

Emulsion gels based on combination of oleogels and hydrogels as healthy margarine replacers in laminated pastry products

Initiative: zukunft.niedersachsen (nur ausgewählte Ausschreibungen)

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Laufzeit:

Replacement of saturated fatty acids by mono- and poly-unsaturated fatty acids as well as reduction of total fat intake is highly recommended by nutritionists. This project focuses on laminated pastries, like croissants or Puff pastry, where layers of fat are required to generate the desired fluffy and layered structure after baking. The scope of the proposed project is to replace the traditionally used shortenings from saturated fats by specially stabilized unsaturated oils, called oleogels (oil-based gels). These oleogels will be used in an emulsion system consisting of an additional inner water phase stabilized as hydrogel (water-based gel) thus forming a system called bigel. Such system offers a way to decrease both the amount of saturated fat and to reduce the total fat content in the food product. Within the project, suitable bigels will be developed and tested in such laminated pastries. Special focus will be directed to the technological functionality of the bigels during the laminating and sheeting process. To enable a fast transfer of the bigels into the industrial production and to provide the consumers with healthy croissants, preparation will be carried out not only in laboratory scale but also in pilot-scale including the scale-up into industry processes. The proposed approach can lead to significant impact on global consumer health by improving nutritional quality of pastry-based products with a high demand all over the world.

Projektbeteiligte

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