# Precision fermentation

Information about precision fermentation and how the FSA regulates precision fermentation products.

## What is precision fermentation???

Precision fermentation is a?modern?form of the traditional fermentation process. Fermentation? has been used for centuries to produce things we already know about, like beer or yoghurt.??

Precision fermentation is different because scientists program microbes (tiny living organisms like ?yeast or bacteria) to make new, specific food ingredients. These include proteins, sugars?and fats. These foods are created without using animals or?plants.?

Precision fermentation works by instructing the microbes?to make a particular molecule –?like whey protein (found in milk and protein shakes) or egg white protein. The microbes are grown in fermentation tanks and fed sugars, which start producing the target ingredient.?

Think of it like brewing beer, but instead of alcohol, you're?brewing?the likes of?milk proteins, collagen or even sweeteners.?

## Examples?of precision fermentation products??

Precision fermentation products could include:

- cocoa (chocolate) without using cocoa beans
- cow free milk proteins
- palm oil without the?palm tree?
- creating vitamins such as B2??
- egg proteins without the chicken
- gelatin (used to make jelly sweets) without the animal

For example, precision fermentation in cocoa creates the same?flavour?molecules found in cocoa, without needing the whole bean. It's growing cocoa?flavour, not cocoa beans. This process can create consistent, high-quality cocoa components while reducing the?impact on?the environment.?

## ?The FSA/FSS's role in regulating these products??

The FSA/FSS is here to make sure any new food product is safe before it goes on sale. We introduce regulations which food businesses must follow before such products are allowed to be put on the shelf and sold.??

Precision fermented products, like any other new food, will go through a rigorous safety process based on a wealth of scientific evidence and using expert advisors.??

It’s?crucial that?you?can trust the food?you buy and feel able to?make an informed choice about whether to buy and eat a new food.??

Some precision fermented products are already authorised and currently being used by consumers. For example,?fats used in oil-based supplements such as omega-3.??

However, this technology is increasingly being used in new?and complex ways, and?that’s why these new food products are the focus of a new research programme to allow us to make a decision?on their safety.

The research and evidence?we will?gather?is?how we will learn everything we need to know about these?products. We will look at the risks and hazards and how to manage them and what tests companies need to do to make sure they’re safe.?This will help us create clear guidance for companies wishing to sell these new foods in Great Britain, including how these products should be labelled.???

## ?What’s?next??

It will be up to you to decide whether you want to try new and innovative products such as the ones discussed here.

While food such as this may seem?advanced,?the FSA/FSS will put them through their paces via a rigorous, in-depth assessment of their safety. This safety assessment ensures that precision fermented products are held to the same safety standards as all other foods that are placed on the market, or sold in supermarkets –? maintaining?the very highest of standards of food safety that?consumers expect.??