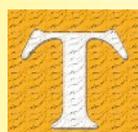


# Keep on eating pizza, sandwiches, candy and pastry: vegan alternatives for snacking



The growing trend of veganism challenges the product developers to replace animal-based ingredients. There is a rising group of consumers considering adopting vegan products, but still wants to eat classical snacks, such as pizza, pastry and candy. Innovative ingredients based on potatoes can be used to formulate allergen-free and GMO-free products, so these new consumer groups do not have to give up their favourite snack items.

## Looking at plant-based alternatives

An increasing number of people look at plant-based alternatives in their diet. There are many reasons why people chose a vegan lifestyle. A growing number of consumers restrict their intake of animal-based products for health reasons. Environmentalists want to stop the excessive use of our planet's resources. And finally, people are concerned about animal welfare.

Other reasons to focus on plant-based diets are triggered by the focus on super foods, such as berries and ancient grains. Consumers increasingly look into so-called "free from" foods that do not contain any allergens or genetically modified ingredients. Eating plant-based dishes is getting more trendy and popular in the media, where also celebrities declare themselves vegetarians or vegans.

## An increasing trend in Europe and the USA

A few years ago, it was complicated to live a vegan or vegetarian lifestyle. Today, however, there are more dining options, more new and alternative categories in the supermarkets and the amount of plant-based culinary influences from other countries is increasing.

A quick search on the internet returns many sites and forums where people discuss lifestyle changes involving plant-based food products. Simultaneously, they also focus on other claims such as gluten-free, lactose-free, soy-free and

GMO-free. An increasing number of products is labelled as vegan according to the Mintel GNPD database, and the number of vegan product launches has increased from 1.2% to 4.5% in Europe within the last five years. The vegan movement is especially strong in some European countries and e.g. 10% of all new products in Germany and 8.3% in the UK are claimed to be vegan.

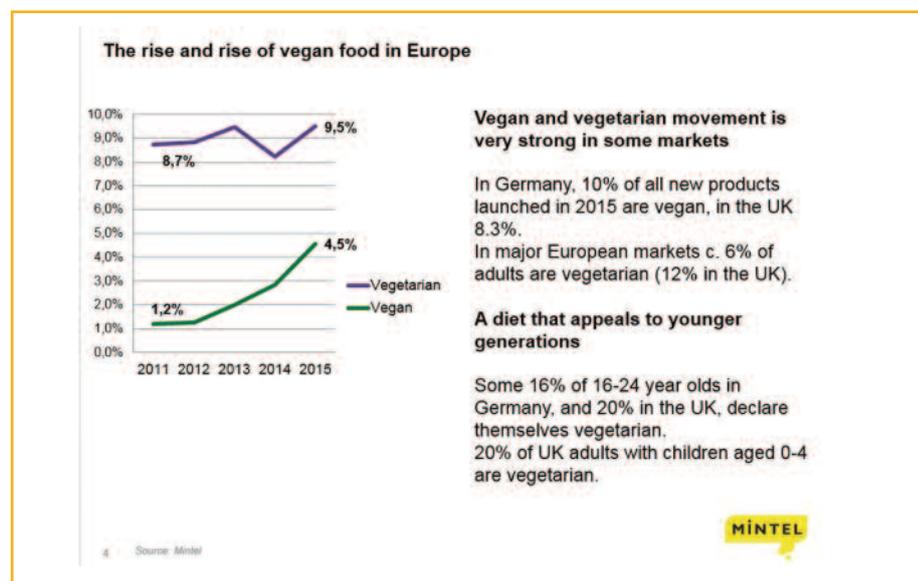
The flexitarian lifestyle in which consumers reduce their intake of meat – especially red meat – is also growing. According to Innova Market Insights, 38% of the consumers in the USA eat a meatless meal once a week and this number is even higher in Europe, where 53% of the people in the UK and 69% in Germany choose to eat a vegetarian meal every week.

There is a growing group of consumers who wants to go vegan, become "part-time vegans" or

simply wants to reduce animal-based food items on certain occasions. The important message to the food industry is that today's vegan products are not necessarily only limited to vegan consumers.

## Vegan snacking

Consumers that are inspired by the vegan lifestyle or look for plant-based, non-allergenic and non-GMO products do not want to give up on well-known snack items such as pizza, candy, cakes or sandwiches. Therefore, product developers need to replace animal-based products in this type of food applications. In the following paragraphs, different examples illustrate how potato-based ingredients can help the product developer replace milk proteins, gelatine or eggs. Potatoes are GMO-free and non-allergenic, which are both highly valued by many vegan consumers as well.



The rise of vegan claims in Europe.

Source: Mintel, "From purist vegans to mass market flexitarians"

### Dairy-free block cheese

Cheese is an essential ingredient shredded on pizza, sliced in sandwiches or diced in a salad. To develop a dairy-free cheese, it is important to obtain a cheese-like texture and a good sliceability and shreddability. Furthermore, different melting profiles are required as well. An imitation cheese on a pizza needs to be easy melting and have a good flowability to cover the pizza toppings. Slices on sandwiches only need a restricted melt and must have an excellent elasticity and foldability. Dices need a firm, brittle and almost flaky texture.

Dairy proteins are important for texture building and emulsification.

CheeseMaker potato-based solutions can both build a cheese-like texture and emulsify fat. To obtain a wide range of textural and melting properties, there are three different CheeseMaker starches available for the product developer. The CheeseMaker CF55 will result in a restricted melt, whereas the CheeseMaker CF75 will give an easy melting product. Combine them to get any customized melting behaviour. CheeseMaker CF77 is also applied in products that are easy melting, but the texture will be much firmer. It has a superb shreddability and therefore targets the food service segment. It will behave excellently in industrial shredders, but has a texture that is less cheese-like compared to the products made with CheeseMaker CF55 and CF75.

As the CheeseMaker CF starches both emulsify and texturize, it is easy to make a lean label with only few ingredients. A vegan imitation cheese can easily be formulated with modified potato starch, fat and water and only minor ingredients such as flavour, colour and salt have to be added. Potato starch is very white in colour and neutral in taste, so it is easy to make different customised cheese products.

### Egg-free mayonnaise-type products or dressings

Just like dairy proteins, different components in eggs, i.e. cholesterol and lecithin, also have emulsifying capacities. To make an egg-free imitation mayonnaise or dressing, the EmulsiForm CM 1120 is recommended. EmulsiForm CM 1120 is an excellent emulsifier with high stability.

Replacing eggs has a number of advantages. Not only is it possible to make vegan products, but also cholesterol-free mayonnaise-type products or dressings that will be perceived as healthier by the consumers. Eggs are also a well-known allergen and removing them from the products will make it allergen-free.



Modified potato starch can be stored at ambient temperature and has a long shelf life, especially compared to fresh eggs or egg yolks. The dosage is much lower than for eggs, which makes it a very cost-effective solution as well. EmulsiForm CM 1120 is pH and shear stable, so it is easy to apply in the production.

### Gelatine replacement in gummy candy

Gummy candy often contains gelatine derived from pork and cannot be consumed by people that do not want to eat pork-derived ingredients



for religious reasons or consumers that prefer vegan products. The use of potato starch in gummy candy for partial replacement of gelatine has been well-known for a long time. If, however, these starches are used in formulas to obtain a full replacement of all gelatine, the gummy candy gets too soft, has a sticky texture and too short structure. Last year KMC launched the innovative Gelamyl 801 product. This enables the product developer to obtain a complete replacement of gelatine and still get a gummy candy that is as close as possible to the texture as one with gelatine. It also has a significantly lower stickiness

and improved elasticity compared to candies made with the conventional starches used in the confectionery industry.

It is easy to implement the Gelamyl 801 in the production as it has a low viscosity during processing. As for all gummy candy made with starch, it is important to have the proper drying conditions after moulding the candies. The clarity of the gummies is excellent and the neutral flavour of the potato-based starch makes it easy to obtain the desired flavour profiles.

### Replacing egg- or milk wash on bakery products

Traditionally, bakery products are brushed or sprayed with egg-based or dairy-based solutions to obtain a good shine. Also sesame seeds, poppy seeds, oatmeal flakes or other kind of toppings are often adhered with egg- or milk wash. The product developer can substitute the traditional animal-based glazing agents with GlazeMaker 25 – a modified potato starch – to get the same or even better shine and adhesion. The product can be applied after proofing and either before baking or after baking. It is easy to dissolve GlazeMaker 25 in water and it is stable for many hours. As the product has a long shelf life, it is also less dependent on price fluctuations on eggs and dairy proteins and it has a stable supply. Last but not least, it is a cost-effective solution as well. The GlazeMaker 25 product can be used on all kinds of bakery items, from bread rolls, gluten-free products and pastry to crackers, cookies and cereals.

### Modified potato starch in vegan snack products

The paragraphs above illustrate that a number of classical snack items can be made vegan by replacing animal-based ingredients with different modified potato starches. It is possible to remove milk proteins from cheese, eggs from mayonnaise products, gelatine from gummy candy and egg- or milk proteins from bakery glazes. Modified potato starches are GMO-free and non-allergenic, which is favoured by many vegan or health-oriented consumers. Many of the snack items discussed above can be made with only few ingredients, which results in simple ingredient decks with few necessary raw materials. The starch powders are easy to implement in the production and the neutral flavour and colour make it simple to create customised solutions with exciting colours and flavours. Replacing animal-based ingredients with modified potato starches is also a very cost-effective solution that will make these snacking products available for many consumers in the future.



Find more information and contact details on [www.kmc.dk](http://www.kmc.dk)

