

PLANT PROTEIN ICE-CREAMS AND THEIR DRIVERS

PLANT PROTEIN ICE-CREAMS ARE THE LATEST GO-TO DESSERT ALTERNATIVES THAT HAVE SEEN A STEADY AND CONSISTENT GROWTH IN POPULARITY AROUND THE GLOBE. CONTRIBUTED BY **ANUSHIA SHANMUGARAJ**, CORPORATE MARKETING MANAGER, FUTURA INGREDIENTS.

GREATER EMPHASIS ON PROTEINS IN A HEALTHY DIET

Plant protein alternatives have been forecasted to increase in demand as the conscious consumer perceives plant-based diets as a responsible lifestyle not only to themselves but to their community at large. Protein has become synonymous with anatomical growth; it is considered a necessary daily dietary intake to ensure proper formation of cells, tissues and organ regrowth. On nutrition labels, the daily value (%DV) for protein is usually not stated unless the product has been fortified.

The PDCAAS method is used to measure the nutritional quality of protein. Proteins are made of many amino acids. PDCAAS evaluates a food's protein quality by comparing its amino acid composition to the dietary needs of the human body. The highest PDCAAS value that any protein can achieve is 1.0. Generally eggs, cow's milk, beef and soy are considered good quality proteins sources and have PDCAAS scores of 1.00, while those from plant sources score slightly lower. Furthermore, wheat protein sources score even lower.



The table below compares the PDCAAS scores of some common protein sources such as Pea Protein, Brown Rice Protein and Pumpkin Protein.

PROTEIN	PDCAAS
Egg	1.00
Cow's Milk	1.00
Beef	0.92
Soy	0.91
Pea Protein	0.80 - 0.90
Pumpkin Seed Protein	0.50 - 0.60
Brown Rice Protein	0.40 - 0.50
Wheat	0.42

VEGANISM & ENVIRONMENTAL CONCERNS

Consumers today are conscious about their eating choices and how it effects the environment globally. Due to these concerns, many consumers in the past decade have made drastic lifestyle changes to adapt to global concerns such as animal welfare, trying to limit Green House Gas emissions and to improve their overall health and wellbeing.

A large population of consumers today have chosen veganism as a lifestyle to eliminate all animal products and by-products in their daily food intake. Being vegan now seems to be more appealing to a larger segment of consumers due to the wider availability of plant protein-based food alternatives there are in the market. This ensures that unhealthy, sugar-high and processed foods do not creep their way back into their daily menu.

The introduction of Vegan Ice-cream or "THE Nice-cream" has drawn fast attention amongst the vegan community and has gradually evolved through the years—from the humble fruit sorbet to more creative and interesting flavours. Vegan ice-creams were once only popular amongst the vegans and lactose intolerant consumers, but today we see flexitarians (who are meat eating folk) swaying towards choosing desserts that are plant-based to avoid dairy, as well as choosing healthier eating choices to fit their lifestyle.

We also see vegan consumers wanting frozen desserts that are dairy-free but with the creamy mouthfeel and texture of regular ice-cream. Not too long ago, consumers were only given artisanal ice-cream parlours as an option to fulfil their dairy-free



sweet tooth craving as plant protein-based ice-creams were a niche product and very highly priced. Today, there are many brands that cater to high protein, low calorie and dairy-free ice-cream options at a more affordable price and wider availability.

This continuous shift in healthy eating has propelled the plant protein ice-cream market growth particularly in the US, Oceanic and European countries not only due to the rising awareness of lactose intolerance and other milk-related allergies that affect the health of many consumers, but largely due to the influence of millennials on social media around the world.

RISING POPULARITY OF VEGAN ICE-CREAM AMONG MILLENNIALS

The rapidly growing vegan and flexitarian population is positively influencing the growth of the global plant protein-based ice-cream market. Over the last decade, the number of people adopting veganism and opting for vegan diets has increased by about 300 percent.

The more interesting fact is that this demographic largely consists of millennials who are constantly looking for clean label ingredients that are from sustainable sources, which is their lifestyle choice. We

THE SCOOPABILITY IN PLANT-BASED OR VEGAN ICE-CREAMS ARE IMPACTED BECAUSE OF THE MISSING MILK DAIRY SOURCES, THE LACTOSE AND THE MINERAL SALTS THAT ARE PRESENT IN REGULAR DAIRY ICE-CREAMS. THIS AFFECTS THE FREEZE POINT DEPRESSION FACTOR WHICH REFLECTS THE LEVEL OF SCOOPABILITY.

also see a growing trend in other parts of the world such as Australia, Europe and in China, where the millennials have been influencing the plant protein-based ice-cream market as their purchasing power increases and displayed through social media. Millennials are sensitive to global concerns and are willing to make purchases of premium products like plant protein-based ice-creams but without being deprived of an enjoyable eating experience. Millennials account for more than 30 percent of the total Chinese population, which is expected to influence the growth of vegan ice-creams in the Asian market (Technovio, 2018).

The Ekölite VITA Plant Protein Series from FUTURA INGREDIENTS is range of carefully selected plant-based proteins with good amino acid profile and

suitable for consumers with dietary requirement—for example, vegetarian, vegan and flexitarians. The Ekölite VITA Plant Protein series is also non-allergenic, non-GMO, non-dairy, gluten-free, free from egg, and free-from soy. This meets the needs of millennials who choose vegan cruelty-free lifestyle.

GLOBAL OVERVIEW OF PLANT PROTEIN ICE-CREAM

According to Technovio, the global dairy-free ice-cream market size was valued at USD 455.9 million in 2018 and is anticipated to expand at a CAGR of 14.8 percent over the forecast period by 2025. The increasing awareness about health and socialisation suggests a relatively strong market growth in the forecasted period (Technovio, 2018).



Commercialising the health benefits of consuming plant proteins seem to be the leading factor in the currently propelled demand in many countries. This has led to more technology improvements and product innovation in flavour enhancement by big ice-cream brands that have been well received in the market.

GETTING THE FORMULATION RIGHT

Many of us associate eating ice-cream to an experience, a feeling or to comfort. Be it a dessert, a quick bite on the go, or satisfying a craving, consumers want to feel good about what they are eating but does healthy eating mean having to sacrifice on flavour and texture?

In creating the perfect plant protein ice-cream, parameters such as the mouthfeel and texture of the

ice-cream is paramount in order to mimic the regular dairy ice-cream eating experience. The molecular structures of plant proteins are very different from those of dairy proteins and a number of technical challenges may occur when formulating plant protein ice-creams such as:

- Ice-cream mix viscosity
- Texture and consistency
- Flavour and mouthfeel

ICE-CREAM VISCOSITY

- The protein structures in dairy milk and non-dairy sources vary in interaction—therefore, the level of viscosity tends to be higher in non-dairy or vegan formulation due to the absence of non-fat milk solids.

TEXTURE AND CONSISTENCY

- The scoopability in plant-based or vegan ice-creams are impacted because of the missing milk dairy sources, the lactose and the mineral salts that are present in regular dairy ice-creams. This affects the freeze point depression factor which reflects the level of scoopability.

FLAVOUR AND MOUTHFEEL

- The flavour and mouthfeel of plant-based or vegan ice-creams are noticeable as the milk proteins have been replaced. However, with the addition of Ekölite VITA PeaCe80—a proprietary blend of pea protein and rice protein from Futura Ingredients—gives a pleasant and surprising element in sensorial evaluation against the organoleptic properties in a plant protein-based ice-cream application.

Futura Ingredients tackles these concerns with the combination of Ekölite VITA Plant Protein Series, which uses plant protein sources from pea, brown rice, pumpkin seeds and the Ekömul KREM Series of Texturising Systems as the solution to perfecting the formulation in plant protein ice-creams. As the evolution of plant protein-based ice-creams continues to increase in demand and options, Futura Ingredients offers formulation solutions and technical advice in creating the perfect scoop of ice-cream. **APFI**

