

2. Use of Sprouted Wheat Grain Products in Minced Processed Meat Technology

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Introduction. The research was made with regard to identify the influence of sprouted wheat grains products and other crops on functional and technological parameters of minced processed meat products.

Materials and methods. The chemical composition of the samples was determined by infrared Bruker MPA spectrometer using a library of spectrum samples. The source of measure is an integrating sphere, the spectral range 3600 is 12000 cm^{-1} . The results were analyzed by applied OPUS software, the accuracy of analysis ranges from 0.03 - 0.2%. PH of processed meat products was defined on laboratorial 340 pH-meter. PH values were determined in aqueous extract of processed meat products prepared at a ratio of 1:10. The water-binding power and plasticity were determined by conventional methods.

Results. When preparing samples of processed meat products and before adding the vegetal supplements to the chopped meat, the samples were hydrated at a ratio of 1:1.5 or 1:2 during 30 minutes. The results of the research haveshown that the change of chemical composition of the suggested processed meat products in comparison to those prepared according to traditional recipe is slight. The quantity of liquid increases and protein and fat content slightly decreases. There is also the increase of carbohydrates and dietary fiber which improves the nutritional value of processed meat products. Reducing the fat content results in extended shelf life of the products. Moreover, the distinctive advantage of the proposed recipes is the significant increase of micronutrients (by 1,5 times). According to all technological indicators the test samples are superior to the control ones, including increased output by 21%.

Afterwards the acid stability of samples was checked. The samples of processed meat products were frozen for 7, 14 and 21 days at the temperature not less than 10°C below 0 and relative humidity 75-80%. Oxidation processes were analyzed according to peroxide and acid value indicators. At the beginning of the research we identified that the added supplements had a antioxidant effect even at the stage of preparing the processed meat products. Which was confirmed by a decrease of peroxide and acid value in freshly prepared experimental samples in comparison with the control ones. The same happens during the period of storage.

Conclusions. The use of sprouted wheat grain products and other crops in the recipes of minced processed meat products improves their nutritional value due to the increase of dietary fiber and micronutrients. Also the acid stability is increased which results in extended shelf life of the products.

References

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