

## PLANT-BASED FOODS TAKE ROOT



**D**riven by a growing consumer passion for wellness, sustainability and animal welfare, the market for plant-based foods is expanding rapidly, with consumers throughout Europe and around the globe placing increased emphasis on a plant-centric diet. Gone are the days when plant-based alternatives were relegated to niche consumers, warranting little shelf space on grocery aisles.

Today, companies are racing to create new products and brands that appeal to a more health-focused consumer.

But product developers be warned: this mainstream appeal comes with higher expectations for taste, texture and appearance – and an increasingly competitive landscape vying for a place in shoppers' grocery carts.

# Flexitarians drive demand for plant-based foods



The plant-based revolution is not being propelled by a growing cohort of vegetarian or vegan consumers. In fact, the number of consumers who profess to follow vegan or vegetarian diets remains small across Europe, whilst the number of consumers embracing what's been dubbed a "flexitarian" lifestyle has ballooned. Flexitarians mainly seek to reduce their consumption of animal-based foods, rather than giving it up altogether, and are increasingly adding vegan and vegetarian products to their shopping lists.

In the U.K., data suggests that one in three (34%) meat eaters have reduced their meat consumption,<sup>1</sup> whilst one in four (19%) dairy consumers have reduced their consumption of animal-based dairy products.<sup>2</sup> In comparison, just 3 percent of UK consumers view themselves as vegetarian and only 1 percent identify as vegan.<sup>3</sup>

**Flexitarianism** is also clearly taking root on the European continent. Research from Cargill reveals that 4 in 10 (43%) European shoppers consume both dairy and dairy alternatives – versus just 1 percent who claim they only consume alternative dairy products.<sup>4</sup>

The health benefits associated with plant-based foods appear to be the biggest motivator for flexitarian consumers. Almost four out of ten (37%) of European shoppers claim plant-based foods are healthier than animal-based foods, and a similar proportion claims you can have a balanced diet without consuming animal-based dairy. Research suggests environmental and ethical concerns play a role as well, but these concerns are bigger drivers for becoming fully vegan or vegetarian. For most of today's consumers, the sustainability appeal of plant-based foods is secondary to their health halo.

Whatever the reason, interest in plant-based foods is high, and so is the opportunity for food manufacturers. Euromonitor estimates that the global meat alternative retail market will reach USD 26 billion by 2024, whilst the milk alternative retail market is expected to reach USD 25 billion by the same year.<sup>5</sup>

Yet barriers remain to achieving that level of success. Today's mainstream consumers want something more than the tasteless alternatives that defined the category just a few years ago, and many consumers still need to be convinced that plant-based foods can be tasty as well as healthy. As Mintel found, among UK consumers who rarely or never try meat-free foods, one in four (26%) said a more meat-like taste could win them over, while one in five (18%) wanted alternatives with the same texture as meat.<sup>6</sup> Similar challenges face the dairy alternative market. Proprietary Cargill research suggests that the vast majority of dairy consumers in the UK and Europe still prefer the taste of animal-based dairy.

# 89%

of UK vegan meals are consumed by non-vegans.

Source: Kantar World Panel, 2019.

# 66%

of European dairy consumers prefer the taste of **real dairy** versus the taste of dairy alternatives.



Source: Cargill proprietary research, 2018.

# Vegan innovations drive growth

As the plant-based trend has taken hold, savvy brands have followed suit, launching a bevy of products into the space. Increasingly, they turn to on-pack vegan claims as opposed to vegetarian claims to signal a product's plant-based status. Though a relatively small number of consumers follow a strict vegan diet, the clear-cut definition of what is a vegan product – no animal ingredients, no ingredients tested on animals – makes it easier for marketers to stand behind.

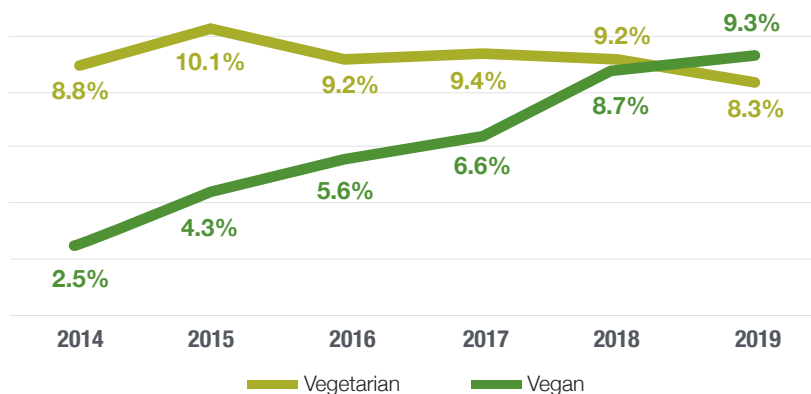
Data from Innova show the number of European food and beverage products making vegan claims increased fivefold between 2014 and 2019. Overall, the company reports that 9 percent of new food products launched in Europe in 2019 had a vegan claim, up from just 2 percent in 2014. In fact, new product launches with vegan claims now exceed these with more loosely defined vegetarian claims in all countries except the UK.<sup>8</sup>

For new players hoping to enter this rapidly expanding field, a word of caution. The vegan space is no longer the sole bastion of a relatively few niche players. Major consumer packaged goods (CPG) companies, grocers and food service providers are flocking to the vegan marketplace. McDonald's Corp.'s United Kingdom business unit rolled out its Veggie Dippers, a first foray into the vegan space. CPG giants like Lidl, Danone, Nestlé and Unilever have all expanded their vegan offerings. In the grocery aisle, UK supermarket giant Sainsbury's reported a 65 percent increase in sales of plant-based products year-on-year, prompting the retail giant to launch a new range of vegan products.<sup>9</sup> It seems everyone wants a slice of the plant-based pie.

## Vegan vs. Vegetarian claims in Europe

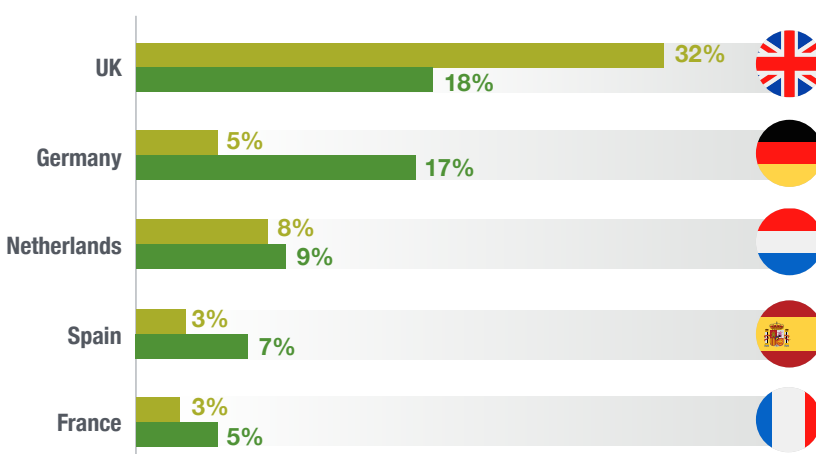
% of launches with a vegetarian or vegan claim versus all food & beverage launches

Europe – 2014 to 2019



% of launches with a vegetarian or vegan claim versus all food & beverage launches

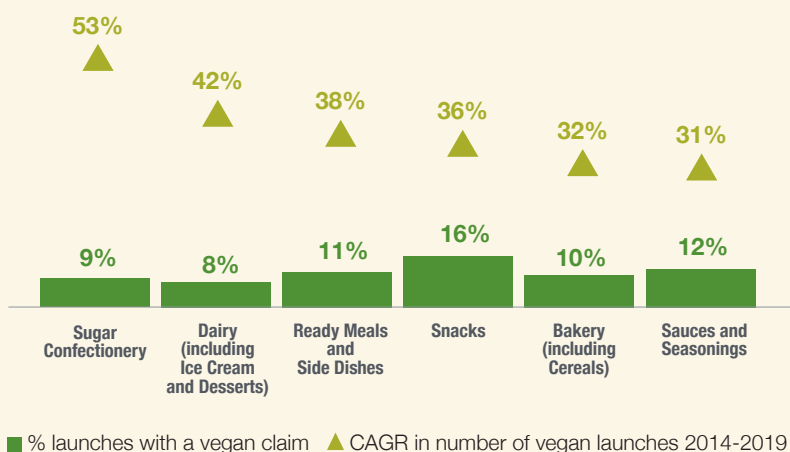
Top 5 European countries – 2019



Source: Innova Database, 2020

## Vegan claims by Category (Europe)

% of launches with a vegan claim (2019) and % CAGR in number of vegan launches (2014 to 2019)



Source: Innova Database, 2020

## Technical challenges remain

Consumers are clearly intrigued by the tsunami of new plant-based products. However, to make sure that product innovations are more than a passing fad, manufacturers must up their formulation game. Animal-based ingredients have specific properties that impact taste and texture. Even if many consumers are receptive to switching to a vegan or vegetarian alternative, most will have little tolerance for change in flavor or organoleptic characteristics.

Nor is the plant-based revolution immune to other industry forces, such as the trend for more label-friendly formulations. A typical plant-based meat substitute might have as many as 15 to 20 ingredients. Some are also laden with high levels of sodium, saturated fat, additives and artificial colors. Finding new, more label-friendly formulations might well be the next big challenge.

Further complicating the picture, developers are faced with an ever-growing list of possible plant proteins, each with its own unique properties.

It takes a well-balanced mix of plant-based ingredients to be able to mimic the animal ingredients that need to be replaced. Just as the challenges vary by application, so too, will the solutions.

## A partner for plant-based formulations

Gone are the days that plant-based products catered to a small consumer segment that was willing to compromise on taste and texture. With only one chance to impress today's flexitarians, finding the right ingredient partner is a critical first step for manufacturers looking to introduce or expand their plant-based offer.

Cargill's broad range of solutions suitable for vegan and vegetarian formulations — including proteins, starch, pectin, carrageenan, lecithin, sweeteners and blends — gives formulators the flexibility to address their unique application needs. Apart from offering alternative protein solutions, Cargill can deliver on specific texture requirements, from gelling and thickening, to emulsifying, water binding, structuring and stabilizing. And, as pressure mounts for more label-friendly solutions, the breadth of our product offer gives product developers greater options.

We pair our deep product portfolio with technical expertise, helping manufacturers to answer processing challenges and solve formulation gaps.

Next to our offer of single ingredient solutions, we can combine various proteins, texturizers and sweeteners into functional systems and tailored blends to meet specific customer demands.

We have the ability to develop prototypes and validate new formulations in our pilot plant, approximating the conditions of real-world processing lines.



# Cargill's broad range of solutions



## Meat Alternatives

Meeting consumers' organoleptic and texture expectations for meat alternatives is a major challenge. Animal proteins bring a distinctly chewy, succulent and firm bite that is difficult to replicate when switching to plant-based proteins.

We offer wheat-based proteins to improve binding, juiciness and chewiness, and continue to develop our pea-based protein offer for Europe. Our functional native starches help achieve the optimum balance between bite and juiciness, whilst our seaweed solutions help with gel formation and water retention. Using our functional systems and tailored blends, we can bring the whole formulation together for a complete solution.

Our solutions can be used in a wide array of meat alternatives, from cold consumed products like sliced vegan ham sausage, salami or paté, to hot consumed vegan burgers, sausages and nuggets.

### CARGILL SOLUTIONS:

- *Gluvital® vital wheat gluten*
- *Pea Protein*
- *SimPure® label-friendly functional native starch*
- *Satiage® RPM carrageenan*
- *Flanogen® REM functional system*
- *Tailored blends*



## Dairy Alternatives

Protein and fat are key milk components which contribute to texture and mouthfeel in dairy-based products.

Cargill offers a comprehensive range of plant-based ingredients such as starches, pectin, carrageenan, lecithin, and sweeteners. We also continue to develop our protein offer for Europe. Besides these single ingredients, we offer functional systems and tailored blends, enabling a complete solution.

Our solutions are suited for various applications, including dairy-free alternatives to yogurt, cheese, drinks, desserts, ice cream, and creams. Our ingredients can provide different functionalities such as stabilization and syneresis control. They can be used for gelling, thickening, emulsifying, or foaming. Some of our ingredients are also specifically designed to stand up to the harsh processing parameters that often exist in dairy alternative applications.

### CARGILL SOLUTIONS:

- *Prowliz® hydrolyzed wheat protein*
- *Pea Protein*
- *SimPure® label-friendly functional native starch*
- *Functional modified starches*
- *Unipeptine® AYS & AYD pectin*
- *Satiage® ABN, ADG & ADF carrageenan*
- *Emulpur® & Leciprime® lecithin*
- *Sweeteners*
- *Functional systems*
- *Tailored blends*

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## Gelatin Replacement

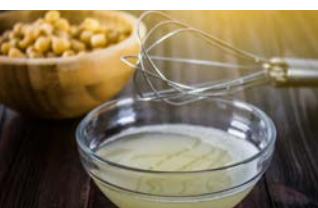
Sugar confectioners are increasingly looking for alternatives to animal-based gelatin, either simply to expand their offer with vegan or vegetarian options, or to provide a new taste experience. In some cases, they switch to plant-based proteins to save costs. Whatever the objective, the challenge

is that gelatin brings unique sensory characteristics, from its distinctive first bite and chewable, elastic nature, to its reputation for good flavor release. In marshmallows, it also has foaming properties.

Cargill can support with gelatin reduction as well as full gelatin replacement. Our specialty starches, pectin, and carrageenan solutions, as well as our functional systems and tailored blends can help confectioners land on the perfect gelatin alternative to achieve the desired texture and eating experience for either gummies, jellies, wine gums, chewy candies or marshmallows.

### CARGILL SOLUTIONS:

- **C☆Set and C☆ClearSet® specialty starches**
- **Unipectine® PG pectin**
- **Satiagel® PG carrageenan**
- **Gelogen® PG functional systems**
- **Tailored blends**



## Egg Replacement

Eggs play critical roles in bakery and culinary dishes, providing aeration, emulsification and structure, maintaining moistness, and even influencing color and flavor. Manufacturers may want to replace eggs in order to expand their offer to vegan or vegetarian options, or to

reduce the content of eggs to save costs.

Cargill's highly specialized emulsifying starches known as n-OSA starches deliver both thickening and emulsifying properties and are shelf stable. In culinary applications like dressings and emulsified sauces, our n-OSA starches enable full egg replacement. In bakery, they can partially replace eggs.

In addition, we can also offer tailored blends to support egg replacement or egg reduction in various applications.

### CARGILL SOLUTIONS:

- **n-OSA starches**
- **Tailored blends**

Our solutions are tailored, tried and tested to meet the needs of today's complex plant-based formulations. To learn more about Cargill's plant-based portfolio, contact your Cargill representative, visit [cargill.com/food-beverage](https://cargill.com/food-beverage), or call us on **+32 15 400 532**.



## References

- <sup>1</sup> "Veganuary: UK overtakes Germany as world's leader for vegan food launches." Mintel. Jan. 10, 2019. <https://www.mintel.com/press-centre/food-and-drink/veganuary-uk-overtakes-germany-as-worlds-leader-for-vegan-food-launches>
- <sup>2</sup> "How 'flexitarianism' is transforming consumers' eating habits," YouGov. April 17, 2019 <https://www.marketingweek.com/flexitarianism-transforming-consumers-eating/>
- <sup>3</sup> "European Perceptions on Dairy," Cargill proprietary research. July 2018
- <sup>4</sup> Ibid. Cargill. And "International Plant Study: Consumer Entry Points in Plant-based Eating and Drinking," HealthFocus International. August 2017.
- <sup>5</sup> Euromonitor International, 2020
- <sup>6</sup> Ibid. Mintel.
- <sup>7</sup> Ibid. Cargill.
- <sup>8</sup> Innova, 2020
- <sup>9</sup> Chiorando, M. "Plant-Based Sales Skyrocket by 65% Year-On-Year at Sainsbury's," Plant Based News. Dec. 3, 2019. <https://www.plantbasednews.org/lifestyle/91-brits-flexitarian-diet-vegan-food-sales-surge>