

F.52. CONFECTIONERY MASSES WITH EXTRACTS AND POWDERS OF CHOKEBERRY AND SEA BUCKTHORN FRUITS

GHENDOV-MOȘANU ALIONA, STURZA RODICA

*Technical University of Moldova, Department of Oenology and Chemistry, 168, Stefan cel Mare Str.
Chisinau MD-2004, Republic of Moldova*

Abstract. Currently, the confectionery industry deals with functional foods manufacture with natural ingredients to increase their biological value (vegetable extracts and powders) and shelf life, reduce energy value and expand range of sugary products intended for a healthy diet. Synthetic dyes are used in the manufacture of confectionery products to give an attractive appearance to the food. Prolonged consumption of these foods leads to various harmful effects on the health of consumers. The replacement of synthetic dyes with compounds of natural origin obtained from chokeberry and sea buckthorn fruits in the manufacture of candies is current. Research has shown that these berries have various positive effects: antioxidant, antimicrobial etc. The aim of the research was the elaboration of the technology for the confectionery masses manufacture with extracts and powders from chokeberry and sea buckthorn fruits for the substitution of synthetic dyes. The influence of

BACAU 2021

Conference Proceedings – ABSTRACTS

vegetable extracts and powders from chokeberry and sea buckthorn fruits and the shelf life (50 days) on the sensory, physico-chemical characteristics, microbiological stability, and antioxidant activity (*in vitro*) in confectionery masses were investigated. It was found that the best results were obtained in the sample with chokeberry extract and powder, with a concentration of 5% (SCEP) and in the sample with sea buckthorn extract and powder, with a concentration of 4% (SSBEP), because it combines the higher points on sensory characteristics. The results show that the moisture content in the samples with extracts and vegetable powders was lower compared to the control sample (CS) 6.23%. During storage, the moisture content decreased unessentially, compared to the values obtained on the first day of production. On the first day of storage, the water activity was in the range of 0.670 - 0.697 u.c. and on the 50th day after production the values of this index decreased, being in the range of 0.611 - 0.695 u.c., proving that the samples were stable during storage. It has been shown that on the first day after production, the pH values in the samples examined depend on the amount of vegetable ingredients added and the chemical composition of the berries, in particular the content of organic acids. During storage, in all researched samples, pH values were decreased: with 4.2% (CS), 9.8% (SCEP) and 13.2% (SSBEP) compared to the first day. Probably, this decrease can be influenced not only by the chemical composition of the berries, but also due to the oxidation of the lipids in the ingredients, which have been used in the technology of manufacturing confectionery masses. It is attested that, during storage, the total number of germs decreased 1.76 times in SSBEP and 1.46 times in SCEP compared to the CS. It was found that all the samples investigated show antioxidant activity, the values being positive. During storage, antioxidant activity values decreased, but remained positive, showing the antioxidant capacity of the candies tested. The extracts in combination with vegetable powders can be used successfully in the technology of manufacturing confectionery masses as natural dyes, helping to increase the biological value of sugar products and allow expanding the range of candies and fillings.

Keywords: confectionery products, hydro alcoholic extracts, vegetable powders, antioxidant activity, quality.

Acknowledgments: The authors would like to thank the Moldova State Project no. 20.80009.5107.09, “Improvement of food quality and safety by biotechnology and food engineering”, running at Technical University of Moldova.