

USE OF BREWERS' SPENT GRAIN IN FOOD PRODUCTION

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Agro-industrial waste is the most abundant and renewable resource not only in the Republic of Moldova, but throughout the world. The accumulation of this biomass in huge quantities every year, leads to the deterioration of the environment, but especially to huge losses of potential valuable materials that could be used as new food, fuel, etc. According to statistics from EU countries, 88 million tons of food waste are disposed annually.

One such beer production waste is brewers' spent grain. It is the main by-product of the beer industry, which accounts for about 85% of the total waste generated. Brewers' spent grain is a brewing waste obtained at the first stage of beer production as a result of thinning malt wort. The spent grain is a perishable product and is stored in the territory of breweries in large quantities. The long-term storage contributes to the deterioration of the product and the release of toxic substances into the atmosphere. It is known from the literature that used spent grain is rich in biologically active substances, mineral substances (P, Ca, Mg, K), B vitamins, fiber, as well as sugars: xylose, arabinose and galactose, which are beneficial for the human body. As a result, biological active substances from brewers' spent grain can be recommended for use in the food industry, in order to fortify food with useful substances or to expand the range of products. Thus, foods rich in fiber and bioactive elements were developed. It was revealed that used cereals from beer producers began to be used in the form of flour in various industries such as bakery, confectionery, meat. Also, it is used as a raw material in the manufacture of slimming foods, cereal bars and sugar substitutes.

For bakery production brewers' spent grain is used in the manufacture of rye and whole grains flour products. In the confectionery direction, used cereal flour is used to manufacture products from puff pastry, yeast and crumbly dough. In the meat industry, this type of raw material is used as an additive to improve the quality of the final product. In addition to food production, brewers' spent grain also began to be used in pharmacology and as feed.

This method of modern use of the brewers' spent grain leads to the expansion of the market with new types of food, which, due to the use of not expensive, but high-quality raw materials, reduce the cost of the product, which makes it more accessible for the population.

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