# PERFECTION OF RYE AND RYE-WHEAT BREAD PRODUCTION TECHNOLOGY BASED ON OPTIMIZATION OF BIOTECHNOLOGICAL PROPERTIES OF SEMI-FINISHED PRODUCTS

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Critical points of physical-chemical parameters of rye flour and its' mixture with wheat flour and semi-manufactured goods, which predetermine the best quality of complete products, are determined.

Critical point for falling number value of mixture of rye and wheat flour is 200 seconds +/- 10 s.

In case of processing of rye and rye-wheat flour with low alpha-amylase activity is suggested successive introduction of cytolytic and amylolytic enzyme additives, which secure optimal falling number of rye and rye-wheat flour.

Dynamics of changing of falling number of rye, wheat and rye-wheat flour under influence of acidity is determined. It is shown, that difference in optimal falling number values of rye, wheat flour and its' mixture is predetermined by different acidity of rye, wheat and rye-wheat bread.

The best acidity of rye and rye-wheat dough is defined. Critical point is 6-7 degrees.

It is shown, that the best quality of rye and rye-wheat bread is predetermined by the lowest dough effective viscosity.

Optimal rye dough consistency, which allows to determine optimal water amount for kneading is defined. Critical point is 170 FU.

Mechanism of optimal rye dough kneading process if defined. Mixing speed should be determined as point of changing of number cycle of deformations of rye dough. Dough mixing optimal duration is time, when it's consistency gets constant value.

Summary: Special value Δferm for determination of biotechnological properties of rye and rye-wheat semi-finished products is developed. Correlation between maximum value of Δferm and optimal value of falling number of rye flour and the best rye bread quality is established.

Critical points are defined for falling number value of mixture of rye and wheat flour, acidity and consistence of rye dough, its mixing conditions and level of fermentation activity of rye and rye-wheat semi-manufactured goods.