

USE OF PROTEIN FUNCTIONAL INGREDIENT FROM SUNFLOWER SEEDS IN THE RECIPE OF EMULSION SAUCES

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One of the promising directions for improving emulsion sauce formulations is the use of protein functional ingredients that can improve emulsion stability, texture and nutritional value of the product. Due to their amphiphilic properties, proteins actively participate in the formation of a stable emulsion system, reducing interfacial tension and preventing phase separation.

Of particular interest are plant proteins, including soy, pea, and lentil proteins, as well as less common sources that are affordable, environmentally friendly, and beneficial to health.

This study proposes the use of high-protein meal obtained from sunflower seeds after separation of the husk and extraction of oil. Such an ingredient is a valuable source of protein and dietary fiber and can be effectively used to enrich emulsion sauces and replace egg powder, in particular in the production of functional and vegetarian food products.

The stability of model emulsions was assessed within the concentration of egg powder and high-protein meal up to 8.0 %. This allowed us to substantiate the value of the concentration of high-protein meal as an emulsifier in the emulsion sauce recipe. The maximum stability is achieved by emulsions containing 6.0 % emulsifier. Further increase in the concentration of high-protein meal does not have a significant effect on emulsion stability.

Based on the results of the work, a recipe for a medium-calorie emulsion sauce of the mayonnaise type and technological modes of its production were developed. The use of high-protein meal does not require significant changes in the equipment and technological scheme for the production of emulsion sauce. The main difference may be the preliminary preparation of the meal, which involves its swelling.

The organoleptic and physicochemical parameters of the emulsion sauce sample, manufactured according to the developed recipe and technology, were determined in accordance with DSTU 4560: 2006 and DSTU 4487: 2015. In terms of quality parameters, the medium-calorie emulsion sauce with 100% replacement of egg powder with high-protein meal in the recipe meets the requirements of current regulatory documentation and is distinguished by better indicators, such as emulsion stability and effective viscosity. This indicates that the proposed protein functional ingredient performs the role of not only an emulsifier, but also a structure-forming agent.

The use of protein functional ingredients in emulsion sauce technology opens up wide possibilities for creating products with improved nutritional value, stability and organoleptic properties. Further research in this direction will contribute to the development of new and innovative food products.