

# NEWSLETTER



INGREDIENTS

— Your Long Term Partner

FLAVORS

Q3 2021

Dear Readers,

We look forward to welcoming you at Gulfood Manufacturing from the 7th – 9th of November 2021.

It has been two years since the last major Food and Beverage Ingredients event took place in the region and we are looking forward to a safe and active Gulfood Manufacturing show this year.

This year FSL is hosting the largest stand at the show and our key principals will also be present at the show. This exhibition is always a prime occasion for all of us to meet together in person and discuss good business opportunities, especially after a very quiet 2020.

In this newsletter we will be sharing insights into developing customized flavor profiles in the fastest growth area of the food industry – plant-based meat alternatives.

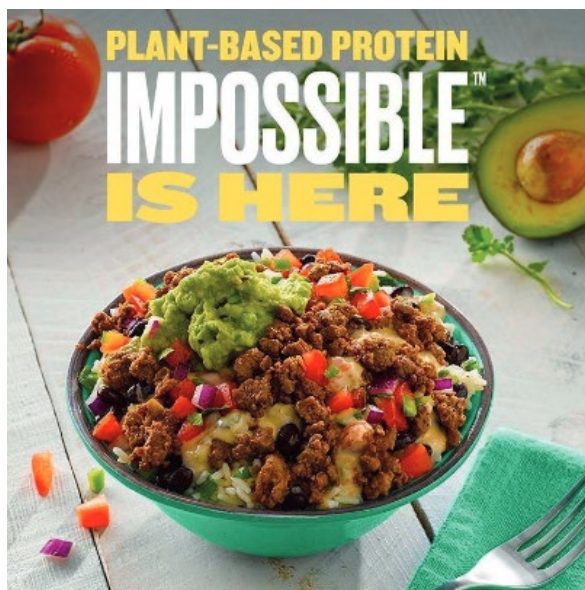
Please visit our stand and sample our Plant-Based Shish Kebabs, Burgers, Nuggets, Hot Dogs and Breaded Chicken and Fish Alternatives at our stand located at the entrance to Sheikh Saeed Hall # 2 (Stand A-36)

We are eager to see you at the show and offer you a taste of the future.



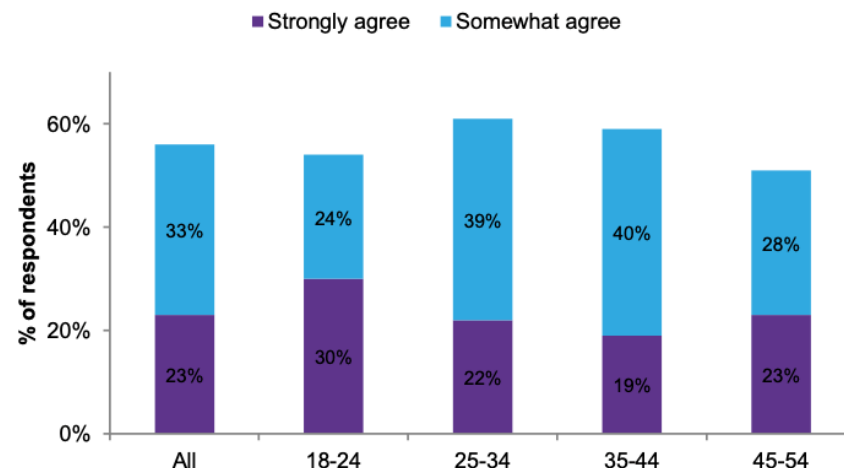
## THE ART OF PLANT-BASED MEAT FLAVORS

Plant-based meats are the hottest food trend globally, currently valued at \$25 billion with a growth rate of 40% in the Middle East from 2019-2020. Some brands which have made an early entry into our markets are Beyond Meat, Impossible Foods, Future Burger and Meatless Farm Meat Co to name a few. With the growing popularity, QSRs have also started exploring this food trend. Burger King first launched their plant-based meat burger to 25 countries across Europe in 2019 and in the UAE market in November 2020. Subway soon followed suit in the region and McDonald's China in partnership with Green Monday have also launched their first vegan meatloaf in March 2021.



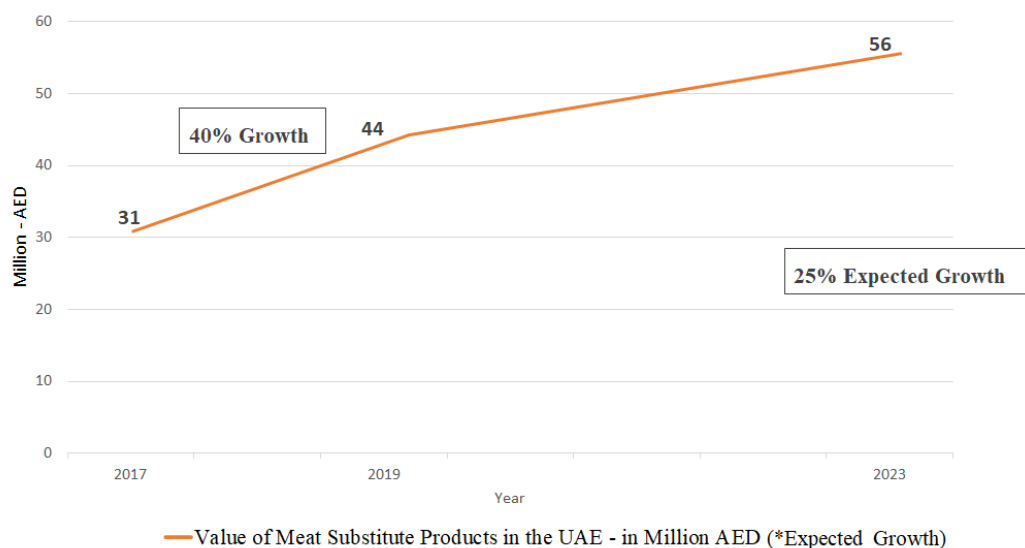
The coronavirus pandemic has been a major contributor to the rise in Plant-Based Meat Alternatives sales in 2020 and according to Bloomberg Intelligence report, the global market for plant-based foods could increase to fivefold growth by 2030 due to the rising demand for sustainable, ethical and healthy products. Recent data from Mintel's research study in Saudi revealed that half of all Saudi's agree that the COVID-19 pandemic is an indicator that they should eat less meat.

## Saudi Arabia: agreement that the COVID-19 pandemic proves humans need to eat fewer animals, by age group, July 2020\*



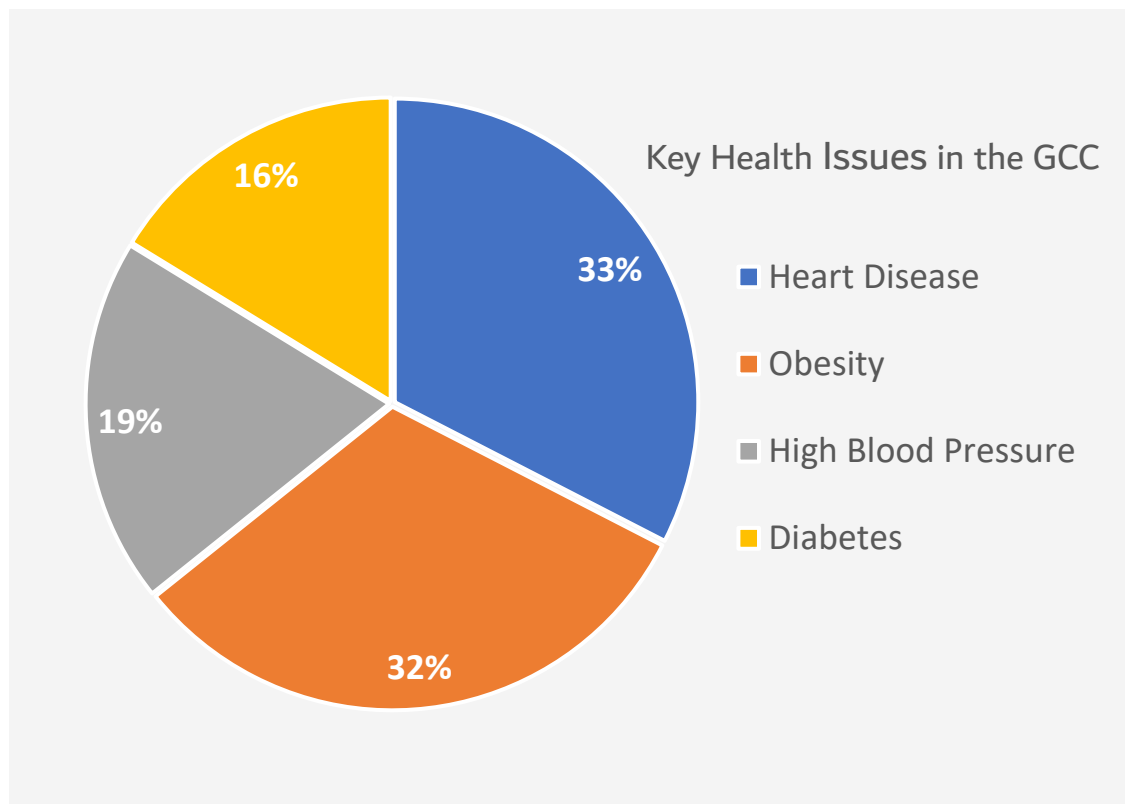
Source: Mintel 2021

## Value of Meat Substitute Products in the UAE – in Million AED



Source: [www.marketsandmarkets.com/](http://www.marketsandmarkets.com/)

More than 50% of Saudi's believe that they should eat less meat.

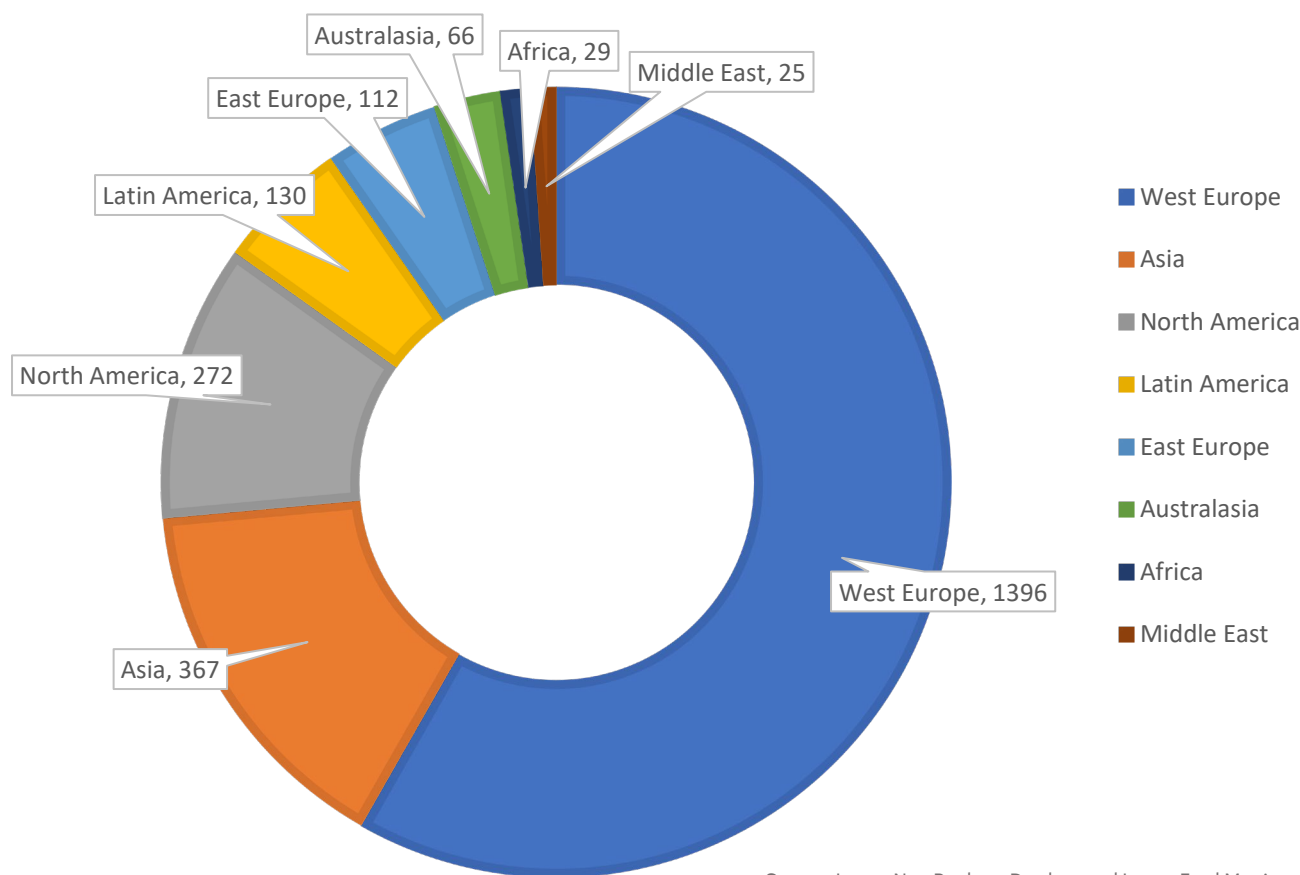


The shift in consumer behavior and preferences have been attributed to their concerns on personal health, animal welfare and sustainability. The study also found that in UAE alone, 32% of the population is obese, 19% have diabetes and 21% of the population suffers from high blood pressure – all of these health issues are often due to excess meat consumption.

The WHO recommends an annual intake of no more than 22kg of meat per person but in the GCC, meat consumption is triple that amount at 67kg per person. This is where the problem lies and explains why consumers are seeking to reduce their meat consumption with plant-based alternatives which do not contain cholesterol and which contain fewer calories. Hence, various food companies are launching plant-based meats in the Middle East and Africa market to offer consumers healthier alternatives which address this pressing health problem.

The wave of innovation behind plant-based meats which mimic the organoleptic properties of traditional meat products are gradually being adopted by meat industries to cater to the interests of their consumers. Companies who are new in this sector anticipate a continued growth of the product and are keen to develop a meat alternative that will be accepted by the market.

## MEAT ALTERNATIVE LAUNCHES 2020 BY REGION



Source: Innova New Products Database and Innova Food Metrix

2020 was a breakout year for plant-based foods across the (retail) store. The incredible growth we saw in plant-based foods overall, particularly plant-based meat, surpassed our expectations and is a clear sign of where consumer appetites are heading.”

– Kyle Gaan, Research Analyst, Good Food Institute



Food developers focus on the development of sustainable products that can re-create traditional meat experiences. Appearance, texture, and flavor are the three important parameters that food developers need to balance in order to achieve the desired characteristics of their product and bring it closer to the actual meat based targets.

Plant-based meats resembling the traditional meats must have a distinct bite, chewiness, firmness and most importantly the distinct taste of a traditional meat.

## The Essential Ingredients

Plant proteins are more rigid and unbending in nature and so do not offer the elasticity and flexibility of a traditional meat. However, there are several plant proteins sources that can be texturized and have a potential to be used for the development of plant-based meats.

**Soy Protein** – as per 2020 data released by Mintel, soy protein is the most common plant protein used in plant-based meats for its widespread availability and economic pricing. Several studies have been done on this protein and texturization process. It has an ability to perform like a meat when it comes to texture and has been the main ingredients for most of the plant-based meat products. Impossible foods have reformulated their Impossible Burger and shifted from texturized wheat protein to texturized soy protein - a product which is being sold in over 1000 supermarkets in the USA.

**Pea Protein** – has gained attention and popularity as it can be used in plant-based meat in several forms. It also binds with water and fat and has an ability to generate a firm texture even after thermal processes, hence, it can also be a filler, binder and functional improver. However, studies have shown that pea-protein has weaker structure than soy protein therefore, hydrocolloids are often added in the recipe to address this issue. The awareness and popularity of Pea protein rose to a new high when Beyond Meat incorporated it into their recipe which boasts a complete amino acid profile.

**Wheat Protein or Gluten** is also used to make **seitan** which also has a savory taste and a meat-like structure.

**Rice Protein Isolate** is a plant-based protein that can be used on its own or in combination with other plant-proteins.

Other protein sources with potential for inclusion in plant-based meats include spirulina, peanut protein concentrate, rapeseed meal, quinoa and protein from surplus potatoes.

## The Binders and Texturizing Agents

To develop a plant-based recipe that could mimic the organoleptic properties of a traditional meat requires the addition of a wide array of ingredients which could act as stabilizers, gelling agents, thickeners, and emulsifiers. These ingredients will help bind the water and fat presents in the formulation and will adhere to the plant proteins, resulting in a good texture and mouthfeel of plant-based meats. Methylcellulose is the most common binder used in plant-based meat, other than this, carrageenan, locust bean gum, calcium alginate products can also be used. New studies and work in our innovation center have shown excellent results in the final products with the use of citrus fibers or fiber-rich fraction of cereals.

Egg whites or albumen can also be used to provide the desired function to emulsify and bind ingredients however, this would not allow for plant-based or vegan claims and consumers of plant-based products are demanding foods are preferring foods which are completely free of animal products, hence the use of egg ingredients are declining in popularity.

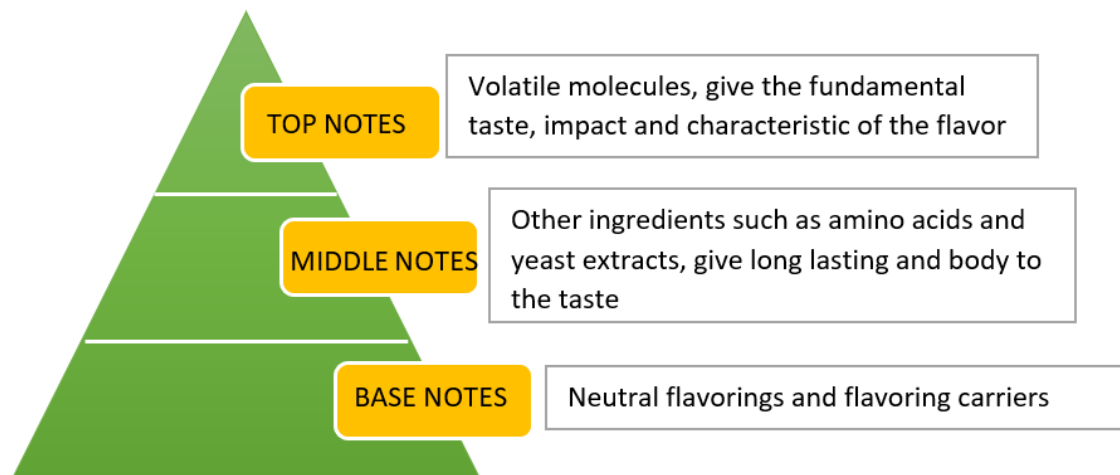


## The Flavors

Traditional meats when cooked undergo Maillard reactions where the distinct meaty and savory taste is developed. Understanding the taste profile will help food developers to simulate the flavor of the traditional meat into a plant-based analogue.

Creating a balance between the base, middle and top notes is very important to achieve a product closer in profile to a meat-based product. Each segment of the taste pyramid plays a vital role in simulating the overall profile of the plant-based meats. However, with the growth spurt of plant-based meat brands and manufacturers who wish to have their own unique core taste will enable brands to differentiate their products from the competition.

### Flavor Pyramid



**FSL – Aromatech** have meticulously created a range of top notes that are specifically designed for plant-based meat products. Top notes are responsible in providing the aroma and core taste that blends with the flavor of the rest of the ingredients and create an exemplary taste profile.

Each of our top notes is created to enhance specific characteristic taste that every manufacturer would desire; from the type of meat such as chicken, beef or lamb to very specific notes such as boiled, grilled or roasted. With a specialized Flavorist available in the technical center in UAE, customization for the top notes to achieve specific profiles targeted to certain markets is available to our valued customers.

Top Note	Aspects	Profile
Chicken Base 8.7835	Liquid	Boiled
Chicken Base 8.7839	Powder	Boiled
Chicken Base 8.7718	Liquid	Roasted
Chicken Base 8.7719	Powder	Roasted
Beef Base 8.7804	Liquid	Boiled
Beef Base 8.7807	Powder	Boiled
Beef Base 8.7791	Liquid	Roasted
Beef Base 8.7792	Powder	Roasted
Lamb Base 8.7946	Liquid	Boiled
Lamb Base 8.7947	Powder	Boiled
Grill Base 8.7889	Liquid	Typical of grill and smoky note
Grill Base 8.8308	Powder	Typical of grill and smoky note



## PLANT-BASED MEATS: A HEALTHY & SUSTAINABLE TASTE OF THE FUTURE



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### A HEALTHY & SUSTAINABLE TASTE OF THE FUTURE

**Plant-Based Meats:**

- ✓ No Cholesterol
- ✓ Less Saturated Fat
- ✓ Contains Fiber
- ✓ Rich in Plant-Based Protein
- ✓ No Allergens / GMO Ingredients
- ✓ All Plant-Based / Vegan
- ✓ Sustainable
- ✓ Ethical

**Plant-Based (Vegan) Beef & Mutton Alternatives:**

- Beef Burger
- Hot Dog
- Bacon
- Meatballs
- Pepperoni
- Chorizo
- Marinated Pizza Toppings (Tikka / Tawook / Fajita)

**Plant-Based (Vegan) Chicken Alternatives:**

- Chicken Burger
- Chicken Zinger
- Breaded Chicken Burger
- Breaded Chicken Fillet

**Plant-Based (Vegan) Seafood Alternatives:**

- Fish Fingers
- Fish Balls
- Salmon Burgers
- Breaded Fish Burger
- Breaded Fish Tempura
- Breaded Shrimp Tempura
- Calamari

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## PLANT-BASED SHISH KEBAB: EXPERIENCE THE FUTURE OF ARABIA



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### EXPERIENCE THE FUTURE OF ARABIA

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For flavor creation requests, recipe formulation,  
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