Enzymes Help Produce Healthier Oils Without any Trans-Fats

Demand is rising for healthier, heart-friendly vegetable oils free of trans fats because these are linked with heart disease. The Danish company Novozymes has developed a safe, environmentally-friendly solution that lets food manufacturers meet the demand.

More than half a million people die globally every year due to heart diseases. A central cause to the deaths from heart disease is related to consumers' high intake of trans fats found in e.g. processed foods. Trans fats are for example found in products such as margarine, cakes, icing, fried foods, salad dressings, commercially-prepared popcorn and much more. In many countries, consumers eat high levels of trans fats without being aware of the risk of heart disease.

Avoiding trans-fats with enzymes and creating high-quality products

Trans fats are formed when manufacturers use a process called partial hydrogenation where the chemical structure of oil is changed from a liquid form into a more solid shape to give e.g. margarines the correct melting properties, consistency or shelf-stability. Novozymes' has been ahead of this trend, and its biological solutions can help to achieve all the same qualities and avoid trans fats by using a different process. Also, use of enzymes in this process offer the industry ways to produce in more sustainable ways.

> THE ENZYMATIC PROCESS ELIMINATES THE NEED FOR CHEMICALS, WASHING OR POST-BLEACHING AND PRODUCES NO WASTEWATER

Interesterification is a process which also modifies the melting point to create an oil that is more suitable for deep frying and at the same time has low saturated fat content. In contrast to partial hydrogenation, the interesterification can be done with chemicals or enzymes that do not produce trans fatty acids and has many advantages.

Healthier, higher yields and better for the environment

Using enzymes in oil production provides manufacturers with a simple, efficient and environmentally-friendly way to produce margarines without trans fats.

Novozymes has developed a lipase (an enzyme), Lipozyme® TL IM, that produces higher-quality oils with no colour changes, low diglycerides, and fewer by-products. The enzymatic process eliminates the need for chemicals, washing or post-bleaching and produces no wastewater.

Authorities looking at trans fats

The WHO has provided guidelines for production of healthier fats with enzymes, and many countries have followed their recommendation. United States banned trans fats last year, and Brazil and India are expected to come with similar in a few years.

The European Commission has at the end of 2018 agreed on regulations of the amount of trans fat in food on the European market. This agreement has partly risen from Denmark's long struggle to tighten the regulations on the content of trans fat in European food. As of April 1, 2021, no more than two grams of industrially produced trans fatty acids may be used per 100 grams of fat in food on the European market.