

7. The process of gas formation in the dough with oat bran and phospholipids

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Last ten years attention was paid to the problem of rapid growth of diseases of the gastrointestinal tract such as irritable bowel syndrome (IBS). It was noted that the prevalence is increasing among the working population, which is a negative fact [1].

A key factor in determining the course of this disease is nutrition. There were no statistics on the prevalence of this disease for a long time, there are also no approaches to diet therapy and there are no products, in particular bakery products for people who suffer from irritable bowel syndrome. According to the recommendations in the diet of patients IBS it is recommended to increase the content of dietary fiber (DF). Raw material with with a high content of fiber is oat bran. It is also recommended to include phospholipids to the diet, a valuable source of which is lecithin. When developing new types of bakery products microbiological processes are important which take place in the dough.

The effect of oat bran on the gas-forming ability of the dough with lecithin was determined. Samples of dough from high-grade flour with lecithin (3% by weight of flour) and samples with the addition of oat bran in the amount of 5, 7, 10, 15% to replace wheat flour were prepared. A sample without additional raw materials was the control sample. The study of total gas formation and dynamics of carbon dioxide release in the dough was determined during 3.5 hours (Fig. 1).

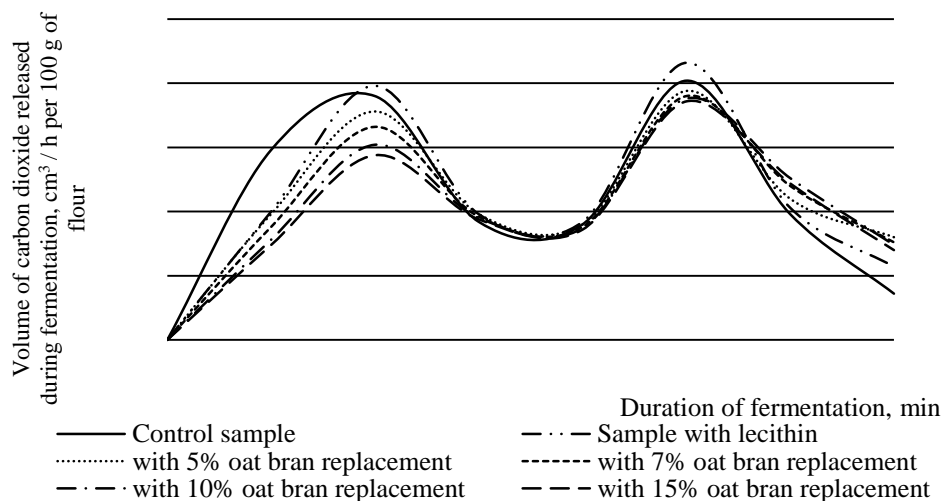


Fig.1 Dynamics of carbon dioxide release in samples with oat bran, cm³/h per 100 g of flour

Lecithin helps to improve the fertility of yeast due to its plasticization and the presence of choline, which has a positive effect on the condition of yeast cells. But it is reduction of gas formation with oat bran, which will further affect the quality of finished products.

References

1. Burisch J, Munkholm P. (2013). Inflammatory bowel disease epidemiology. *Current Opinion in Gastroenterology*. 29(4), 357-362.