

EFFECT OF ZINC ADDITION AND PASTEURIZATION TIME ON THE ZINC CONTENT AND COLOR STABILITY OF ACID CANNED VEGETABLE-TYPE SOYBEAN

Karina Czaikoski, Josemeyre Bonifácio da Silva, Rodrigo Santos Leite, José Marcos Gontijo Mandarino, Mercedes Concórdia Carrão-Panizzi e Elza Louko Ida. Departamento de Ciência e Tecnologia de Alimentos, Universidade Estadual de Londrina, Caixa Postal 6001, CEP 86051-970, Londrina, Paraná, Brasil.

For the processing of canned vegetable-type soybean, it is important to realize the heat treatment. However, during the treatment may occur loss of green color that is an indicator of its quality. In the brine canned, the presence of metal ions such as zinc, allows to maintain green color of canned vegetables. The objective of this study was to investigate the effect of zinc addition (X_1 = ppm of zinc in the brine) and pasteurization time (X_2 = min) on zinc content and color stability of acid canned vegetable-type soybean by using Central Composite Rotatable Design (CCRD). The response functions Y_1 (ppm of zinc) and Y_2 (degrees of hue of the canned vegetable-type soybean) were analyzed. The model validation was performed after establishing $X_1 = 10.91$ ppm and $X_2 = 10$ min and $\hat{Y}_1 = 73.49$ ppm of zinc. The experimental answer (Y_1) was 72.74 ppm of zinc. At the response surface can be observed a region where Y_2 is maximal and equal to 93° . The model validation was performed, at the point where, $x_1 = -1.5$, $x_2 = -1.41$ and $\hat{Y}_2 = 92.81^\circ$ of hue of canned. The response obtained experimentally (Y_1) was 92.86° hue of canned vegetable-type soybean. Therefore, for adequate formulation of vegetable-type soybean grains should be zinc acetate (10.91 ppm), NaCl (100 mL 6 g^{-1}), CaCl_2 (0.29 g 100 mL^{-1}) and citric acid (to pH 3.9) with thermal processing of 10 min.