

PROSPECTS OF POTATO PULP DISPOSAL: A REVIEW

Kateryna Rubanka^{1*}, Vita Terletska¹, Maxim Pysarev¹, Asiat Abramova²

¹Department of Conservation Technologies, Institute of Food Technologies, National University of Food Technologies, Volodymyrska 68, 01601 Kyiv, Ukraine

²Department of Hotel and Restaurant Business, Institute of Food Technologies, National University of Food Technologies, Volodymyrska 68, 01601 Kyiv, Ukraine

*e-mail: rubanka_ekaterina@ukr.net

Abstract

Potato pulp, which is a residual product of potato starch processing and contains large number of dietary fibre, starch and proteins in large quantities, is accumulated in potato processing plants, because its utilization leads to environmental pollution and significant economic costs. The purpose of this work was to present the main directions of using potato waste as a source of various nutrients that can be used to obtain additional resources - valuable food, feed and technical products. The article considers and analyses modern methods of potato pulp processing, outlines the main benefits of using these wastes in different industries and analyses the problems that arise with this.

More than a hundred research papers published in peer-reviewed scientific journals in the G7, Western Europe, and Southeast Asia have been studied in this area. Much attention has been paid to solving the problems of bioactive substances extraction from potato waste by enzymatic and acid hydrolysis methods. The analysed data contradict each other, as some scientists argue that such a technological operation is not economically feasible, because the costs exceed the desired effect. However, other scientists emphasize that the processing of potato pulp can reduce the cost of potato food products. In our opinion, research in this direction should be continued and physico-chemical and microbiological processing methods that provide the maximum yield of biologically active substances, should be used. Based on the literature analysis, we have identified the following components *Bacillus licheniformis*, *Aspergillus niger*, *Trichoderma asperellum* - for protein extraction, citric acid - for pectin extraction, *Acremonium cellulolyticus* - for saccharification of starch residues during ethanol production, the use of which before or during fermentation provides significant yield of biologically active substances.

We have confirmed the possibility of using pulp in the food industry, although there is very little attention paid as a raw material ingredient in the literature. However, its nutritional value and price can create all the prospects for use in the food industry.

Key words: *Potato pulp, Biotechnological processes of potato pulp processing, Food waste utilization, Biologically active components, Biogas, Ethanol, Feed additive.*