

Brief information about the project

Name of the project	AP14871087 «Develop and-implement technologies-to improve-quality-of-oil-fat products-to-reduce-cardiovascular-and-oncological-disease-risks-in country»
Relevance	<p>High levels of trans-isomers in hydrogenated margarines and the presence of palm oil in margarines obtained through interesterification equally pose significant health risks to the population of the country. High levels of trans-isomers increase the risk of cardiovascular diseases, while palm oil contributes to the rapid spread of cancer cells in the body. As for liquid vegetable oils, they are characterized by an unbalanced composition, with a high content of omega-6 fatty acids and practically no omega-3 fatty acids. This state of affairs in the production and consumption of fat and oil products is an objective cause of the constant increase in the aforementioned diseases in the country. This is further exacerbated by the lack of quality control of fat and oil products by both governmental and non-governmental organizations.</p> <p>We propose the development and implementation of a complex of technologies and measures aimed at improving the quality of fat and oil products in Kazakhstan to reduce the risk of the aforementioned diseases in the country.</p> <p>To address the issues with trans-isomers and palm oil, we have developed a low-percentage (0.2% Pt) platinum catalyst on various carriers. The catalysts have been successfully tested in the hydrogenation process of various vegetable oils in laboratory and pilot plants. Fat and oil products obtained using our catalyst comply with international standards, containing no more than 5-7% trans-isomers, and the saturated fatty acid content does not exceed 30%. Additionally, there is no need to add palm oil to regulate the hardness of the fat. The process is carried out at low temperatures (100-130°C), and the catalyst can be reused (2-3 times), making it comparable in price to a nickel catalyst.</p>
Purpose	The project aims to develop and implement a complex of technologies and measures to improve the quality of fat and oil products in Kazakhstan, with the objective of reducing the risk of cardiovascular diseases, cancer, preventing diseases, and prolonging the population's lifespan. This involves conducting regular quality analysis of fat and oil products.
Objectives	<p>The main tasks of the Project include:</p> <p>Conducting pilot-scale industrial trials of our platinum catalyst in the hydrogenation process of sunflower oil at the "Maslo-Del" company.</p> <p>Development and approval of Technical Specifications (TU) for the platinum catalyst.</p> <p>Development of a techno-economic justification (TEO) for establishing pilot production of the platinum catalyst.</p> <p>Development of technology for producing blended vegetable oils with a balanced fatty acid composition.</p>

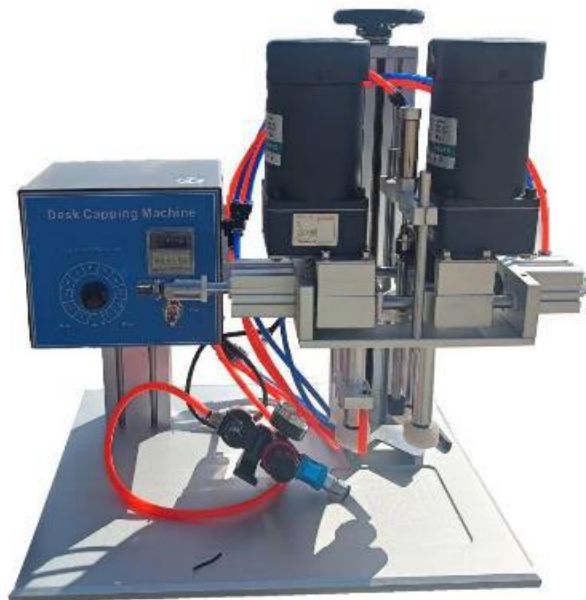
	<p>Development and approval of Technical Specifications (TU) for blended oils.</p> <p>Production of a pilot batch of blended vegetable oils.</p> <p>Quality control of fat and oil products and food products derived from their use in the retail network of the Republic of Kazakhstan.</p> <p>Implementation of the technology of blending vegetable oils into production.</p> <p>Identification and prevention of the penetration of fat and oil products hazardous to the life and health of consumers into the consumer market of the country.</p> <p>Protection of consumer rights regarding informing them about the quality and safety of food fat and oil products sold by retail trade enterprises.</p>
Expected and achieved results	<p>The following achievements will be attained:</p> <p>Issuance of a Report on the Conduct of Pilot-Scale Industrial Trials of the platinum catalyst in the hydrogenation process of sunflower oil at the "Maslo-Del" company.</p> <p>Approval of Technical Specifications (TU) for the platinum catalyst.</p> <p>Development of a techno-economic justification (TEO) for the establishment of platinum catalyst production.</p> <p>Development of technology for producing blended vegetable oils with a balanced fatty acid composition.</p> <p>Production of a pilot batch of blended vegetable oils.</p> <p>Dissemination of information to the general public about the quality of fat and oil products and food items derived from their use through republican media channels.</p>
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List of publications with links to them	
Patents	-



Piston dispenser of viscous products PF P-1000 2 nozzles 2



Semi-automatic labeling machine with a dater



Semi-automatic capping



Compressor oil VORTEX KMP — 210/10



Bottled blends of various compositions with a plug plug.