

THE INFLUENCE OF ADDITIVES ON THE AQUAFABA QUALITY

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Aquafaba is a plant-based by-product with special foaming and emulsifying properties obtained by boiling legumes. The quality of these properties depends a lot on the quality of the legumes soaking and boiling process. In this context, the scientific work aim is to analyze the foaming and emulsifying properties of chickpea aquafaba.

The varieties of chickpea were used for the research, that were soaked in different additives at different concentrations: salt and baking soda (0.5%, 1.0%, 1.5%, 2.0%, 2.5%), citric acid (0.25%, 0.5%, 0.75%, 1.0%). The foaming, emulsifying abilities and stabilities were determined.

The obtained results demonstrated that aquafaba samples with the use of additives in comparison with the blank sample presented higher results for the analyzed indicators. The best results were obtained for aquafaba obtained from chickpea soaked in baking soda with a concentration of 1.5% and salt with 2.5% concentration. In the case of using baking soda, the foam volume increased by 42% and the foam stability for 60 minutes decreased by 11.6%. In the case of aquafaba samples with the use of salt as an additive - the volume of the foam increased by 31.42% and the foam stability during 60 minutes decreased by 7.9%. The results regarding the emulsifying capacity and the emulsion stability were the highest with small deviations in both cases. For the samples of aquafaba obtained from chickpea soaked in citric acid, lower values were obtained compared to the other samples. At the maximum acid concentration, the foam volume increased by only 28.6% and the foam stability over time decreased by 20%. Emulsifying capacity and the emulsion stability was reduced by 32% and respectively 51.4%, compared to the samples where salt and baking soda were used.

Analyzing the obtained results, it was identified that soaking the chickpea grains in salt or baking soda solutions will contribute to obtaining an aquafaba with increased foaming and emulsifying properties, which will contribute to obtain plant based confectionery products with improved quality properties.

Keywords: chickpeas, additives, aquafaba, emulsifying properties

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