



This project is funded by the European Union



Romania-Republic of Moldova
ENI-CROSS BORDER COOPERATION



TECHNICAL UNIVERSITY
OF MOLDOVA



„ION IONESCU DE LA BRAD”
IASI UNIVERSITY OF LIFE SCIENCES



INTELLIGENT VALORISATION OF AGRO-FOOD INDUSTRIAL WASTES (INTELWASTES) 2SOFT/1.2/83

<https://intelwastes.utm.md>

www.ro-md.net

USE OF CHICKPEAS AQUAFABA IN THE TECHNOLOGY OF MANUFACTURING VEGETAL SPONGE CAKE

Mihail MAZUR^{1*}, Elisaveta SANDULACHI¹, Antoanela PATRAS²,
Aliona GHENDOV-MOSANU¹

¹Technical University of Moldova, 168 Stefan cel Mare Bd., Chisinau, Republic of Moldova

²„Ion Ionescu de la Brad” Iasi University of Life Sciences, 3 Mihail Sadoveanu Aleea, 700490, Iasi, Romania

Corresponding author: Mihail Mazur, mihail.mazur@saiem.utm.md

GOAL OF THE STUDY. The aim of this study was to investigate the possibilities of replacing eggs with chickpeas boiling water (aquafaba), as a foaming agent of vegetable origin, in the cooking of vegetal sponge cake.

METHODOLOGY OF THE INVESTIGATION. The aquafaba, from canned chickpeas from different manufacturers, was used for the research. Organoleptic indices and quality indicators of canned chickpeas were analyzed. The rheological properties of the foam obtained from aquafaba, and egg white were studied. Physico-chemical indicators and microbiological stability during storage were analyzed. The chromatic parameters were also analyzed to compare the samples of sponge cake of vegetable origin with that of animal origin.



Figure 1. The stages of preparation of the vegetal sponge cake

RESULTS OF THE INVESTIGATION. It has been shown that the textural properties and stability of aquafaba foam depend on canning technology and chickpea varieties. The volume and stability of the foam was compared with those obtained with egg white. The influence of the beating time on the stability of the foam obtained from aquafaba and egg white was investigated. To obtain the vegetal sponge cake, the technology and the classic manufacturing recipe were used, in which egg white was replaced with chickpeas aquafaba. From a sensory point of view, the vegetal sponge cake had a color and texture similar to the sponge cake prepared with egg white, but less elastic, with a pleasant taste and smell.

CONCLUSIONS. Following the research, it was found that chickpeas aquafaba obtained from canned food can be used in the manufacture of pastries, being a potential solution for obtaining vegetable foods.

ACKNOWLEDGMENTS. This work was supported by Moldova State project 20.80009.5107.09 "Improvement of food quality and safety by biotechnology and food engineering", running at Technical University of Moldova.