GRAPE POWDERS IN THE TECHNOLOGY OF SHORTCRUST PASTRY CONFECTIONERY

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Pastries occupy a leading position in the diet of our country's population. Among these the products made of shortcrust dough are very popular. These are: cookies, cakes, pies, muffins and other products. A special feature of this group of products is delicate, crumbly consistency, which is caused by a lot of fat in the recipe. High content of fat, sugar, use of flour makes short crust pastry products high-calorie ones. At the same time, they mostly have a low bioavailability.

The human body under the current conditions is constantly exposed to radiation, chemical additives contained in the air, water, and foods. This leads to the development of many diseases, obesity, occurrence of nerve disorders, decreased immunity. It is therefore important to provide our body with biologically active substances capable to output and neutralize harmful substances, as well as to mitigate the devastating effects of the environment. Recently, much attention is paid to the development of technology products for recreational purposes. One way to create it is the introduction of enrichment additives in products of permanent consumption. Such additives should increase biological value of products and, preferably, do not raise their price to provide access for all segments of the population.

To enrich confectionery we selected grape powder produced by «Oleo Vita» company (Odessa). They are obtained by processing pomace – waste of wine and juice industries, which are affordable and inexpensive raw materials, characterized by a rich chemical composition.

The powders are produced from dried grape skins and grape seed. Powders of seeds are produced in two types – before and after pressing grape oil. All the powders have thin dispersion, do not become caked, mix well with flour and other components of the recipe and have pleasant taste and aroma, and original color – from chocolate to dark purple.

To assess the possibility of using grape powder in the technology of pastry we studied its effect on gluten of wheat flour and on quality of finished products. The powders were added in an amount of from 5 to 30% from weight of wheat flour. The studies found that the addition of grape

powder to flour leads to the decrease in the yield of gluten. Thus, introduction of a 5% powder reduces gluten content compared to the control by 4.0% and the introduction of 12% reduces gluten by 24.6%. When adding powder in the amount of 12…13% gluten cannot be washed out. Reduction of the release of «raw» gluten is probably due to the negative influence of additives on the water holding capacity of the gluten proteins. The quality of gluten also varies significantly with an increase in the proportion of powders. IDK index decreases, extensibility of gluten flour with the addition of all kinds of powders is evenly reduced.

Strengthening impact of grape powder on the structure of gluten, is apparently due to the high content of dietary fiber, which form insoluble complexes with proteins; and tannins. Staining of gluten in chocolate and purple color indicates that phenolic substances interact with it, and also have a strengthening effect on flour gluten complex.

Gluten strengthening is undesirable to short-crust dough, but the addition of grape powder in an amount of more than 15% has no negative effect on the structure of the baked product, as the formation of gluten framework is not happening.

In the products baked from short-crust dough with the addition of grape powder we defined physical and chemical (moisture, wetting) and organoleptic characteristics. The samples were characterized by a gentle structure, pleasant taste and aroma, and the original color. Physical-chemical characteristics of prototypes were on the level of the control sample, except for wetting, which was 10% higher compared with the control sample. The results obtained revealed that rational concentration of grape powder is 15...20% of wheat flour weight. This allows to get high quality products rich in dietary fiber, polyphenols, minerals such as potassium, calcium, magnesium, iron and vitamin B1, to expand the assortment of flour confectionery for recreational purposes, as well as to increase their shelf life due to the high antioxidant activity polyphenolic compounds contained in the grape powder.