

Abstract

The aim of the work was to examine an impact of the modified technological treatments, the addition of seasonings and storage on the quality of tomato products. The experimental material comprised two varieties of spherical fruit tomatoes (Bersola F1 and Polset F1) and three elongated forms (Caspar F1, Crosby F1 and Dyno F1). Two types of tomato products were made: classic tomatoes puree (PI) and the product obtained due to fragmentation of whole tomato fruits, however, without sieving stage (PII).

In addition, the products from the cultivar Crosby F1 were enriched by adding basil and oregano in the concentrations of 0.5%, 1%, and 2%. Raw material and tomato products, obtained in laboratory conditions, were examined for dry matter content, total extract, acidity (total, active, and volatile), the content of bioactive compounds such as total flavonoids, total polyphenols, carotenoids, and β -carotene, vitamin C and L-ascorbic acid, total dietary fibre, as well as its soluble and insoluble fraction. Moreover, the colour of tomato products was determined by the instrumental method and the organoleptic evaluation was performed using the 5-point scale method.

This study confirmed that the modified technology applied in the production of tomato products had a significant effect on most of the discussed quality attributes. In comparison with the PII-type products and those containing herbs, the PI-type tomato products had slightly lower content of individual qualitative components such as dry matter, total acidity, pH, total sugars, dietary fibre, vitamin C and L-ascorbic acid, flavonoids and total polyphenols as well as carotenoids and β -carotene. Tomato skins and seeds, which were an integral part of the PII-type product, caused an increase in the level of the physicochemical parameters determined compared to PI-type products. Furthermore, their composition was similar to the composition of the raw material.

In turn, the addition of herbs affected not only products' sensory features, but contributed, among others, to an increase in the level of bioactive compounds such as total flavonoids, total polyphenols, carotenoids and β -carotene. In addition, storage strongly affected the values of most physicochemical parameters, including the colour and general sensory evaluation of the tomato products, which with the time elapsed, was more noticeable. In all cases, the loss of red colour was smaller during the production of PII-type tomato products, where whole tomato fruits were used. The carotenoid pigments contained in the skin and responsible for the red colour, caused better colouring of these products. In the case of PI-type products, these pigments were significantly degraded. Nevertheless, the results of the

general sensory evaluation, which for all products were not lower than 4.0, clearly indicate a higher sensory quality of PI-type products.

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