

INSIGHTS REPORT

Top dog solutions: How INFUSE is taking plant-based meat alternatives further



Driven by a growing consumer passion for balanced nutrition, sustainability and animal welfare, the market for plant-based meat alternatives is expanding rapidly.

Gone are the days when meat alternatives were only marketed to a niche group of consumers. Today, companies are racing to create new products and brands that appeal to a more mainstream consumer. This means that these options are rating up an ever greater amount of space in the supermarket chill cabinet.

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. INFUSE by Cargill™ can help you deliver the high-quality plant-based hot dogs consumers can enjoy without compromise on the eating and preparation experience.

THE MARKET FOR MEAT ALTERNATIVES



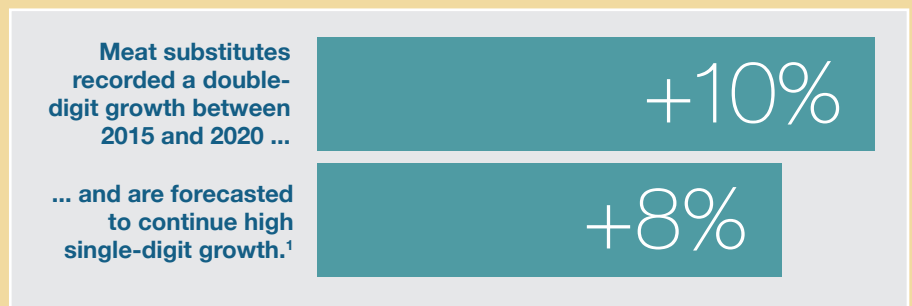
Plant Popularity features highly in Cargill's TrendTracker™

Consumers are globally increasingly interested in **plant-based foods & beverages** with 55% of global consumers now stating that their diet includes meals without meat or fish, although they're not vegetarian or vegan.

Source: HealthFocus International, 2020

As plant-based eating moves into the mainstream, plant proteins are in the spotlight benefitting from the health halo of both plants and protein.

The total Meat Substitutes market accounted for 190,000 tons in Europe while the retail market accounted for 181,000 tons. This represents about **2.3% of the total retail volume** of animal-based Processed Meat (excluding Processed Fish and Seafood), and **2.7% of the total retail value**.

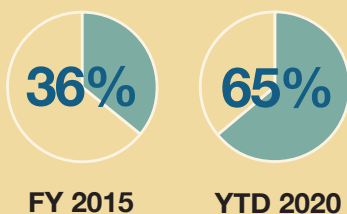


66% of the total European retail volume of meat substitutes is represented by the UK, Italy and Germany. The Finnish and French market are the fastest growing markets, with 42% and 33% CAGR (retail volume, 2015-2020) respectively. Similarly, Scandinavian countries and Spain are seeing strong growth with a CAGR (2015-2020) of around 20%.¹

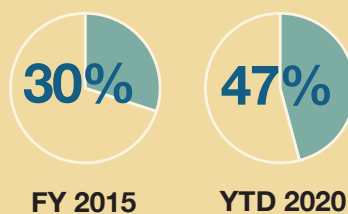
Meat substitutes launches have grown by 12% CAGR (2015-2020) in Europe, versus a 5% CAGR growth in animal based process meat products (excluding deli meat, poultry, fish and seafood). Meat substitutes take a growing share in the total meat & substitutes market from 27% in 2015 to 33% in 2020. Strongest growth in meat substitute launches is seen in Finland, Sweden, Belgium, UK and Denmark.

The focus for meat substitutes on packaging²

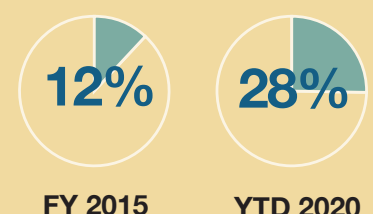
Vegan claims:



“High in Protein” or “High Source of Protein” claim:



“High in Fiber” or “High Source of Fiber” claim:



The incidence of “Vegetarian”, “Organic” and “No additives preservatives claims” seems to be diminishing over the years.

¹ Source: All market data above is Euromonitor, 2015-2025, Europe

² Source: All launch data above is Innova, 2015-2020, Europe

WHAT'S NEXT



Plant-based meat alternatives are trending like never before. But offering yet another plant-based burger or minced meat just won't cut it on the crowded supermarket shelf. Today's vegetarian and flexitarian consumers are looking for great meat alternatives for light snacking too.

Consumers also want nutritious plant-based alternatives to hot dogs that meet consumer expectations for that knock-like bite texture and great taste they get from 'the real deal'.

Getting there is easier said than done, as plant-based formulations poses a number of challenges in processability, emulsion stability and texture authenticity. But it can be done. Just let INFUSE by Cargill™ do the work for you!

PLANT-BASED

MEET INFUSE by Cargill™

INFUSE
by Cargill

Meeting consumers' organoleptic and texture expectations for meat alternatives is a major challenge.

By employing a multiple ingredient blending approach and through effective formulation finetuning, INFUSE by Cargill™ ingredient blend solutions can help you create high quality plant-based hot dogs that your customers can enjoy without having to sacrifice on texture or taste.

Blending the best in carrageenan and gums, INFUSE has designed an ingredient blend, optimized for use in plant-based hot dogs formulated with pea protein.



SPOTLIGHT

IN FUSE by Cargill



INFUSE by Cargill™ is the new service offering model from Cargill Starches, Sweeteners & Texturizers Europe.

It brings together the company's extensive ingredient acumen to rapidly create tailor-made ingredient blends, helping customers speed up innovation and market launch.

Customers in Europe have been using Cargill's functional systems for more than 40 years to achieve custom texturizing ingredient blends. INFUSE by Cargill™ expands on that work, adding sweetness and other specialty ingredients such as proteins and fibers, to address a broader array of customer formulation challenges.

Three pillars serve as the foundation for Cargill's customer focus in Europe:



An unwavering attention to providing on-trend solutions.



A commitment to speed to market.



Access to deep technical expertise to help create tailored ingredient blends.



OUR TOOLBOX OF SOLUTIONS



Having the ingredients that can provide a solution is of course important, but equally so is having the lab and pilot capabilities to build tailor-made solutions, as well as the technical knowledge to come up with different formulation options.”

Zuzana Van Beveren, Senior Meat Technical Service Specialist

At Cargill, we truly understand plant-based meat alternative formulations and ingredient interactions.

The broadening market appeal of meat alternatives brings with it its' own challenges. Even if many consumers are receptive to switching to a vegan or vegetarian alternative, most are unwilling to compromise on flavor and other organoleptic characteristics. Furthermore, some consumers expect an almost exact match in terms of the whole experience, from preparation to eating.

Getting there is easier said than done, as replacing both the animal protein and animal fat present interesting formulation hurdles to overcome. “At the end of the day you are changing the type of protein that you are working with into something entirely different. You are also replacing the animal fats with plant-based oils and fats, which impacts texture, organoleptic properties, product stability, as well as overall product acceptance,” Zuzana explains.

The current market is further complicated as the demand for allergen-free products intensifies. This is leading manufacturers to seek out alternatives to soy, including the use of wheat protein and pea protein. This shift presents new challenges for formulators in terms of hydration ratio and speed.

Besides, there are several further processing challenges to be considered on the manufacturing front too, such as product stability during shelf-life. But there's no need to despair. We can get there by employing a multiple ingredient approach and through effective formulation fine-tuning, and this is where INFUSE by Cargill™ comes in.

SPOTLIGHT: PEA PROTEINS



Label-friendly:

- Produced from label-friendly yellow peas, which need no allergen declaration in Europe
- High quality protein content
- Rated as one of the most healthy plant proteins*

*Cargill IngredientTracker™ 2021



Great sensory profile:

- Mild flavor, low off notes
- Suitable for various applications, incl meat alternatives and non-dairy applications

#PLANTPROTEIN



Great functionality:

- Good visual appeal and outstanding solubility
- Provides firmness through water and fat binding function
- Combined with Cargill texturizers, it creates authentic meaty texture and improved mouthfeel



Pea Protein | Cargill Food Ingredients EMEA | Cargill

OUR SOLUTION



Flanogen® REM 1580 is a functional ingredient blend, designed to deliver on processability, emulsion stability and texture authenticity, while offering that knock-like bite, and juicy, firm texture consumers are expecting.

- Synergy between **Carrageenan** and **Konjac gum** helps to achieve a good texture at cold storage conditions
- **Methylcellulose** ensures firm bite during hot consumption
- The blend ensures that a gelled structure is developed during cold storage

Suitable for vegans and vegetarians, requiring no gluten nor lactose labeling in Europe, and containing no soy, no gluten nor lactose, our solution blends the best functional ingredients to deliver mouth-watering plant-based hot dogs.

Our blends can be further optimized to the plant-based protein material used, and are designed to help withstand high processing tolerance. Thanks to the carefully selected modified starch based on waxy corn in the recipe, the hot dogs are able to withstand heat treatment and are freeze-thaw stable.

RECIPE & NUTRITIONALS: PLANT-BASED HOT DOGS

Ingredients	%
Water	60.235
Cargill rapeseed oil	12.00
FLANOGEN® REM 1580	5.00
Cargill vegetable fat IY45	3.00
Flavorings	2.00
C☆PolarTex™ 06727 modified waxy corn starch	1.00
C☆Dex® Dextrose	0.50
Colorants	0.065

Nutritionals	INFUSE recipe
Energy (kcal/100g)	213
Fats	16.1
<i>of which saturated</i>	2.4
Carbohydrates	3.8
<i>of which sugars</i>	1.2
Dietary fibers	2.1
Proteins	13.3
Salt	1.6



**IN
FUSE**
by Cargill™



Let's discuss how
INFUSE by Cargill™ can
enable the success of your
next meat alternative launch
within the booming but
increasingly crowded
plant-based protein aisle.

Time to get INFUSED

✉ Infusebycargill_solutions@Cargill.com

📍 www.cargill.com/infuse