

Cosun's Tendra®
Tasty, textured yoghurt as part of
a plant-based lifestyle



Meeting consumer sensory expectations

According to a recent report¹, the global plant-based yoghurt market was worth around USD 2.49 billion in 2022 and is predicted to grow to around USD 9.27 billion by 2030. Despite this enormous market potential, manufacturers are struggling to find protein alternatives that deliver the same textural and sensory characteristics - and above all taste - as regular dairy-based yoghurt.

This is partly because the molecular structure of plant proteins is very different to that of milk protein. Yoghurt is traditionally made by adding lactic acid bacteria to milk under carefully controlled conditions. As the bacteria grow, lactose is consumed and converted into lactic acid.

In plant-based yoghurt this milk is replaced with an alternative protein solution. Many plant proteins however have poor solubility in water, which can lead to textural defects such as graininess and a lack of smoothness.

Tapping market potential with Cosun's Tendra®

To address these challenges, Cosun introduced a new product onto the market in 2022, called Tendra®. This highly soluble and taste-neutral plant-based protein can be used in a range of plant-based applications, such as yoghurt, and can help formulators to overcome the technical challenges typically associated with plant-based proteins.

Tendra® is a protein isolate sourced from GMO-free fava beans (*Vicia faba*) cultivated in Europe. The crops are grown in a climate-friendly way with limited water use. Fava beans are also one of

“Plant-based proteins are also associated by many consumers with unpleasant, bitter flavors,” explains Margriet van Gurp, application manager at Cosun.

“Formulators often have to add ingredients to mask these off-notes. This can be expensive and undesirable, especially if their product is targeted at consumers looking for healthy and clean-label plant-based products.”



the world's most powerful nitrogen fixers. Once they have flowered and produced beans, the fava bean plant releases nitrogen into the soil, naturally enriching the soil and providing food and energy for the next crop².

The protein isolate is extracted via a proprietary processing method, delivering the taste and sensory qualities that consumers expect. This is because Cosun's extraction technology preserves the native functionality of the protein delivering a powder with a protein content above 85%.

¹ <https://www.fnfresearch.com/plant-based-yogurt-market>

² <https://www.tandfonline.com/doi/full/10.1080/09064710.2015.1042028>

Consumers want plant-based alternatives – but taste is king

Consumers have demonstrated that they are open to plant-based alternatives across a range of product categories, including dairy. The reasons for this are numerous, but often center around health concerns related to animal derived products.

Increasing cases of lactose intolerance and celiac disease for example has forced many consumers to cut down their dairy intake. Ethical considerations such as animal welfare have also come into play as well as concerns about the negative impact of animal-based products on the environment.

Plant-based yoghurt is well placed to address these concerns. Yoghurt is already associated with high nutritional and health-promoting values,³ and appeals to consumers interested in products that promote general health and wellness, digestive/gut health in particular.

“Yoghurt is something that many people eat in the morning, with fruit or breakfast cereal,” notes van Gorp. “But while more and more consumers are looking for healthy alternatives to dairy products – for most people taste and texture cannot be compromised.”

Indeed, while an interest in the healthy properties of yoghurt, together with a growing general interest in plant-based products has helped to boost the sector, manufacturers still need to deliver on taste. According to recent research⁴, nearly half of the consumers (48 %) consider taste a top reason for eating yoghurt. This is followed by health benefits (38 %) and nutritional value (37 %).

“For most people taste and texture cannot be compromised”

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Margriet van Gorp



³ <https://www.sciencedirect.com/science/article/pii/S0022030220310109>

⁴ <https://foodinsight.org/consumer-research-dairy/>

Helping manufacturers overcome formulation challenges

Conventional plant proteins have their own characteristic flavors, sometimes described as 'beany' or 'grassy', which are associated with the plant source. Tendra® helps formulators to meet the top consumer demand of taste by delivering a neutral taste, mildly acidic and a bit tangy.

In addition, Cosun's Tendra® protein also helps manufacturers to overcome many of the drawbacks typically associated with plant-based proteins. For example, many plant proteins have poor solubility, and their coagulation properties differ from those of milk proteins.

This often results in yoghurt products with disappointing quality, such as poor consistency, a chalky mouthfeel due to large plant-protein particles, and a tendency to release moisture. In order to obtain a yoghurt-like consistency, many commercial plant-based products therefore contain gums or starches.

In contrast, Cosun's Tendra® delivers high solubility and excellent emulsification properties. This enables formulators to build texture, without the need to add extra starches, gums or thickeners. "Using Tendra® means that you are not reliant on additives to get that yoghurt mouthfeel," says van Gurp. "This is because Tendra® acts the same as milk proteins."

The future looks bright with Cosun's Tendra®

Tendra has been successfully incorporated across a range of yoghurt applications, from set yoghurts to liquid and drinkable products. All these plant-based yoghurts deliver neutral flavor profiles, smooth and creamy textures and glossy appearances.

"Manufacturers can easily incorporate Tendra® into their formulations," says van Gurp. "Instead of using regular milk, they simply need to make a dispersion of the fava bean protein in water and let it hydrate."

Another important point is that yoghurt products are typically marketed as good sources of protein. While ice cream for example might contain 1% protein, a yoghurt will typically be advertised as having between 4 and 6 % protein. With Tendra® such high protein levels

can be achieved making a high protein claim possible without having to include additives, or compromise on taste and texture.

Several new plant-based yoghurt product launches featuring Tendra® are about to come onto the market. "We are excited that this will be the year of our fava bean protein," says van Gurp.



Key takeaways

- While the global plant-based yoghurt market is predicted to grow, manufacturers still struggle to find protein based alternatives that deliver the same taste and texture as dairy-based yoghurt.
- Adding ingredients to mask deficiencies in the areas of taste and texture is not acceptable in a category where consumers want healthy, natural products.
- Cosun's Tendra® protein can help formulators to overcome the technical challenges typically associated with plant-based products, and deliver on taste and texture.
- High solubility and excellent emulsification properties enable formulators to build texture without the need to add starches, gums or thickeners.
- Tendra® can be used in all yoghurt applications, from set yoghurts to drinkable products.
- Using Tendra® means that a high protein claim can be made, without having the need to add additives or compromise on taste and texture.

The Cosun Protein team will support you with information



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