



- 1 SPS extraction plant.
- 2 Fat reduced, high protein, chocolate truffle filling.

FAT SUBSTITUTION USING PLANT PROTEINS

Fraunhofer Institute for Process Engineering and Packaging IVV

Giggenhauser Strasse 35
85354 Freising

Contact

Dr. Stephanie Mittermaier
Phone +49 8161 491-412
stephanie.mittermaier@ivv.fraunhofer.de

www.ivv.fraunhofer.de

Research need

The average consumption of fat in Germany is almost 50% more than the recommended amount. There is therefore an urgent need to reduce the quantity of fat in foods. In general, however, this adversely affects the taste and mouth-feel of foods.

Health benefits

A reduction in fat consumption, and in particular the consumption of saturated fats, would make a considerable contribution to preventing overweight. This would lead to improved blood fat levels and so also reduce the risk of arteriosclerosis and heart attack.

New technology

A special manufacturing process allows protein suspensions to be recovered as fat-like masses. This is achieved by forming micro-fine, spherical protein-aggregate having a diameter of just a few microns. These aggregates are not water-soluble and have a hydrophobic surface similar to fats. In water they act like oil droplets do in mayonnaise and slide easily past one another in the food matrix. This produces a soft consistency and fat-like mouth-feel. Using this novel product, the fat content of foods can be reduced by up to 90% depending on the application.



Applications

Due to the new manufacturing process the product has virtually no own taste and can hence be used in a wide range of foods. Example applications include mayonnaise and dressings, chocolate spreads and cheese spreads for bread, fillings for pralines, meat pastes, and creamy desserts.

New method for fat substitution in foods

- Micro-fine protein spheres generate creamy consistency
- Fat-like mouth-feel
- Up to 90% less fat consumption, depending on the application
- Wide range of applications
- Neutral taste

1 / 2 Fat substitution using plant proteins: Fat-reduced mayonnaise and chocolate mousse.