

# Pectin's 'a-peeling' future



**UniPECTINE**<sup>®</sup>  
Uniquely perfected for you

**E**ven before the pandemic, consumers' health and wellness concerns were having a major impact on the food and beverage landscape. Today, those far-reaching effects are evident across categories, as brands race to bring forward a new generation of products that reflect shoppers' health perceptions – from plant-based to sugar-reduced.

Along the way, product developers are re-discovering pectin. The ingredient, which combines functional performance with label appeal, is establishing a foothold in an array of other food and beverage categories. From plant-based dairy alternatives to low-calorie beverages, learn how pectin is helping brands respond to today's biggest marketplace trends.

# Key categories primed for pectin

## Focus on flavor

The Spreads category is a hotbed for flavor innovation. Brands are enticing consumers with something for every taste, from products that feature bold gourmet flavors like smoked pepper to subdued floral notes like rose. There's also a clear move toward unique flavor pairings, such as rhubarb jams with cardamon hints or smoked pepper infused marmalades.<sup>5</sup> Pectin, with its clean flavor release, allows even the most subtle flavor twist to shine.



Sourced from citrus peels and apple pomace, pectin offers plenty of label-friendly appeal. For many shoppers, there's a nostalgia factor with pectin, as they fondly associate it with grandma's homemade jams and jellies. That familiarity is reflected in proprietary research from Cargill, which found 47% of U.S. and 53% of European consumers are well aware of pectin as a food ingredient.<sup>1</sup>

Familiar with pectin as a food ingredient<sup>1</sup>:

47%  
U.S. consumers

53%  
European consumers

What those consumers may not realize, however, is how versatile the ingredient has become. Led by Cargill, the company that first pioneered commercial-scale pectin production in 1948, pectin suppliers continue to find new uses for the trusted ingredient. It's proven especially valuable in trendy vegan and reduced-sugar applications, which helps explain why the pectin market is expected to grow at an average rate of 3% year-on-year globally.<sup>2</sup>

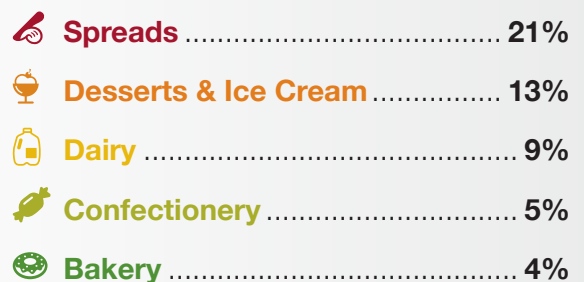
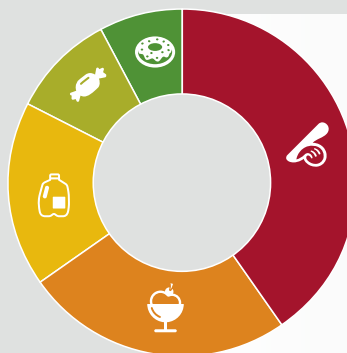
While the ingredient has found a place in everything from ice cream to vegan gummies, spreads remain its biggest application area. On the global stage, one in five new spreads launched in 2021 included pectin in the formula.<sup>3</sup> Not surprisingly, the ingredient remains popular in the confiture and fruit spreads space, a subcategory that accounts for roughly 80% of new spread launches.<sup>4</sup>

Within the Spread category, trends around vegan formulation, sugar reduction, and authentic, natural and homemade recipes are aligning to drive continued growth. They also suggest opportunity for pectin. Being plant-based, it is a trendy, functional go-to ingredient which helps maintain texture and mouthfeel in reduced-sugar applications. Its connection to nostalgia and grandma's kitchen fits perfectly with premium products positioned as handcrafted or traditional recipe.

Other key categories for product innovation with pectin include Desserts & Ice Creams, Dairy, Confectionery and Bakery. Much like the Spreads category, the ingredient's alignment with broader consumer trends is fueling its continued growth.

## Top categories for pectin

% of global launches that include pectin



Source: Innova Market Insights, 2021

# It starts with health

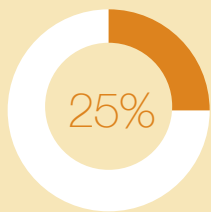


Dig into those trends, and it soon becomes clear that health has become one of the biggest influences across the food and beverage landscape. Research from FMCG Gurus finds consumers embracing healthier lifestyles, as a bid to stay fit and active until late in life. Eight in ten shoppers say they plan to make healthier food and beverage choices,<sup>6</sup> and many see reducing sugar and calories as a key avenue toward achieving that goal.<sup>7</sup>

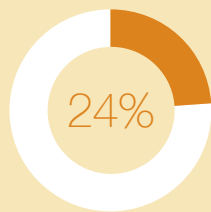
Health concerns are also a big reason why plant-based eating is on the rise. Nearly four in ten (37%) European shoppers view plant-based foods as healthier than animal-based foods. Among American consumers, the numbers are even higher; three in four (76%) consider plant-based choices healthier.<sup>8</sup>

Those trends are also evident in the NPD claims associated with products containing pectin. Nearly a third (31%) of these products carried a plant-based related claim, and 13% carried a sugar-related claim. Globally and across categories, Halal (29%), plant-based (24%) and vegan (24%) are the fastest-growing claims associated with pectin-containing products (CAGR, 2015-21). Sugar-related claims – low sugar and no added sugar – round out the top five.<sup>9</sup>

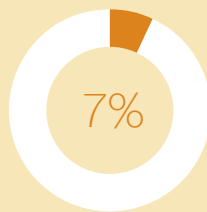
## Fastest-growing claims for global product launches with pectin



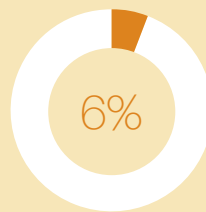
Plant-based



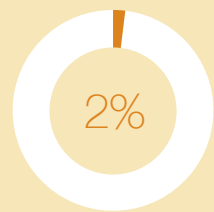
Vegan



Low Sugar



No Added Sugar



Gluten-free

Source: Innova Market Insights, Global, 2015-21.

# 16%

In 2021, 16% of new product launches with sugar-related claims included pectin.

Innova data also helps illuminate where pectin is having the biggest impact on plant-based NPD. Globally, of all product launches in 2021 with a plant-based related claim, 11% included pectin. However, categories like Desserts & Ice Creams (23%) and Spreads (21%) saw even stronger correlations (2015-21).<sup>10</sup>

Pectin's prominence in new product launches with sugar-related claims is even higher. In 2021, 16% of these products included pectin. Perhaps not surprisingly, spreads with a sugar-related claim are a key space for pectin, as the ingredient was included in 39% of these launches (2015-21). Pectin is also a regular in dairy launches with sugar-related claims, included in 16% of these products (2015-21).<sup>11</sup>

# Finding the perfect pectin



Whether brands are targeting label-friendly, plant-based or sugar-related positioning, Cargill's pectin lineup supports innovation across a range of applications and product development goals. It includes both high-methoxyl (HM) and low-methoxyl (LM) pectins, for greater formulation flexibility. LM pectins can be further categorized as either amidated (LMA) or non-amidated (LMC).

HM pectins, which need a high solids content (greater than 60%) and a low pH (2.8-3.5) to form a gel, are used to create chewy confections and thick jams. They also have application in reduced-sugar beverages, where they add viscosity and improve mouthfeel.

LM pectins work a little differently, as they rely on calcium to form a gel. As a result, total soluble solids are less important, making LM pectins the perfect choice for many applications which don't reach 60 brix. LM pectin can bring a wide variety of texture, playing on calcium content and its range of pectin reactivity (DE).

Pectins bring a lot of functionality, but sometimes to achieve a brand's texture goals, they're combined with starches, fibers or carrageenan. Because Cargill's texturizing experts understand how all these ingredients act independently and in combination, we can help formulators quickly land on the best texturizing solution for their unique needs.

Further, by combining our texturizing and sweetening expertise, Cargill can help brands across the continuum of their sugars and calorie reduction journey, with solutions to deliver great taste while maintaining mouthfeel and texture.

## SPOTLIGHT

### UniPECTINE® for fruit applications

#### HM UniPECTINE®

#### UniPECTINE® OF, OB, OG and OH series

Cargill offers a complete range of HM, LMA and LMC pectin solutions, perfect for all types of fruit sub applications (including jam, fruit preparation for dairy industry and preparation for bakery industry). The line includes specialties suitable for standard, reduced-sugar and/or organic applications, and covers a full array of specifications with regards to reactivity, pH, calcium content of fruit, filling temperature and more. These pectin solutions enable great fruit suspension and help ensure consistent, stable texture in both conventional and sugar-reduced applications.

### UniPECTINE® for dairy/plant-based dairy alternatives

#### HM UniPECTINE®

#### UniPECTINE® ADF, AMP, AYD and AYS series

This range of pectins is designed for dairy and plant-based dairy alternatives. The texturizing ingredients help control syneresis, a key concern in these products. In yogurts, they also provide viscosity and firmness for both set and stirred products. The line includes both LM and HM pectins. LM pectins help provide a gelled or creamy texture in acidic, fermented, and neutral dairy and plant-based dairy products, while HM pectins protect proteins in acidic conditions and provide a pleasant mouthfeel. and help ensure consistent, stable texture in both conventional and sugar-reduced applications.

### UniPECTINE® for beverage applications

#### UniPECTINE® Q series

Our UniPECTINE® Q series consists of label-friendly solutions with thickening, viscosifying properties and good acid stability, suitable for a wide variety of beverages. In soft drinks, this pectin line builds a mouthfeel similar to fruit juices, making it a good candidate for juice drinks and low-calorie or sugar-reduced drinks.

#### Sweeteners

We're also well positioned in the field of sugar reduction. Our broad portfolio of nature-derived sweeteners offers sweetening solutions to meet a range of customer and consumer sweetness expectations, including **full- and low-calorie** sweeteners made from corn and wheat (e.g., glucose- and glucose-fructose syrups, dextrose, and polyols), and **no-calorie** sweeteners including **Zerose® erythritol** and stevia sweeteners.

In particular, erythritol, a bulk sweetener, and stevia, are much appreciated in beverages and dairy applications. By leveraging synergies between ingredients – such as erythritol, which has an upfront sweetness that rounds out well with stevia leaf extracts – it's possible to create great-tasting products that are up to 70% reduced in sugars and calories.

# Cargill prototypes



## “Fresh Sensation” low-calorie textured lemon drink with jelly bubbles

This low-calorie, carbonated lemon drink includes subtle jelly pieces for extra fun. UniPECTINE® OG 355CS creates the unique pearl sensation that enhances the drinking experience. Simply shake the drink for the jelly pieces to take shape, and let the bubbles stir your taste buds!

Applying ViaTech® steviol glycosides from stevia and C☆TruSweet® glucose-fructose syrup results in a great fruity taste and allows beverage manufacturers to place low-calorie claims front-of-pack with calorie reductions of up to 60%.

- Carbonated water
- C☆TruSweet® F42
- **UniPECTINE® OG 355CS**
- ViaTech® TS 300
- Flavor
- Emulsifier
- Citric acid
- Tri-sodium citrate
- Preservative

Nutrition Facts	Per 100 ml
Energy	77 kJ / 18 kcal
Fats	<0.5 g
<i>of which saturated</i>	<0.1 g
Carbohydrates	4.5 g
<i>of which sugars</i>	4.17 g
Proteins	<0.5 g
Salt	<0.0125 g

## “Delicious Yet Dairyless” plant-based yogurt alternative with a label-friendly fruit preparation

This vegetable fermented product has a smooth, creamy texture thanks to pea protein and a texturizing blended solution, Trillisse®AYS 0688 with UniPECTINE® inside. It's complimented with a label-friendly strawberry fruit preparation, made with 90% strawberries. We help to ensure a smooth and pumpable, thick texture using UniPECTINE® OG 125C, which brings a high stabilizing power and high water-holding capacity, while UniPECTINE® OF 959CSB's thickening properties make it possible to substitute starch.

### Plant-based yogurt alternative

- Water
- Sugar
- PURIS™ Pea 870
- Trillisse® AYS 0688
- Cargill coconut oil (Rainforest Alliance certified)
- Calcium phosphate
- Cultures

### Fruit preparation

- Strawberry
- Water
- Sucrose
- **UniPECTINE® OG 125C**
- **UniPECTINE® OF 959CSB**
- Trisodium citrate

Ingredients	%
Water	Up to 100
Sugar	8.00%
<b>PURIS™ Pea 870</b>	<b>4.00%</b>
<b>Trillisse® AYS 0688</b>	<b>3.50%</b>
Coconut oil	3.00%
Calcium salt	gsp to reach 120mg/100mL
Cultures	0.02%

Nutrition Facts	Amount per serving (100g)
Energy	73 kcal
Fats	3
<i>of which saturated</i>	2.8
Carbohydrates	11
<i>of which sugars</i>	8
Proteins	3.3
Salt	0.2



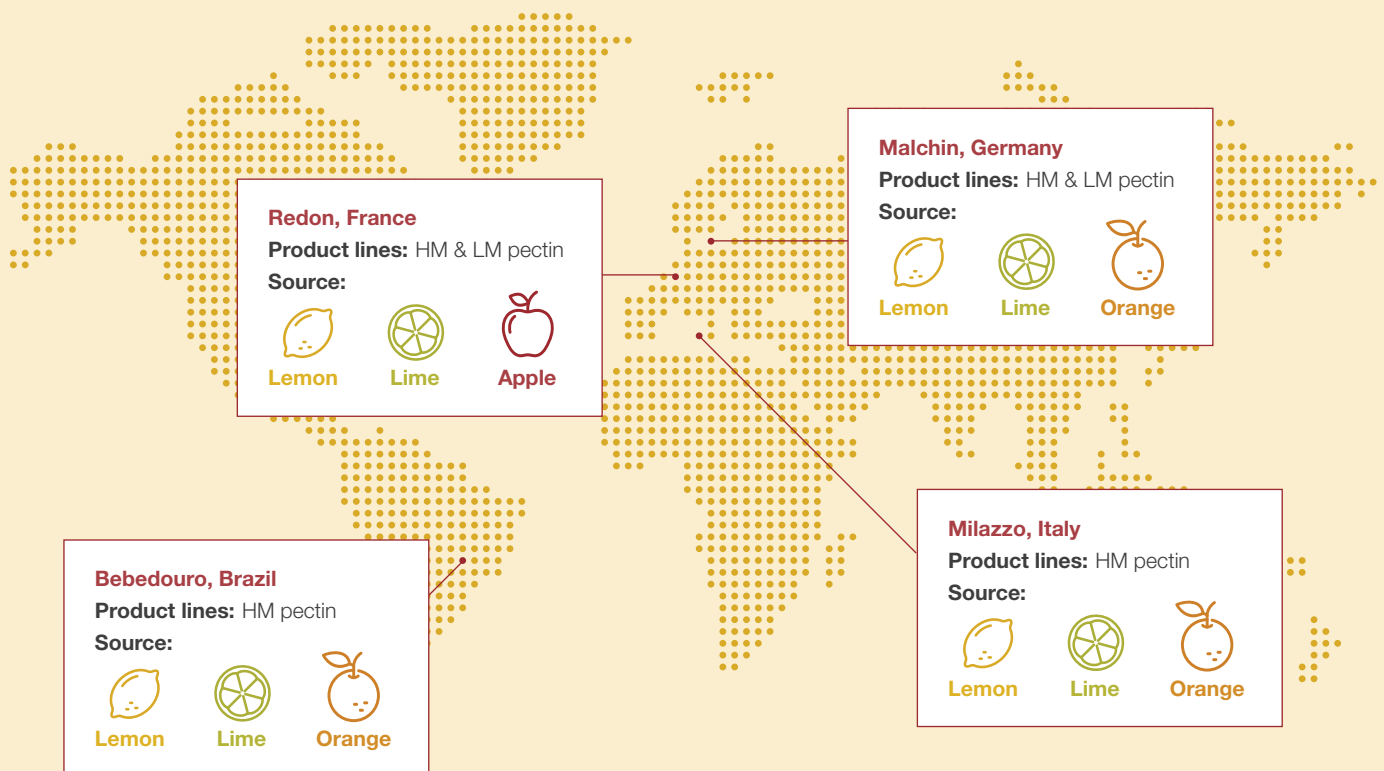
Plant-based yogurt alternative with label-friendly fruit preparation

# Supply reliability

Given its versatility and label appeal, it's no surprise that pectin demand is at an all-time high. In response, Cargill opened a \$150 million HM pectin plant in Bebedouro, Brazil, in September 2021. Built in the heart of Brazil's citrus-growing region, the new plant's proximity to citrus fields ensures an abundant supply of fresh fruit peels – the raw material required for premium pectin production.

The Brazilian plant also keeps with Cargill's commitment to source ingredients sustainably. This includes proximity to citrus suppliers and their Rainforest Alliance-certified farms, which helps minimize CO2 emissions from raw material transport and promotes regenerative agriculture practices. Taking sustainability one step further, the Bebedouro plant is powered by thermal energy generated from biomass and biogas.

The new facility complements Cargill's three other pectin plants located in France, Germany and Italy, spreading the company's production across two continents. These state-of-the-art production facilities produce Cargill's industry-leading pectin lines.



## The Cargill advantage

As a global ingredient leader, Cargill offers a broad portfolio of pectin solutions, sourced from diversified raw material. They're suitable for a wide variety of applications and backed by world-class formulation expertise and supply chain reliability. We can help you meet the most challenging application goals and marketplace demands, whether you are creating an entirely new product or reformulating existing ones. [www.cargill.com/unipectine](http://www.cargill.com/unipectine)

### References

- <sup>1</sup> Cargill proprietary research, 2021
- <sup>2</sup> Estimate based on Trade Atlas data & global volume developments
- <sup>3</sup> Innova Market Insights, 2021
- <sup>4</sup> Innova database, 2021
- <sup>5</sup> TrendHub, The Food People, 2021
- <sup>6</sup> FMCG Gurus, 2021
- <sup>7</sup> FMCG Gurus, The War on Sugar in 2021, Dec 2020
- <sup>8</sup> HealthFocus International, 2021
- <sup>9</sup> Innova database, 2021
- <sup>10</sup> Innova database, 2021
- <sup>11</sup> Innova database, 2021

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