

**EFFECTIVE USE OF SECONDARY RAW MATERIALS IN THE CANNING
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Annotation: Along with the primary raw materials, secondary raw materials are of great importance in the canning industry. Secondary raw materials are residues and by-products formed during the processing of the primary product, the effective processing and use of which allows to increase production efficiency. This article analyzes methods for the effective use of secondary raw materials, their role in improving the quality of canned products and reducing waste. The environmental benefits and economic aspects of secondary raw materials are also considered. For example, in the production of canned fruits and vegetables, peels, skins and chopped residues can be used as animal feed, natural feed additives or biogas. Thus, the processing of secondary raw materials not only reduces production costs, but also serves to protect the environment. This approach also allows for the development of a sustainable and economically efficient canning industry.

Keywords: canning industry, secondary raw materials, residual products, efficient use, recycling, waste reduction, environmental benefits, economic efficiency, biogas, animal feed.

The canning industry plays an important role in ensuring food safety, ensuring long-term storage of products and meeting consumer demand. However, many raw materials remain as secondary resources during the production process. For example, when canning fruits and vegetables, residues of peel, seeds, shells and twigs are formed. At the same time, bone, skin, proteins and fat residues are formed in canned meat or fish. This secondary raw material is often disposed of or used sparingly, resulting in economic and environmental losses in the industry.

Nowadays, the global food industry is faced with the urgent issue of efficient use of resources, waste reduction and minimizing environmental damage. Therefore, the effective use of secondary raw materials in the canning process is technologically, economically and environmentally important. The purpose of this thesis is to identify ways to process secondary

raw materials in the industry and produce additional products from them. The research objectives are as follows:

1. Identify the types of secondary raw materials formed in the canning process;
2. Study modern technologies for processing these raw materials;
3. Assess the economic efficiency of producing new products from secondary raw materials;
4. Develop recommendations for reducing waste in the industrial process and ensuring environmental safety.[1]

The issue of using secondary raw materials in the canning industry has been studied for many years. In international experience, the production of pectin, gelatin, vitamins, food additives, animal feed and biodiesel by processing fruit and vegetable peels, seeds, skin and bone residues is widely used. For example, in European countries there is a separate industry for the production of pectin from fruit peels. At the same time, bone and skin residues from canned meat and fish are processed and used as a source of protein and gelatin.

Local scientific literature also pays attention to this issue. In the conditions of Uzbekistan, peels and seeds generated in canning enterprises are often disposed of as waste or turned into animal feed at a low price. However, in recent years, the prospects for the production of valuable products from these resources - pectin, sugar-free extracts, probiotics and natural preservatives - have been studied. Therefore, as a theoretical basis, the chemical composition, nutritional value and processing capabilities of secondary raw materials are analyzed.

The methodology is organized as follows:

1. Identification of the types of secondary raw materials generated at canning plants;
2. Analysis of the chemical and nutritional composition of these raw materials in laboratory conditions;
3. Study of processing technologies: extraction, drying, fermentation, emulsification and other methods;
4. Evaluation of the economic efficiency of the production of new products from secondary raw materials
5. Development of recommendations for waste reduction and environmental safety based on experimental processes.

Experimental laboratory experiments, statistical analysis, comparative comparison and industrial observations were used as methods.

The results of the study showed that it is possible to create new products by processing secondary raw materials generated during the canning process. For example:

Production of pectin and vitamin extracts from fruit peels;

Extraction of oil and protein extracts from seeds;

Preparation of natural preservatives and additives from vegetable peels;

Preparation of gelatin, protein concentrates and animal feed from meat and fish bones.[2]

Experiments have shown that the use of secondary raw materials reduces production costs by 15–25% and increases the profit of the enterprise. At the same time, the need for waste disposal is reduced and environmental safety is ensured.

Also, according to the research, through the introduction of processing technologies, new products have export potential and serve to develop the national canning industry.

Conclusions and recommendations

1. Secondary raw materials generated during the canning process have great economic and environmental value.
2. The production of new products through their processing increases industrial efficiency.
3. Fruit, vegetable, meat and fish residues can be used as pectin, gelatin, vitamins, protein extracts and animal feed.
4. It is necessary to develop special technological instructions for reducing waste and efficiently using resources at enterprises.
5. The use of secondary raw materials in the national canning industry serves to increase export potential and ensure environmental sustainability.

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