brand positioning, identify which products to offer and determine the best way to take them to market so that they are highly consumer relevant, and strategically linked to the client's brand image.

# Got milk? A question that can define your product's identity

by Anna Benevente



**U**nder the Federal Food, Drug and Cosmetic Act (FD&C), FDA has jurisdiction over the labeling for food products, including how the product may be named. Called the “statement of identity,” it is generally the “common or usual” name for that food product and is required to be declared prominently on the packaging.

In certain cases, FDA will dictate conditions on the type of food that can be called by a certain name. These “standards of identity” set requirements that must be fulfilled for a food product to be marketed under that name. If the food does not meet those conditions, then it must be marketed under a different, non-standardized name. FDA has established over 280 standards of identity across multiple food categories, ranging from milk and cheese to canned tuna and jam.

Originally implemented to combat adulteration and fraud in the early 20th century, standards of identity establish and codify the common or usual name, define the basic nature and characteristics of the food, often specify mandatory and optional ingredients, and may require certain manufacturing processes. Standards are intended to ensure product integrity and consistency of products across the marketplace while satisfying consumer expectations for a particular type of food—in essence, making sure the consumer “gets what she/he pays for.” Food products that do not meet the standard of identity declared on the label may be considered misbranded and subject to enforcement action.

**FDA has established over 280 standards** of identity across multiple food categories, ranging from milk and cheese to canned tuna and jam.



With advancements in food technology and public interest in healthier options, food standards have come under increased scrutiny in recent years. With the rise in consumers seeking more dairy-free, vegan and plant-based options in their food purchases, there has been more discussion surrounding how standards of identity should be applied to these food products. This includes products that traditionally contain dairy or other animal-sourced ingredients such as milk, cheese and ice cream.

The following examines how FDA defines these products and some of the recent developments taking place that impact them.

## **Standard of identity for milk**

FDA's standard of identity for milk is the "lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows." The standard goes on to mandate that the product shall be pasteurized or ultra-pasteurized and must contain not less than 8.25% milk solids not fat and not less than 3.25% milkfat. Any product that falls under this standard may be labeled with "milk" as its statement of identity.

With the advent of plant-based "milks," such as almond milk and soy milk, there has been intense debate surrounding whether these products can use the term "milk" in their statements of identity. FDA has based its enforcement strategy on the presumption that any product including "milk" in its name must conform to the standard of identity for milk; it is not sufficient to simply qualify it with the name of a plant source such as "soy milk."

The agency has issued warning letters to companies that identified plant-based beverages with the word "milk," deeming the products misbranded. In the case of "soy milk," the agency stated it considered "soy drink" and "soy beverage" to be acceptable common names for that product. While impacting standalone products such as soy and almond milk, the ramifications also can be felt across the marketplace toward other products traditionally formulated with dairy ingredients.

## **Standards of identity for other dairy products**

FDA has standards of identity for other traditionally dairy-based products such as ice cream, cream, yogurt, sherbet, butter and different types of cheeses. These standards function in a manner like that of the milk standard, explicitly laying out what can be included as an ingredient. Most will require a dairy ingredient such as milk or cream, and none offer a nondairy plant-based milk alternative as an option. Manufacturers of dairy-free products find themselves unable to use the standardized names due to the regulatory definition of "milk."

As an example, "Cheddar cheese" is defined as a product made from milk, nonfat milk or cream with other specified optional ingredients. The finished product has a milkfat content of 50% by weight of the solids, and the maximum moisture content is 39% by weight. Other cheese standards have the same inherent issue as a result of the standard of identity for milk, although some do make allowances for milk derived from other animals such as goats. No plant-based alternative ingredients are specified in the standards; therefore, products without milk cannot be called "cheese" and are forced to use different statements of identity. The popular vegan brand Daiya uses terms like "Cheddar-style shreds" or "cream cheeze" to differentiate those products from cheese that utilizes cow's milk.

Nondairy alternatives to ice cream and frozen custard face the same regulatory hurdle: a standard of identity that specifies its formulation with dairy ingredients. Popular brands such as Ben & Jerry's find themselves marketing "nondairy frozen desserts" rather than "vegan ice cream." Producers of nondairy or plant-based alternatives must be aware of these standards and ensure the products bear an appropriate statement of identity or risk enforcement action by FDA.



## Are changes on the horizon?

The rapid growth of dairy-free products in the marketplace comes at a time when FDA is reassessing its approach to standards of identity. The agency issued a proposed rule in 2005 that sought to modernize the system to allow for technological advances while still ensuring that standards promoted honesty and fair dealing in the interest of consumers. The rule lay dormant until resurrected in 2018 with its comment period reopened to allow for additional public input. FDA stated its intent to publish a new proposed rule or a final rule based on the updated record.

Around the same time, FDA issued a request for comments on the labeling of plant-based products with names that included terms traditionally associated with dairy foods such as “milk,” “yogurt” and “cheese.” Originally slated to close on Nov. 27, 2018, the comment period was extended to Jan. 28, 2019.

During this period, then-FDA Commissioner Scott Gottlieb commented on the issues surrounding the tendency of nondairy milk alternatives to call themselves “milk.” Of concern was the discrepancy in the nutrient profile of dairy milk versus nondairy-based “milk,” which may lead consumers to make less informed choices about what nutrients they are including in their diet. FDA hopes to determine whether consumers understand the differences in the basic nature, characteristics, ingredients and nutritional components of plant-based products compared to their dairy counterparts.

On Sept. 27, 2019, FDA held a public meeting to give stakeholders the opportunity to discuss its intent to modernize standards of identity as part of its comprehensive Nutrition Innovation Strategy focused on improving dietary practices and reducing preventable death and disease related to poor nutrition. FDA is seeking a “horizontal” strategy that will allow it to make changes across a broad range of categories, rather than a “vertical” strategy involving the laborious task of updating individual standards.

A potential model is the regulation that permits foods that substitute for a standardized food to use that standardized name, when the deviation is a result of an expressed nutrient content claim (e.g., “low-fat Cheddar cheese”). This approach may afford proponents of plant-based dairy alternatives the opportunity to convince FDA to promulgate regulations that will allow for “vegan ice cream.” For companies producing these types of products, it may be beneficial to stay in communication with FDA regarding this issue. At a minimum, it is important to stay informed and tuned in to further updates from FDA regarding the potential changing of these rules. ♦



Anna Benevente is a senior regulatory specialist at [Registrar Corp](#), a consulting firm that helps companies comply with FDA regulation. She has been assisting companies with FDA regulations since 2009 and has researched over 370 products to determine whether they meet FDA requirements for compliance.

# When it comes to coconuts, FDA is nuts

by Traci Kantowski



In 2003, U.S. Rep. Nita Lowey (D-N.Y.) and co-sponsors Reps. Barbara Lee (D-Calif.) and Rosa L. DeLauro (D-Conn.) introduced H.R.467: the Food Ingredient Right to Know Act, [based on the following](#):

- ◆ Approximately 2% of adults and about 5% of infants and young children in the U.S. suffer from food allergies;
- ◆ Roughly 30,000 individuals require emergency room treatment annually with allergen-related issues;
- ◆ The number of individuals who died due to allergic reactions associated with food recalls as a result of unlabeled allergens rose to 121 in 2000 from 35 in 1990;
- ◆ Eight major foods or food groups (milk, eggs, fish, Crustacean shellfish, tree nuts, peanuts, wheat and soybeans) account for 90% of food allergies.

This bill gained a groundswell of bipartisan and public support and as a result, Congress passed the [Food Allergen Labeling Consumer Protection Act](#) (FALCPA) into law on Aug. 2, 2004 and included mandatory labeling of food allergens on packaged foods. FALCPA requires manufacturers of foods containing one of the eight major allergens to either state on the food's packaging that the food contains the allergen or refer to the allergen in the ingredient list by a name that consumers can understand.

[Researchers now estimate](#) that 32 million Americans have food allergies, including 5.6 million children under 18, or 1 in 13 children. Industry is aligned that allergens need to be taken seriously and responsible manufacturers are careful about labeling when it comes to the eight major allergens.

The problem arises from FDA's FALCPA guidance document issued in 2006. In this document, FDA included a list of what it considered to be "tree nuts" including coconut (*Cocos nucifera*) alongside almonds, pecans, walnuts, etc.

In the guidance, FDA erred by including coconut as a tree nut. While coconuts grow on trees and contain the word “nut,” coconut is botanically a drupe, a fruit with several hard layers. Despite this, because of the guidance, coconuts still fall under FDA’s designation of “tree nuts” for FALCPA. As the American College of Allergy, Asthma and Immunology [stated](#):

“Coconut is not a botanical nut; it is classified as a fruit, even though the Food and Drug Administration recognizes coconut as a tree nut. While allergic reactions to coconut have been documented, most people who are allergic to tree nuts can safely eat coconut.”

The two major U.S. allergen advocacy groups, the Food Allergy & Anaphylaxis Network (FAAN) and Food Allergy Research and Education (FARE) do not recognize coconut as a nut.

Moreover, most food-allergic people aren’t allergic to coconut. As noted in a 2017 study, “Despite concerns voiced often by food-allergic patients, allergy to coconut is rare, not directly associated with nut allergy and few cases are reported so far in the literature” (*Children* 2017, 4(10), 85.). A 2010 U.S. study conducted by Children’s Hospital Boston researchers found there was “no significant risk of allergy to coconut in peanut and tree nut allergic children” (*Pediatr Allergy Immunol.* 2010;21(8):1114-8). While coconut is a known allergen, anything can be an allergen, and coconut impacts a small group of people. FDA acknowledged their tree nut list is broad and may even include species that currently have no food use.

The misclassification of coconut as a tree nut causes consumer confusion and, in fact, misleads consumers with tree nut allergies who, in most cases, could safely consume products with coconuts.

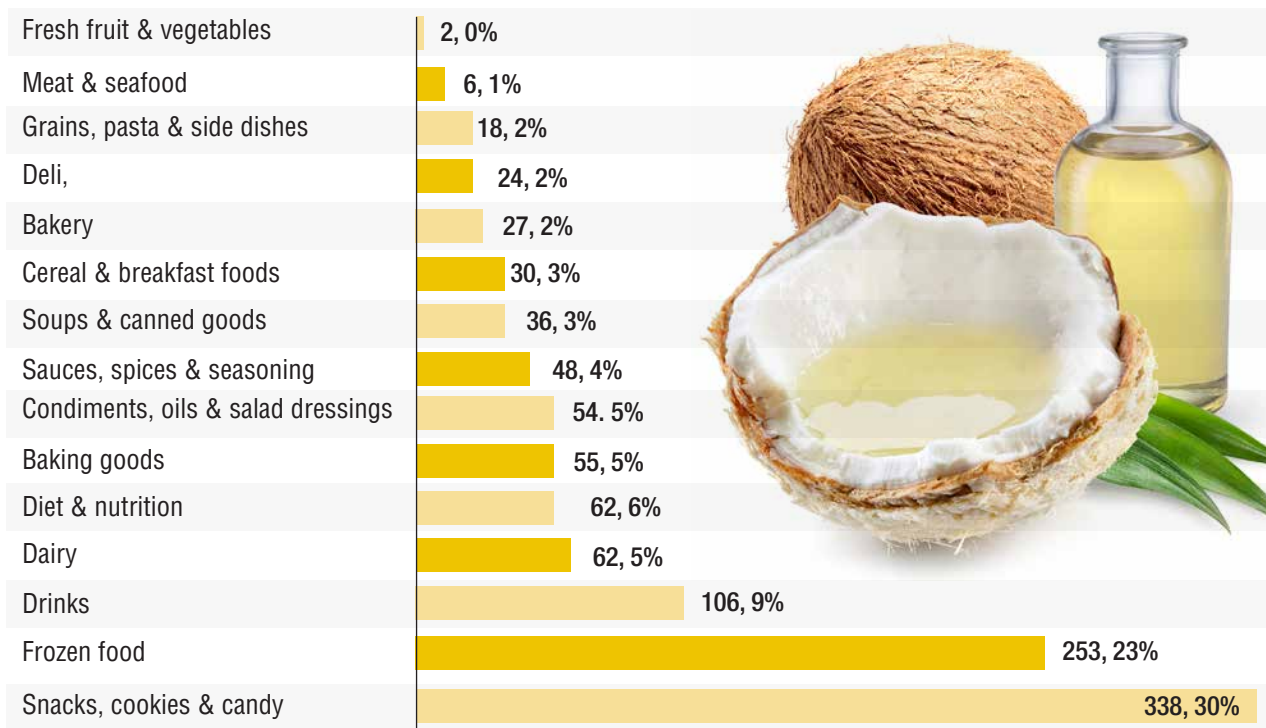
### Industry concern

This issue is confusing for labelers who may not have thought of coconut as a nut or as a major food allergen. Manufacturers wanting to use coconut must unnecessarily classify their facility as a tree nut facility when it is not, and take extra steps on the manufacturing side for labeling, cleaning equipment, etc. Specifically, manufacturers labeling products containing coconut must declare the presence of coconut in the ingredients list or with an adjacent, “contains” statement. And, ingredients derived from coconut must use the common name “coconut” in the ingredients list or state “contains coconut.” Organizations failing to follow these guidelines are at risk from FDA for warning letters, detentions or even recalls.

Label Insight, a product attribution and CPG market intelligence provider, found that in September 2019, 1,113 products made a “Contains Tree Nut” warning claim when the only tree nut ingredient was coconut.



## Number and percentage of products that contain coconut but no other allergen



Source: Label Insight, September 2019

### Industry action

In the FALCPA guidance, FDA advised that the list of allergens may be revised. The industry trade group Coconut Coalition of the Americas (CCA) launched an initiative to file a Citizen's Petition to request FDA remove coconut from the tree nut category. CCA is engaged the law firm Amin Talati Wasserman LLP, and work started on the petition in January 2020. CCA has signatures from more than 150 registered dietitians and other health care professionals and is building alliances with like-minded allergen groups and stakeholders. CCA expects to submit the petition by summer 2020. From there, FDA has 180 days to respond.

Some of the food allergen groups are working on initiatives to have sesame added to the major allergen list and to clean up some of the misclassifications that are causing the most confusion for food-allergic people. CCA believes a more accurate listing would be less misleading, more in line with known allergenic patterns, and ultimately could even be safer as some tree nut-sensitive consumers know that coconut is innocuous to them and so have started ignoring the coconut as tree nut label. Stay tuned. ✨



Traci Kantowski is the Communications Director at [Trust Transparency Center](#), a strategy and insights firm serving the natural products industry. She leads the organization's communications efforts surrounding trust transparency and its single ingredient stewardship programs. She is a fitness enthusiast and is a Certified Health Coach, Certified Personal Trainer and Group Fitness Instructor.

# Milking it: Dairy-free options just keep getting better

by Kimberly J. Decker



**G**lance at a grocer's dairy case and the first thing you notice may not even be dairy. That's because plant-based alternatives to traditional cow's milk yogurts, beverages, creamers, cheeses and more are a bona-fide phenomenon, crowding shelves and reshaping the dairy category—not to mention how consumers eat and drink.

Dairy alternatives are even reshaping where investors place their bets. According to Food+Tech Connect's "2018 U.S. Food & Beverage Startup Investment Report" (produced in partnership with Ryan Williams, director of finance and special projects, RISE Brewing), the alternative dairy category captured 14% of all 2018 investment dollars allocated to food and beverage startups—more than US\$200 million—putting it atop the list of food and beverage investment targets.

Ripple Foods, Califia Farms and Kite Hill each brought in at least \$40 million, the report noted, providing dollars-and-cents evidence these brands, and others like them, are making alternative dairy downright mainstream.

But they wouldn't be doing so if the current generation of products wasn't worth purchasing. As Christine Addington, senior dairy technical service specialist, Cargill, said, "While many still prefer real dairy, a growing segment of consumers chooses dairy-free options. Improvements in plant proteins, coupled with greater formulation expertise, offer product developers the opportunity to capitalize on this in a variety of dairy alternative products."

## All-in on alt-dairy

Consumers and investors aren't the only ones going all-in on alt-dairy. "You can see the investment that retailers have made over the past few years in



**The alternative dairy category captured**

**14%**

of all 2018 investment dollars allocated to food and beverage startups—more than US\$200 million—putting it atop the list of food and beverage investment targets.

Source: Food+Tech Connect



expanding store layouts to include more refrigerated and frozen space to accommodate this fast-growing sector,” said Sarah Diedrich, customer marketing manager, Synergy Flavors.

Renee Flesch, founder and managing partner of TFG Consulting and a veteran consultant to the food industry working with Whitehall Specialties’ NewFields division, agreed, adding the spread of alt dairy into foodservice, coupled with the continual emergence at retail of line extensions, flavors and formats, “keep driving alternative dairy market share, as such products introduce new consumers to the segment.”

Those consumers are shattering expectations as to who the typical alt-dairy patron is, too. As Vineet Jindal, global customer innovations manager, plant-based dairy, AAK USA Inc., said, “Now that vegans, vegetarians, flexitarians and even those who just want to try something different are discovering that they can enjoy the same quality as dairy—only made from plants—they’re doing so more frequently.”

## Transcendent appeal

Indeed, the most recent [Food & Health Survey](#) from the International Food Information Council Foundation (IFIC) found about one-quarter of consumers reported eating more plant-based protein than in the previous year, with 34% professing to eat plant-based proteins daily.

And while consumers’ reasons for trying alt-dairy vary from healthy living to environmental concerns to pure experimentation, “One thing’s clear,” said Pam Stauffer, global marketing programs manager, Cargill. “Their appeal transcends the traditional vegan or lactose-intolerant consumer, as more Americans are pursuing ‘flexitarian’ or ‘lessitarian’ eating habits.”

Innova Market Insights’ latest proprietary report on global dairy alternatives found 32% of consumers claimed to buy such products “because they’re healthier,” with 27% enjoying their variety, making it easier to build diets around plant-based foods.

For her part, Keera Perumbala, marketing manager, Sensient Flavors, pegged Millennials and Gen Zers as “the primary drivers behind the plant-based trend,” noting their support for “lifestyle brands” with social and environmental practices that mirror their own fuels the category’s expansion.

Paul Kollesoff, vice president, aseptic and emerging platforms, Glanbia Nutritionals, also believes dairy alternatives “feed consumers’ need to feel good about what they’re eating.” But just as important, he stressed, “The products are simply better now. Gone are the days of trying a dairy alternative and forcing yourself to drink it. Companies making these products are robust, and the consistency of consumer experience is there.”

## Conquering the case

Nowhere is that truer than with plant-based milks.

Kollesoff pointed out plant-based milks are just as palatable in common applications like cereals, dry-blend beverages and smoothies as dairy milk, lowering the barrier to entry. Moreover, he noted, producing plant-based milks isn’t a high hurdle for processor. “Plant-based milk is pretty simple to make as a good-tasting product,” he said. “There’s not much formulation complexity.”

Lisa Drawer, director of marketing, Edlong, added sheer familiarity moves nondairy milks into consumers’ carts. “They’re the most familiar, and usually the most consumed,” she said, “making them a natural dairy-replacement entry point.” In fact, proprietary research from the Hartman Group found more than 40% of consumers claim to have purchased a plant-based milk.



## Bases loaded

As the pool of plant bases widens, consumers will have even more milks to choose from.

Suzanne Hagener, director, brand marketing, nondairy products, Blue Diamond Growers, said the company's Almond Breeze beverage hit the scene in 1998. "Since then, the almond milk category has exploded because consumers have found that the product meets their health and taste needs," she explained. Almond milk has a healthy halo, too, she said, and it offers "a clean taste that doesn't require 'maskers' like some plant-based beverages."

Of course, the expansion of flavors and formats hasn't hurt, either. Blue Diamond's product is now available in profiles from chocolate and vanilla to banana, horchata and eggless "nog." "Recently, we've even expanded into creamers and yogurt because of the demand for almond-based products in these categories, too," she added.

But while almond milk and soymilk were first to market, Kollesoff noted, "More recently we're seeing growth in milks from flax, chia and oats. These bring enhanced nutritional advantages and, in the case of oats, some very interesting tastes and textures."

Pointing to Datassential numbers, Yery Kim, strategic insight analyst at Glanbia Nutritionals, reported while almond, coconut, soy, cashew and oat hold the top spot among bases, almond and oat "show the most promise," with proprietary data showing 356% and 276% menu penetration growth, respectively, from 2015 to 2018.

Philip Caputo, marketing & consumer insights manager, Virginia Dare, likes the odds for oat and pea relative to almond, coconut, hemp, rice and soy—thanks, he said, to their "more neutral flavor profiles, smooth textures and creamy mouthfeel." Cashew milk keeps earning converts with its "fatty, creamy properties" he continued, even as milks sourced from sprouted nuts, grains and seeds make inroads.

## More than milk

Looking beyond milks, Kim cited proprietary Mintel data indicating "new product launches show higher growth with pea protein and coconut bases within the plant-based dairy, yogurt and ice cream categories," she said. Mintel also found coconut milk and pea protein "were the two top bases in 2018 plant-based ice cream launches."

All of which impresses Jon Getzinger, chief marketing officer, Puris, who's excited by the potential in the broader alt-dairy category. "While there's still room to grow in milks, especially as brands enrich options like nut and oat milks with protein, there's still a lot of space to roam in cheeses, yogurts and frozen desserts," he said.

Ivan Gonzales, marketing director, dairy, Ingredion Inc., agreed. "The work that manufacturers have done to improve not only taste but functionality and nutrition in plant-based milks has paid off," he said. "Now we're seeing a similar trend in vegan yogurts and cheeses, where investments are improving the taste, functionality and nutrition to meet consumers' needs."

Caputo has his eye on the café, as one of his company's 2020 trend predictions is a flourishing of plant-based creamers, ready-to-drink (RTD) coffees and tea lattes. His team has developed a London fog latte made with oat milk, black tea, bergamot, vanilla and lavender; a rose mocha latte with coconut milk, cold-brew coffee, cocoa and rose blossom; a maple masala chai cold-brew latte; and a



While almond, coconut, soy, cashew and oat hold the top spot among bases, **almond and oat** "show the most promise," with proprietary data showing

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Source: Datassential



keto-friendly avocado matcha latte that packs in avocado oil and medium chain triglyceride (MCT) oil along with almond milk.

And with companies like Impossible Foods and Beyond Meat reinventing the burger, “We look for plant-based cheese to follow this trajectory,” said Steve Snyder, president and CEO of Whitehall Specialties. “As a complement to the plant-based burger, plant-based cheese remains an exciting category.”

Most such products remain in beta mode, with their chew, stretch and melt not yet on par with dairy. “Mozzarella is a good example,” Snyder offered. “For now, most options have great taste, but fall short on these dimensions.” But he expressed confidence that quality “will continue to improve as technology and focused development efforts make progress.”

Addington is also optimistic. Plant-based cheese, she said, “is certainly one of the most challenging applications. Dairy proteins have so much functionality, contributing to mouthfeel, texture, aging and flavor. Replicating these characteristics in plant-based systems is extremely difficult. That said, there are already a number of manufacturers who’ve launched vegan shredded, sliced and block cheeses. Some are even getting close to duplicating traditional dairy characteristics.”

### **Ain’t nothing like the real thing, baby**

But do plant-based patrons even want an alt-dairy cheese to duplicate “the real thing”?

“On one hand,” argued Anne Marie Butler, R&D applications manager for Europe at Edlong, “you have vegan or vegetarian consumers, or those who don’t like dairy. For them, an exact dairy replica is likely unimportant, or even undesired.” But for flexitarians, she continued, “The desire for alternative dairy products to be close to the dairy counterpart is key.”

Addington conceded it’s hard to please all consumers all the time. But while some alt-dairy customers are tougher than others, “To go mainstream, we must address the taste and mouthfeel gaps often associated with dairy-free formulations,” she insisted. “Ultimately, if a product doesn’t deliver on taste, texture or visual appeal, it doesn’t matter how trendy or nutritious it is.”

And don’t count on flavor maskers alone to get you there, Getziner cautioned. “It’ll take formulators and manufacturers working together to find the right solutions.”

### **How high the hurdles**

As of right now, there are plenty of solutions.

“Often, plant-based ingredients don’t offer the same functionality as dairy ingredients, nor do they have the same taste profile or ingredient interactions,” Butler conceded. “To achieve a similar profile, functionality and nutrition, developers need to be more creative.”

Consider whipped cream. “Dairy cream is an emulsion of fat and water with low levels of protein, which forms an aerated product when whipped,” she explained. “To achieve this in a plant-based system, we need to combine several key ingredients: the right fat with water and functional additions to mimic

aeration properties; stabilizers to keep this structure; flavors to create a pleasant, creamy-rich taste and mask off-notes. There are so many elements that come into play.”

Many of those elements trace back to formulation chemistry. “Traditional cow’s milk products rely on manipulating the interactions of dairy proteins—especially casein—with butterfat and minerals to achieve the desired product,” explained Ariel Beverly, applications specialist, North America beverage applications, DuPont Nutrition & Biosciences. “Dairy-free alternatives don’t have the same chemistry, so it’s trickier to get the same textures and functionality.”

Protein is especially vexing, as the more you add to plant-based systems, “the more challenges you’ll face,” Addington advised. “While processing technology has improved solubility, at high-use levels, negative textural attributes like grittiness or sandiness can develop. In addition to textural problems, negative impacts on flavor, like earthy or beany notes, can also be present.”

## Protein progress

Fortunately, “Plant proteins have come a long way in the last decade,” Addington assured. “With a greater understanding of their molecular structure and chemistry, we can work with them in ways that’re ideal for their inherent physical makeup. We’ve also made substantial advances in our processing technology, which allows us to produce plant proteins with better solubility, mouthfeel, stability, taste and color. As a result, we can now produce dairy alternatives with smoother, creamier textures that are much closer to their dairy counterparts.”

Consider improvements in protein suspension and protection. Pea protein, for instance, is “one of the most soluble vegetable proteins available,” Addington claimed. It functions well in both neutral and low-pH applications because its isoelectric point hovers around pH 4.5 to 5—lower than the typical alt-dairy beverage pH of 7. “And the farther a beverage’s pH is from a protein’s isoelectric point,” Addington explained, “the easier it is to keep in solution.”



**One advantage of texturizers like fats, oils and fibers is their “clean” appearance on labels resonates with fans of plant-based dairy.**

In acidic beverages, however—think fruit smoothies—pH levels are much closer to pea protein’s isoelectric point, “causing the protein to hydrolyze and precipitate out of solution,” she noted. “If you use the right ingredients to protect your proteins, you can achieve the smooth mouthfeel consumers expect.”

Cargill developed pectins with the express purpose of surrounding protein molecules, preventing hydrolysis and keeping it in solution. Teamed with gellan gum or carrageenan, they support texture and avoid further protein sedimentation “at levels as high as 16 g of pea protein per 16-oz. serving,” Addington said. “We’ve seen developers create products to meet consumers’ taste and sensory requirements.”

## Creating creaminess

Other textural challenges involve milkfat or its absence. To make up for its dairy-like mouthfeel, “Formulators rely on texturizers to build back the rich, creamy texture consumers expect,” Addington said. Ingredients like native starches, pectins and chicory root fiber all help contribute stability,



mouthfeel and syneresis control “while standing up to the harsh processing that nondairy applications often go through,” she added.

For example, chicory root fiber mimics the “creamy, milky mouthfeel” of fat in frozen plant-based desserts by forming a gel, Addington explained. Its sugar-like properties aid freezing-point depression and supply bulk to reduced-sugar applications, “helping to create a rich, full-bodied product,” she said.

And finally, James S. Jones, Ph.D., vice president of customer innovation and plant-based foods at AAK USA Inc., pointed out that fats and oils “are critical components of flavor and functionality for many products, especially plant-based foods, and the fats and oils industry has advanced to develop clean-tasting fat and oil solutions that’re closer to anhydrous milkfat in functionality.”

### Keep it clean

One advantage of texturizers like fats, oils and fibers is their “clean” appearance on labels resonates with fans of plant-based dairy. Suppliers are adding to the list of options with starches and flours that offer consumer credibility as well as formulation functionality.

“We’re seeing more development being done with pea starch to replace some or all of the gums in many formulations,” Getziner said. “Pea, in general, is a good choice in applications where consumers want regenerative products that aren’t tainted with major allergens.”

And according to Gonzales, tapioca starches and flours contribute “very desirable texture and mouthfeel” to plant-based yogurts. “Plus, tapioca starches and flour have very positive reputations and acceptability with consumers, according to our proprietary research,” he said. Potato starches are similarly well-suited to plant-based cheeses.

### Different from dairy

Mindi McKibbin, a principal scientist for North America beverage applications at DuPont Nutrition & Biosciences, emphasized the key to formulating plant-based dairy alternatives boils down to this: “Remember that they’re not the same as dairy.” Thus, neither are their stabilization needs.

“While gellan gum works great as a single stabilizer in plant-based alternative milks,” McKibbin continued, “a stabilizer system is often needed to deliver the desired mouthfeel and texture in more complicated formulations like yogurts, drinkable yogurts, smoothies, sour creams and protein beverages.” She’s used combinations of locust bean, gellan and guar gums with starches and stabilizers like sunflower and soy lecithin to optimize plant-based stability, “often with a clean label,” she added.

The carbohydrate composition of plants also differs from dairy, with the former lacking lactose, exhibiting a more diverse family of sugars and undergoing a shift in sugar balance as the plant source matures—

none of which is true in dairy. “This has created the need to deliver customized culture blends ideal for fermented plant-based products,” McKibbin said.

Even colorants require special consideration in alt-dairy applications. As Yashar Shakarami, a principal scientist at Sensient Flavors, noted, “Dairy products show off vivid shades with little to no effort, as the colors have a white background to play against.” Not so in many plant alternatives, which can have an inherent hue of their own “that complicates the process of achieving the desired color right off the bat,” he said.

### In good taste

And perhaps more than all else, plant-based dairy simply tastes different. “Any plant-based ingredient can impart off flavors or textures,” Caputo pointed out. “Plant-based milks made from pea, oat and quinoa can bring on bitterness, whereas soy, hemp and almond can impart chalky and gritty textures.”

Functional ingredients like proteins, vitamins, minerals and even fatty acids complicate flavor profiles further. And nondairy beverages “have a way of showing off these qualities,” Caputo added, “as they’re mouth-coating and typically heat-treated.”

In light of all this, Rosa Sanchez, a beverage innovation leader for North America and Mexico at DuPont Nutrition & Biosciences, praised flavor companies for developing “good flavor maskers that help cover the profiles of the different plant sources, such as green notes from pea, beany notes from soy and more.”

Meanwhile, her colleague Beverly suggested dairy-free cream flavors “can help add back the milky notes of traditional cow’s milk products to plant-based alternatives.”

### Future in focus

Despite these improvements, the category has a long way to go before it’s mature, according to Getzinger. “I’d argue that despite some great efforts, there’s still plenty of room for improvement across the board, especially outside of milk,” he said.

While taste and texture are critical, Jones advised that “since health and sustainability also drive the move toward plant-based eating, focusing on the sourcing of plant-based ingredients and the nutritional profiles of the finished products is paramount to ensuring that those who choose to replace traditional dairy do so with products better for their health, and the health of the planet.”

Flesch is confident tech will play a role in achieving all of the above. “Moving forward, we expect more advanced ingredient technologies will emerge to support innovation in alternative dairy, much the same way it has for Beyond Meat, Impossible and JustEgg,” she said. “This technology will leverage innovation in traditional ingredients such as texturizing legume proteins, for example, and in novel fermentation techniques, such as what’s been done at companies like Perfect Day.”

Gonzales is rooting for technology to move the ball, too. “Advances in flavor masking, functional ingredients and fermentation are coming together to overcome many of the remaining challenges,” he said. “It won’t be easy, as dairy taste and function are unique. It’s taken several decades, if not centuries, of research and innovation to get the products we have nowadays. Plant-based dairy is just starting out, but what we’ve learned about dairy is being adapted and applied to these new products.” And it’s making them better. ✦



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# Flavor, function propel oat and other dairy alternatives

by Jon Copeland



**D**emand for dairy alternatives is growing. A 2018 study by [Consumer Reports](#) showed nearly one-third of U.S. consumers purchase plant-based dairy alternatives, and 18% buy both dairy and nondairy milks. Oat-based milk alternatives, in particular, recently experienced a meteoric rise.

While still a minor segment of the [US\\$2 billion](#) dairy alternative market, oat milk exploded onto the scene via boutique coffee shops and specialty stores on the east and west coasts. According to proprietary SPINS data, U.S. sales of refrigerated oat milk rose by an astonishing 2,094% for the 52-weeks ending Oct. 6, 2019 in the natural, specialty gourmet and conventional multi-outlet U.S. food retailers (excluding Whole Foods Market, Trader Joe's and ALDI). Baristas and coffee connoisseurs prize oat milk for its capacity to be whipped into frothy cappuccinos and creamy espresso applications.

The most successful oat milk brands position their products as viable plant-based alternatives to dairy milk. Rather than solely emphasizing the healthy attributes of oats, such as high fiber content and heart benefits, the best-selling brands also put flavor and texture in the spotlight, due in no small part to their connection with coffee. Therefore, when it comes to disrupting demand for dairy, brands are well-served to remember consumers often value both flavor and function.

That is not to say health benefits are unimportant to consumers. In fact, according to a survey by [Innova Market Insights](#), 32% of those surveyed said they chose nondairy options “because they’re healthier” and 27% to “bring variety to my diet.” Health and nutrition are certainly reasons



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Source: *Innova Market Insights*



consumers seek dairy alternatives. However, when it comes to successfully bringing to market a nondairy milk, yogurt or cheese made with an ingredient that is new to consumers, shoppers also want to know how it will taste.

A 2018 study by [Ipsos](#) showed taste is the No. 1 factor in the purchase decision of dairy and nondairy milk buyers. Similarly, data from [McKinsey](#) showed that among consumers who have not tried a nondairy alternative, taste was their top concern (48%). The good news for formulators is that innovation in dairy alternatives will increase as new technologies make more options available than before to meet consumer expectations for flavor and texture.

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**An advantage** of hemp milk is that it does not separate in hot liquids, making it an ideal base for coffee creamer applications.

Look for the following emerging plant-based sources for dairy alternatives to appear on shelves in 2020:

### **Hemp**

Made from seeds of the hemp plant, hemp milk is naturally rich in calcium and has more protein than almond milk. Hemp seeds are also rich in omega-3 fatty acids. An advantage of hemp milk is that it does not separate in hot liquids, making it an ideal base for coffee creamer applications. Nut-milk brand [Elmhurst](#) now offers a hemp-based coffee creamer that has 350 mg of omega-3 alpha-linolenic acid (ALA) per serving. As hemp agriculture expands in the U.S., expect to see more hemp-based beverages on supermarket shelves.

### **Macadamia**

According to Nielsen, demand for almond milk grew 250% from 2011 to 2016. A consequence of swelling demand is increased scrutiny over the environmental impact of almond production. As an eco-friendlier nut-based alternative provider, macadamia milk producer [Milkadamia](#) launched a line of products, including spreads, creamer and milk, that feature its regenerative farming practices as well as its characteristically nutty flavor.

### **Pea**

Rising interest in plant-based meat substitutes has fueled demand for pea protein, a common ingredient in applications such as meatless hamburger patties. Peas are an attractive ingredient due to their high protein content and light ecological footprint. New technology allows manufacturers to produce high-purity plant-based extracts, thereby overcoming some of the





flavor issues associated with pea protein. For example, dairy-free producer [Ripple](#) makes pea-based milks, yogurts, creamers and sour cream that are rich in texture and nutritionally dense.

### Animal-free milk

Biotechnology company [Perfect Day](#) uses microbial fermentation to make dairy products without cows. Their process uses bioengineered microbes to produce dairy-identical proteins and milk fats that are blended with water and plant-based ingredients to be used in everything from ice cream to drinkable, animal-free milk. Perfect Day recently signed a deal with Archer Daniels Midland (ADM) to produce milk protein via its fermentation process.

### Dairy and nondairy blends

In an effort to reach flexitarian shoppers, the U.S.-based farm cooperative Dairy Farmers of America (DFA) created the brand Live Real Farms to launch a line of milk blends called [Dairy Plus](#). These lactose-free beverages combine dairy milk and plant-based ingredients such as almonds or oats. Dairy Plus is intended to appeal to consumers who have purchased both dairy and plant-based milk, and crave the creaminess of dairy with the taste of almond and oat milk, but without lactose.

### A2 protein

Many consumers experience discomfort when consuming the protein in dairy products, which is a large driver behind the growth in dairy alternatives. Cows produce milk with two types of casein proteins: A1 and A2. The A2 protein is easier to digest for people with dairy sensitivities. New Zealand-based The a2 Milk Company developed a genetic test to determine which type of protein a dairy cow produces, and the company offers milk and other dairy products that contain only the A2 protein.

The trend toward alternatives to traditional dairy products will continue to grow. Generational [shifts in dairy consumption](#) have created opportunities for brands to disrupt the marketplace with plant-based alternatives. Consumers, especially Millennials, increasingly seek healthy, sustainable choices in the foods they buy. When it comes to purchasing nondairy applications, consumers have an abundance of choices. Therefore, to be successful, brands must prioritize flavor and functional benefits during product development. ♦



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# Rise of the conscientious consumer, dairy alternatives and the hemp industry

by Heidi Mehaffey, Esq.



**C**onsumers are becoming increasingly conscientious not only of the health benefits of what they are putting into their bodies, but also the environmental and animal welfare impacts of their dietary choices. Within the past decade, documentaries such as [Forks Over Knives](#) (2011), [Cowspiracy](#) (2014), [What the Health](#) (2017) and [The Game Changers](#) (2018) have sought to enlighten consumers as to the detrimental environmental impacts and animal welfare issues of the animal agricultural industry while providing science-based evidence on the overwhelming health benefits of plant-based alternative diets.

In January 2020 alone, the plant-based diet phenomenon took hold of the entertainment award ceremony circuit with the [Golden Globes](#), [Critics Choice Awards](#) and [Screen Actors Guild Awards](#) all providing solely plant-based menus to the celebrity guests, while citing awareness to environmental sustainability.

As consumers become more knowledgeable on these issues, there is a demand not only for alternatives to dairy, but transparent advertising to ensure companies that boast humane animal agricultural practices are holding true to their word.

Recently, the Organic Consumers Association [filed a lawsuit](#) against Ben & Jerry's for deceptive labeling, marketing and sales of ice cream claimed to be made by "happy cows," when reports uncovered that a majority of the dairy was sourced from large factor farms and uncontroverted unhappy cows. Ben & Jerry's voluntarily removed the phrase from their labeling and have branched into the dairy-free ice cream arena with a [dozen vegan flavors](#).

The conscientious shift to dairy alternatives has proven to be quite profitable. As reported by the [University of Virginia](#), worldwide sales doubled between 2009 and 2015 to US\$21 billion in response to consumer demands for a wider variety of plant-based alternatives, while the impact on dairy consumption has seen a 13% drop between 2013 and 2018.



In an apparent response to this decline, in 2018, [FDA](#) took public comment to determine if nondairy “milk” products could continue to advertise with the word “milk,” a push from the [dairy industry](#) in an attempt to preserve the market space under the guise of consumer protection from confusion. The [counter-arguments](#): suppression of small businesses, breach of First Amendment rights and governmental intrusion.

However, no final rules from FDA have been issued on this potential labeling restriction, and the sky’s the limit for the dairy alternative market; Arizton’s [March 2019 Global Outlook and Forecast for 2019-2024](#) estimates this animal-free industry is receiving over 14% rate of return on investments and global revenues are estimated to exceed \$38 billion by 2024.

Food industry establishments are taking notice of the rise of the conscientious consumer, as plant-based and dairy-free alternatives are being offered at fast food chains such as [Burger King](#), [Blaze Pizza](#) and [Baskin Robbins](#), and even the amusement park giant Disney World, which recently released [a guide to plant-based dining](#) with hundreds of options for the conscientious consumer throughout its theme parks and resorts in Orlando, Florida.

## Dairy alternatives

While dairy-free comfort foods such as ice cream and cheese pizzas are welcome options, many consumers are seeking healthy alternatives to dairy and turning to soy, nuts and hemp as a source of protein, calcium and satisfaction of their cravings for creamy milk-based dishes and desserts.

Whether the consumer has turned to dairy alternatives due to allergies, lactose intolerance, other health concerns or for ethical reasons, [FDA](#) recognizes almond, rice, coconut, soy and hemp milk as approved and recommended sources of calcium and fortification with vitamin D.

A growing variety of dairy-alternative milks can be sourced into cheese, cream, butter, ice cream, etc., as described in further detail below.

**Legume-based milks:** [Soy milk](#) is a great source of protein (8 g per cup, comparable to that of cow’s milk), contains all the necessary amino acids and had been the staple go-to for dairy alternatives since the 1950s. However, conflicting studies linking an increase in soy intake to health benefits and concerns related to increased estrogen levels have caused consumers caution and demand for a wider variety of plant-based dairy alternatives (*Environ Health Perspect.* 2006 Jun; 114(6):A352–A358).

[Pea milk](#) has recently become a popular option, especially for those with soy allergies, due to its high protein content similar to soy, ability to be fortified with 150% more calcium than cow's milk, ease and lower cost to grow, as well as having less dependency on water than nut milks.

**Grain-based milks:** [Oat milk](#) has a similar consistency to 1% skim milk and is low in calories, cholesterol and saturated fat while being high in fiber; it also contains iron, vitamin E and folic acid. Oat milk also boasts 4 g of protein per cup and is a good alternative for those with soy and dairy allergies.

[Rice milk](#) is a sweeter alternative but is low in protein and high in carbohydrates. The main concern with daily rice milk use is the presence of arsenic, which could potentially build up, causing consumers to move on from this alternative.

**Nut based milks:** [Almond milk](#) rose in popularity as a dairy- and soy-free alternative, but is low in protein at approximately 1 g per cup. Despite this, the market for almond milk and its derivatives [surged by 250%](#) between 2010 and 2015. However, according to the UCSF's Office of Sustainability, only as recently as 2018 has the drastic environmental degradation associated with almond milk become more well-known. The nut milk's need for land resulted in the conversion of wetlands to farming; one needs 15 gallons of water to produce only 16 almonds; and the use of pesticides has resulted in an increase in water pollution and a decline in local bee populations after exposure to the toxic chemicals.

[Cashew milk](#) does require water for its processing but is sourced from places, typically overseas, where water is not as scarce as in California, where most almonds are grown. [Nutrition-wise](#), cashew milk contains 50% of the daily recommended value (DRV) of vitamin E in one cup, and can be fortified with vitamin D, but does lose most of its protein during the milk-making process.

[Coconut milk](#) has been found to be best for cooking, and not drinking as a straight dairy alternative due to its high concentrations of calories (445) and fat (48 g) in one cup. Once diluted with water, it can be a better beverage, although still with very little protein (1 g per cup) but does contain fiber and iron, which are absent from cow's milk.

**Seed-based milks:** [Flax seed milk](#) is low in calories and while it has little protein, it contains approximately 1,200 mg of plant-based omega-3 fatty acids per cup. It can also be fortified with calcium, vitamin D, and vitamin B12, and even [enriched with pea protein](#). Flax seeds contain three times as much [phytoestrogens](#) as soy, so the potential for health benefits and issues are still being researched, as it is currently unknown how much remains in the oil after the seeds are pressed for milk.





[Hemp milk](#) is a good alternative for the consumer avoiding gluten, nuts, soy and estrogen. It is made from the seeds of the cannabis sativa plant, which do not contain THC to give consumers a “high” feeling but does have an “earthier” flavor than other dairy alternatives. Hemp milk has a noticeable amount of protein at 2.5 g per cup, and many other beneficial components such as omega-3, omega-6, magnesium, calcium, fiber, iron and potassium.

## Hemp industry

Hemp cultivation, which has been federally decriminalized and encouraged throughout the states with the passage of [the 2018 Farm Bill](#), is one of the most [environmentally sustainable](#) of the agricultural products. Hemp grows in a variety of climates and soils, is naturally resistant to pests, thereby reducing or eliminating the need for pesticides, and grows in tight spaces, allowing for more productivity in smaller plots.

Hemp has more than [25,000](#) uses in products globally, with a trend to U.S.-grown hemp rather than imports, thereby revitalizing the U.S. economy with sustainable farming for endless uses, including dairy alternatives (and even biodegradable hemp cardboard or hemp plastic-alternatives for dairy alternative production). Nearly [every part](#) of the hemp plant can be utilized, from seeds for hemp milk, to stalks for fiber, and leaves and flowers for oil.

With nearly every state in the U.S. either seeing hemp products or engaging in state hemp cultivation, this is a market to keep an eye out for therapeutic and environmental benefits. It will come with a great profit as well, as the global hemp market is expected to exceed [\\$10.5 billion by 2025](#).

## Market opportunities

Conscientious consumers are turning to plant-based alternatives to dairy for health, environmental and ethical reasons, and the trends indicate consumption of plant-based alternatives will continue to rise and become profitable as dependency on the animal agricultural industry decreases. Brands considering entering the dairy alternative market must keep in mind consumers want transparent advertising and information to make the most informed purchasing decision. ♦



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# Sustainability and health concerns driving consumption occasions in the dairy-free market

by Mike Hughes



**A**cross the globe, the number of consumers looking to reduce their dairy intake is on the rise. This behavioral trait can be attributed to ethical and health concerns associated with dairy intake.

An [FMCG Gurus survey](#) of 26,000 consumers conducted across 26 countries in Q3 2019 found 45% of consumers said they have changed their diets over the last two years in order to lead a more sustainable lifestyle. Of these consumers who have done so, 42% have looked to reduce or eliminate their dairy intake. This means in the last two years, nearly 1 in 5 (19%) consumers have made the conscious decision to follow dairy-free diets to some extent. It is worth noting that of those consumers who have changed their diets, the decision to eliminate/reduce dairy intake was a more popular option than eliminating/reducing meat intake.

When questioned why they have changed their diets, two of the most popular answers given were, “I was concerned about the environment overall” (52%) and, “I was concerned about the treatment of animals.” In recent years, much attention has focused on the ethical and environmental treatment of cattle and land, as well as the impact dairy farming can have on carbon emission. The research showed such information is directly shaping eating and drinking habits across the planet. Additionally, 55% of consumers



**45%**  
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sustainable lifestyle.

Source: FMCG Gurus

said they also believe such dietary changes have improved their health.

This shows a significant proportion of consumers are committed to reducing their intake of dairy products, buoyed by the desire to lead a sustainable lifestyle. At the same time, 35% of consumers who have not made changes to their diets in the last two years admitted that they would struggle to give up dairy. This shows while consumers can demonstrate concerns about the health and sustainability aspects of dairy farming, the importance of taste is something that can prevent them from making changes to their diets.

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**The dairy-free market will be driven by conscientious consumers whose behavior is being shaped by health and sustainability concerns.**

These attitudes toward dairy—including the challenge associated with giving it up—will drive demand for dairy-alternative products across the globe. Indeed, these products are not restricted to consumers who deem themselves to have an allergy, intolerance or a sensitive digestive system. Instead, the dairy-free market will be driven by conscientious consumers whose behavior is being shaped by health and sustainability concerns. To truly capitalize on this, it is important such alternative products are seen to be compromise-free, compared to standard dairy products, when it comes to taste and affordability. ♦



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# CPG brands give the scoop on nondairy alternatives

by Alex Smolokoff



**C**onsumers' eating and drinking habits are changing due to concerns about personal health, animal welfare and the sustainability of the planet. As pointed out on [page 30](#) by Mike Hughes of FMCG Gurus, 45% of respondents across 26 countries have changed their diets in the last two years to lead a more sustainable lifestyle, and more than 40% of those respondents have done so by reducing or eliminating their dairy intake.

At the same time that consumers shift away from the dairy aisle, those who prefer traditional dairy products such as milk, cheese, yogurt and ice cream seek products that are committed to environmental and ethical values.

Enter the world of dairy alternatives. Beginning with the mainstreaming of soy milk and now extending to nuts, grains and other sources, alternatives to traditional dairy offerings are commonly featured on store shelves and restaurant menus.

**Food & Beverage Insider** spoke to representatives from three brands—[Mooala](#), [Alden's](#) and [siggi's](#)—about lessons learned from formulating dairy alternatives.

**Food & Beverage Insider:** What inspired the release of your dairy-free products?

**Naijia Huang, senior brand manager, siggi's dairy:** siggi's was founded 15 years ago with the promise to provide consumers with products made with simple ingredients and less sugar. For years, we watched market trends and heard directly from our consumers who can't have dairy that they wish those kinds of products could be found in the plant-based aisle. We decided to launch plant-based offerings because we found that the existing products didn't meet consumers' needs in relation to protein, sugar and taste.

**siggi's**





**Eric Eddings, president & CEO, Alden's Organic:** Expanding into the dairy-free category was a natural extension of our brand. Part of our core mission is to make Alden's Organic irresistible for all, so we knew we needed to add an exceptional dairy-free line to deliver on the promise to serve everyone. We discovered consumers are craving a dairy-free option that delivers a true-to-flavor experience, so we set out to develop a product line that would meet that need.

**Jordan Campbell, vice president, marketing, Mooala:** Jeff Richards, our founder and CEO, launched Mooala due to his own lactose intolerance and his inability to find a quality nondairy milk alternative he wanted to drink.



**Food & Beverage Insider:** What ingredients are you using to replace the dairy in your products?

**Huang:** siggi's plant-based blend is made with a proprietary blend of coconut, macadamia and pea protein. Our recipe contains three times more protein and 40% less sugar than leading yogurt alternatives, and consumers will find a list of all-natural ingredients on the packaging.

**Eddings:** The core organic ingredients that make up our plant-based Oregon Blend recipe are brown rice, oat flour, coconut oil and pea protein.

**Campbell:** We have a line of almond milk, oat milk and banana milk. Our dairy-free Bananamilks are made from a base of filtered water, organic bananas and organic sunflower seeds.

**Food & Beverage Insider:** Please explain the research and development (R&D) that led to those ingredients.

**Huang:** We found the pre-existing plant-based products available to consumers didn't fit within the siggi's brand when it came to more protein than sugar, simple ingredients and a creamy, thick texture. It took us two full years to develop our plant-based recipe because we know we had to get it right.

**Eddings:** We spent eight months and worked through 29 variations to develop our unique organic dairy-free recipe. The final recipe was selected because it provides a creamy yet neutral base that takes on the flavor profile of the organic ingredients inside. The result is true-to-flavor taste and texture.

**Campbell:** We wanted to create a plant-based milk that was both dairy-free and nut-free, since nut and dairy allergies affect many families. Bananas are a perfect base because they have low acidity and are well-loved by American shoppers.

**Food & Beverage Insider:** What was the most difficult formulation hurdle you faced creating your nondairy recipe?

**Huang:** The most difficult part from a product development perspective was addressing all the needs of consumers and creating a product that fit within the siggi's brand.



**Eddings:** Creating a dairy-free base that was creamy and neutral enough to deliver true-to-flavor taste and texture was a challenge. Once we were able to identify our core ingredients in our plant-based Oregon Blend, it was a matter of determining the right ratios to land on a recipe that would uphold the high standards of our famous ice cream. Taste, texture and shelf life were all critical factors to focus on when developing our dairy-free products. We implemented a process that freezes the dairy-free rapidly to form a smooth and superior body and texture. Lastly, we stabilize and emulsify the products to protect quality during distribution.

**Campbell:** The problem with a banana-based milk is using water and bananas alone yields a beverage that tastes like watered-down banana purée. In order to perfect the mouthfeel of the Bananamilks, we add sunflower seeds to enhance the creaminess. We don't attempt to mimic the taste, texture or nutrition profile of dairy milk. What's important to us is delivering a tasty beverage that's light enough to top off your favorite smoothie or be poured over your favorite cereal, but also flavorful enough to be enjoyed in a glass on its own.

**Food & Beverage Insider:** Do you believe this is a niche market for those who avoid dairy products? Or, do you believe these kinds of products also appeal to those who would otherwise eat and drink traditional dairy?

**Huang:** While plant-based products cannot fully replace dairy products in terms of nutritional content, siggi's plant-based blends are a great choice for anyone who is unable to eat dairy or is avoiding it for dietary reasons.

**Eddings:** By offering a dairy-free option that has true-to-flavor taste without compromise, we believe this product line will appeal to all ice cream lovers, whether they enjoy dairy, or are curious about dairy-free. We have already received feedback from those who have tried the new dairy-free line saying they "can't believe" it's not dairy ice cream. We know our consumers have a variety of wants and needs within their household, and they are looking for a brand that can provide them a range of products to serve everyone; we believe we're that brand.

**Campbell:** We found that our plant-based milks are widely accepted by dairy consumers and nondairy consumers. In fact, in a recent survey, we learned that 44% of Mooala consumers also purchase dairy milk at least every two weeks. ♦

# None of the dairy, all the taste

by Adrienne Smith



**C**onsumers are more in tune than ever before to the health benefits of consuming a diet rich in plants. With sustainable and ethical consumerism increasingly top of mind, more omnivores seek to incorporate less meat and dairy into their diets, leading to the surge of what is now frequently referred to as “flexitarian” eating.

In response, many dairy alternative brands are expanding their product lines and innovating in terms of both flavor and format to capture plant-based converts. As Miyoko Schinner, founder of dairy-free cheese producer Miyoko’s Creamery puts it, “We need to start appealing more to flexitarians, creating products that give them the taste satisfaction of the real dairy cheeses they are used to, in a plant-based product.” The company’s new line of oat and legume-based cheeses not only mimics the taste of real Cheddar or pepper jack cheese, but also the ways these cheeses are typically consumed and how they melt.

Innovations in the dairy alternative section also include greater attention to the macro trend of “allergens and intolerances”—so pervasive today. Nut-based products still abound and offer rich flavor profiles and plenty of versatility, but allergy-friendlier ingredients like coconut milk, legumes, hemp, brown rice and oats continue to rise, with the latter in particular staking a big claim in the freezer aisle.

Consumers are also benefitting from a “cleaned-up” dairy alternative category, with more products eschewing additives and instead focusing on whole-food ingredients, natural sweeteners like dates and functional add-ins like collagen, adaptogens and superfood ingredients, as well as plant-based proteins. Organic certification can be key for these products as brands strive for transparency, and consumers seek peace of mind.

## Nut-based products

still abound and offer rich flavor profiles and plenty of versatility, but allergy-friendlier ingredients like coconut milk, legumes, hemp, brown rice and oats continue to rise, with the latter in particular staking a big claim in the freezer aisle.



The following products capture some of the trends that have been happening in the aisle in terms of plant-based cheeses, frozen desserts, beverages and yogurts.

### Rucksack Foods OATzarella

This new nondairy “mozzarella” was created by a couple whose daughter has multiple food allergies, and who had trouble finding a high-quality, dairy-free cheese for her to enjoy. They also insisted on it having the cleanest possible ingredient list and, did I mention it’s delicious? The secret to this USDA Organic product is not only the gluten-free oats, but also top-quality extra virgin olive oil imported from Greece by partner Ancient Foods. The other ingredients are tapioca flour, agar agar and sea salt. That’s it!



### Miyoko’s Creamery Cultured Vegan Farmhouse Cheddar

Certified B Corp. Miyoko’s Creamery crafted this vegan, bean-based cheese with flexitarians in mind, with the understanding that dairy-free-curious eaters wishing to step up their plant-based eating would likely prefer a product that tastes as close as possible to the real-dairy version. The clean ingredient list starts with a base of oat milk, navy beans and garbanzo beans, along with faba bean protein and potato starch, making it allergy friendly. Plus, it’s great melted in a grilled cheese sandwich.



### Forager Organic Dairy-free Plant-based Protein Yogurt, Plain Unsweetened

With this product, Forager Project reflects two of the most important macro forces shaping the natural products industry today: “eat more plants” and “plant protein.” This USDA Organic, dairy-free yogurt has a coconut milk and cashew milk base and 8 g of plant protein per serving, derived from watermelon and pumpkin seeds and brown rice. It is also available in a Vanilla Bean version.



### Alden’s Organic, Caramel Almond Crunch Dairy Free

This classic maker of creamy organic ice cream has just launched a line of delicious dairy-free frozen desserts. After working through 29 variations, the organic, dairy-free recipe came together as a blend of brown rice, oat flour, coconut oil and pea protein that comes in seven different pint varieties and two “Sammies.” This Caramel Almond Crunch combines a sweet caramel swirl with chocolate flakes and almonds. It is also USDA Organic, certified vegan and non-GMO.



### Elmhurst Milked Oats

This single-serve, 11-oz. container of “Milked Oats” has just five ingredients and contains 28 g of whole grains per serving (Whole Grains Council stamped). It is also Non-GMO Project Verified, vegan, dairy free, gluten free and carrageenan free, and made with the company’s patented HydroRelease method, which uses water to separate the nutritional components and then recombine them to creamy, flavorful and healthy results. This on-the-go plant-based milk comes in this “classic” version, as well as Chocolate, Vanilla and Blueberry. ♦



# Dairy alternatives are disrupting the traditional dairy aisle

by Judie Bizzozero



**V**egan, vegetarian, flexitarian, meatless Mondays—all terms that were nonexistent or at least relatively obscure to most Americans five, 10 or 20 years ago. Consumer perception of what constitutes a good protein source is expanding to include a wider variety of plant-based protein ingredients that offer a balanced source of protein while catering to dietary and lifestyle restrictions. These ingredients also satisfy consumer demand for clean labels and align with values related to sustainability and eco-consciousness. This translates into disruption throughout the market, including the dairy aisle.

According to [Innova Market Insights](#), plant-based product claims increased by 62% compounded annual growth rate (CAGR) globally between 2013 and 2017, with growth occurring on platforms such as plant proteins, active botanicals, sweeteners, herbs and seasonings and food colors.

Shedding even more light on the meteoric rise of plant-based is a 2019 SPINS study commissioned by the [Plant Based Foods Association](#) (PBFA) and The Good Food Institute (GFI) that found U.S. retail sales of plant-based foods grew by 11% in the 52 weeks ending April 21, 2019, reaching a total of \$US4.5 billion. With total food sales growing at just 2%, the data depicts a picture in which plant-based products are no longer just a niche market. Further, since April 2017, total plant-based food sales have increased 31% and plant-based foods unit sales are up 8.5%.

“Plant-based foods are a growth engine, significantly outpacing overall grocery sales,” said Julie Emmett, senior director of retail partnerships at PBFA. “We are now at the tipping point with the rapid expansion of plant-based foods across the entire store, so it is critical for retailers to continue to respond to this demand by offering more variety and maximizing shelf space to further grow total store sales.”

Plant-based food and beverage sales are segmented into two distinct categories—meat substitutes and dairy alternatives. According to Innova, global meat substitute sales are set to grow to \$4.2 billion by 2022. New product development in the niche saw 11% CAGR for the 2013-2017 period, and 4 in 10 U.S. consumers increased their consumption of meat substitutes/alternatives during 2017. In the U.S., the

plant-based meat category alone is worth more than \$800 million, with sales up 10% in 2019, according to PBFA. In fact, plant-based meat now accounts for 2% of retail packaged meat sales.

Continued success for the meat substitute category is projected as brands continue to launch innovative products at retail and more restaurants add plant-based alternatives to their menus. However, it's the dairy alternative sector that is driving robust growth for the entire plant-based nutrition category.

## Dairy alternatives ignite innovation, sales

Demand for dairy alternatives is giving their conventional dairy counterparts a run for their money and causing innovation and disruption in the marketplace. The dairy alternatives market has seen rising levels of interest in recent years, spurred mainly by consumers increasingly looking for lactose-free, dairy-free and plant-based/vegan options as healthy lifestyle choices, rather than regarding them as simply for those with allergies or intolerances.

Emerging plant-based dairy categories are growing even faster as more households are introduced to other plant-based dairy items, according to survey data from PBFA. In 2019, plant-based yogurt grew 39%, while conventional yogurt declined 3%; plant-based cheese grew 19%, while conventional cheese was flat; and plant-based ice cream and frozen novelty grew 26%, while conventional ice cream and frozen novelty increased just 1%.

But it's plant-based milks that garner the lion's share of dairy alternative sales. Global sales of dairy alternative drinks reached \$16.3 billion in 2018 and accounted for more than 8% of global dairy launches recorded by Innova in 2017, up from 7% over 2016. According to PBFA, U.S. sales of plant-based milks grew 9% in 2019 to hit \$1.9 billion, an increase of 6% from the previous year.

As Geri Berdak notes on [page 8](#), IRI data showed the growth rate of refrigerated plant milks slowed to 6% in 2019 from around 9% in 2018. Although the overall dairy milk category declined 3.5% in 2019, looking closer at the data, lactose-free dairy milk grew at a rate of 7.3%, a higher rate than plant-based milk alternatives. In fact, sales of lactose-free dairy milk have almost caught up with those of almond milk. This is significant because almond milk accounts for nearly 70% of all U.S. plant milk sales. Given lactose-free milk sells at a 100% premium to regular milk, the performance of lactose-free milk is even more impressive.

According to Mintel's October 2019 "[Milk and Non-Dairy Milk – US](#)" report, while traditional dairy milks are still considered a household staple by most consumers, sales are declining due to rapid innovations in the nondairy market and low prices that have led to an oversupply of dairy milks. "Similarly, nondairy milks may face a kind of oversupply stemming from the sheer number of alternative milk bases available," wrote Madelyn Franz, research analyst at Mintel. "As such, vying for consumers' attention will be increasingly

### Growth of plant-based alternatives by category

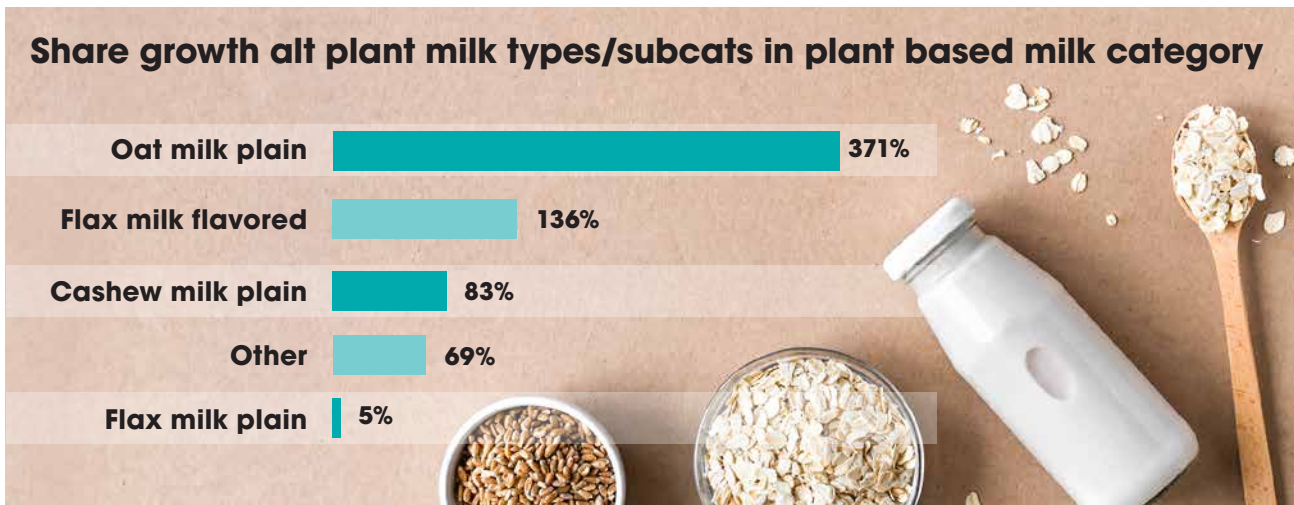
Category	Dollars	Growth
Milk	\$1.9B	6%
Meat	\$801M	10%
Meals	\$387M	6%
Ice Cream	\$304M	26%
Yogurt	\$230M	39%
Creamer	\$226M	40%
Butter	\$189M	5%
Cheese	\$160M	19%
Tofu and Tempeh	\$118M	5%
Ready-to-drink beverages	\$103M	23%
Condiments, dressings and mayo	\$70M	7%
Spreads, dips, sour cream and sauces	\$21M	52%
Eggs	\$6M	38%
<b>Total plant-based foods</b>	<b>\$4.5B</b>	<b>11%</b>

52 weeks ending April 2019. Commissioned data from SPINS.

[plantbasedfoods.org](http://plantbasedfoods.org)

difficult. Interest in added nutritional benefits and incorporating plant-based proteins into their diets provide an opportunity for both dairy and nondairy brands to reposition or reformulate to recapture their potentially overstimulated audience.”

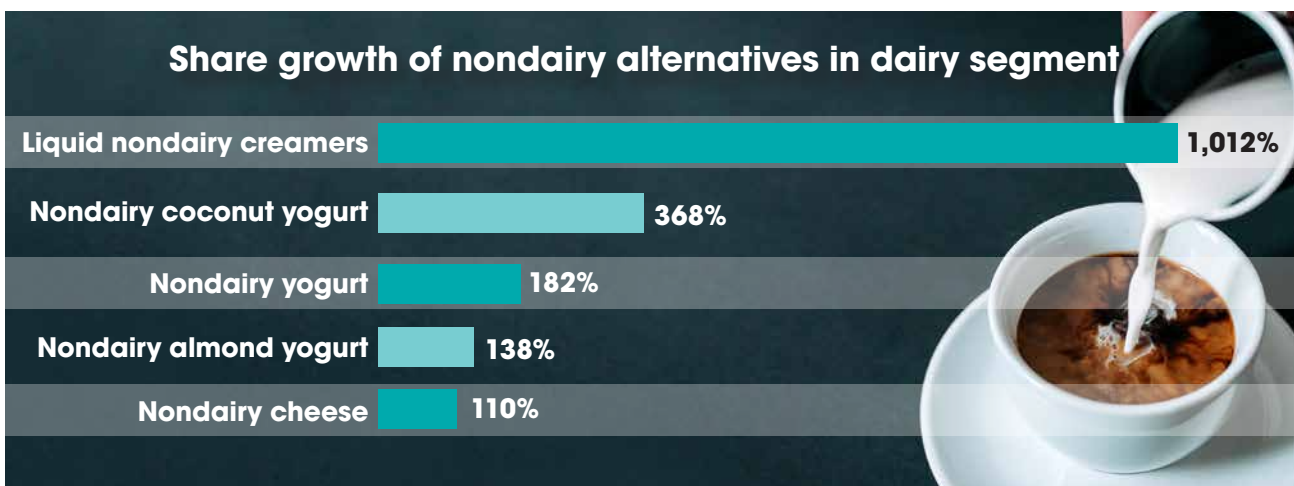
Soy milk is often credited with starting the specialty category of plant-based milk, but other sources like almond, coconut, rice and the newest rock star, oat, have all had gains in market share (page 5). New Hope’s NEXT Trend Database, which tracks products and claims at Natural Products Expo trade shows, charted innovation activity for newer plant-based milks. NEXT data revealed plain oat milk’s share of growth increased an impressive 371% between 2016 and 2018, followed by flavored flax milk (136%), plain cashew milk (83%) and other plant-based milks (69%).



Source: NEXT Data & Insights

NEXT found substantial negative share growth for flavored hemp milk, flavored cashew milk, flavored coconut milk and plain coconut milk (-80, -34, -26 and -17%, respectively). Almond milk, a pioneer in the plant-based milk category, witnessed declines of share growth for flavored almond milk and plain almond milk (-14.6 and -10.95%, respectively).

NEXT data also revealed several nondairy categories experiencing increased share of growth including liquid nondairy creamers (1,012%) nondairy coconut yogurt (368%), nondairy yogurt (182%), nondairy almond yogurt (138%) and nondairy cheese (110%).



Source: NEXT Data & Insights

## Formulating for function and taste

Improvements in plant-protein formulation options, coupled with greater formulation expertise, offer product developers the opportunity to capitalize on this consumer appetite for plant proteins in a variety of dairy alternative products. The success of the plant-based industry, however, will be based on how well manufacturers can provide consumers with the great tastes and textures they enjoy from animal-sourced products.

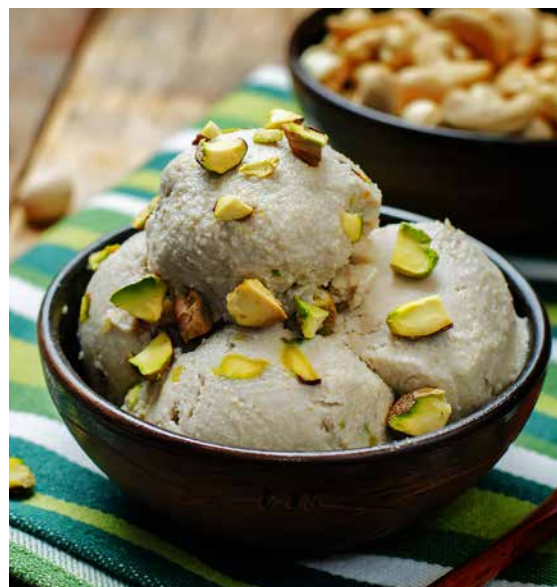
Plant-based ingredients often lack dairy-based characteristics that are distinctly associated with fats such as richness, mouthfeel and masking. As Kim Decker explains ([page 16](#)), today's range of novel ingredients and technologies provide product developers the necessary tools to create the satisfying taste and indulgent richness consumers expect from traditional dairy applications in dairy-free formats.

Consider strides made in the plant-based cheese sector. Formulators are overcoming textural issues of pasty, grainy, drying mouthfeel, sliceability, shredability, stretch and melt, allowing brands to launch a range of vegan shredded, sliced and block cheeses that taste and perform like traditional dairy cheeses. Just last year, Morningstar Farms' introduced its Cheezeburger, a "perfect harmony of ooey, gooey, Cheddar-style cheeze and a juicy, meat-like patty." But a successful launch takes a lot of benchwork. Our Brand roundtable ([page 32](#)), details lessons learned from Mooala, Alden's and siggi's—three brands who kicked dairy to the curb.

As highlighted in our In the aisle column ([page 35](#)), Miyoko's Creamery recently launched a new line of oat and legume-based cheeses that not only mimics the taste of real Cheddar or pepper jack cheese, but also the ways these cheeses are typically consumed and how they melt. Rucksack Foods also launched OATzarella, a nondairy "mozzarella" made with gluten-free oats, extra virgin olive oil, tapioca flour, agar agar and sea salt.

All these cheesy successes are carrying over to the foodservice sector that already has found with meat alternative sales. Beginning March 1, fast-food hamburger chain White Castle will offer a dairy-free alternative to Cheddar cheese (made by GOOD PLANet Foods) in its New Jersey and New York City restaurants.

"Our Impossible Slider was an instant Craver favorite, but it's about to get a new dimension with the introduction of dairy-free Cheddar," said Jamie Richardson, vice president of White Castle. "We are excited to bring this new nondairy, vegan item to Cravers in the New York and New Jersey areas with the hope of taking it to other markets in the future."







## On-pack messaging is key

Finally, brands looking to market their dairy alternative products must be mindful of how they identify those products. As Anna Benevente discusses on [page 10](#), under the Federal Food, Drug and Cosmetic Act (FD&C), FDA has jurisdiction over the labeling for food products, including how the product may be named. Called the “statement of identity,” it is generally the “common or usual” name for that food product and is required to be declared prominently on the packaging.

In certain cases, FDA will dictate conditions on the type of food that can be called by a certain name. These “standards of identity” set requirements that must be fulfilled for a food product to be marketed under that name. If the food does not meet those conditions, then it must be marketed under a different, non-standardized name. Food products that do not meet the standard of identity declared on the label may be considered misbranded and subject to enforcement action.

Consider the intense debate surrounding whether plant-based beverages such as almond milk or soy milk can use the term “milk” in their statements of identity. FDA has based its enforcement strategy on the presumption that any product including “milk” in its name must conform to the standard of identity for milk; it is not sufficient to simply qualify it with the name of a plant source such as “soy milk.”

The agency has issued warning letters to companies that identified plant-based beverages with the word “milk,” deeming the products misbranded. In the case of “soy milk,” the agency stated it considered “soy drink” and “soy beverage” to be acceptable common names for that product. While impacting standalone products such as soy and almond milk, the ramifications also can be felt across the marketplace toward other products traditionally formulated with dairy ingredients.

FDA has standards of identity for other traditionally dairy-based products such as ice cream, cream, yogurt, sherbet, butter and different types of cheeses. These standards function in a manner like that of the milk standard, explicitly laying out what can be included as an ingredient.

The good news is FDA is reassessing its approach to standards of identity and reviewing comments on the labeling of plant-based products with names that included terms traditionally associated with dairy foods such as “milk,” “yogurt” and “cheese.” A key point of contention is determining whether consumers understand the differences in the basic nature, characteristics, ingredients and nutritional components of plant-based products compared to their dairy counterparts. ♦



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How have you incorporated dairy alternatives into your diet?

**A.** I stock Madeline Haydon's product, nutpods, in my fridge at home. I use this every morning; the hazelnut variety tastes amazing, it's unsweetened so I don't have to worry about a sugar crash, and Whole30 approved.



**Jenna Fitch,**  
community & conference  
content director, New Hope Network

**A.** I'm looking to replace dairy wherever I can, so I use Silk soy creamer for coffee, macadamia milk for cereal, almond milk for smoothies, and my toddler son drinks Ripple pea protein-based milk.



**Duffy Hayes,**  
assistant editor

## Food & Beverage Insider

Food & Beverage Insider leads CPG brands from ideation through manufacturing, supporting the development of clean label, natural and healthy food and beverage products. FBI provides in-depth data and analysis of the markets and is the source for the latest on ingredients, formulation, supply chain and regulatory issues affecting product innovation. As an official content provider for SupplySide and Food Ingredients North America (FINA), FBI connects ingredient buyers and suppliers with executives across the health and nutrition marketplace.

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