

Influence of Yeast Strains on Microbiological Stability of Wheat Bread

Authors : E. Soboleva, E. Sergachyova, S. G. Davydenko, T. V. Meledina

Abstract : Problem of food preservation is extremely important for mankind. Viscous damage ("illness") of bread results from development of *Bacillus* spp. bacteria. High temperature resistant spores of this microorganism are steady against 120°C and remain in bread during pastries, potentially causing spoilage of the final product. Scientists are interested in further characterization of bread spoiling *Bacillus* spp. species. Our aim was to find weather yeast *Saccharomyces cerevisiae* strains that are able to produce natural antimicrobial killer factor can preserve bread illness. By diffusion method, we showed yeast antagonistic activity against spore-forming bacteria. Experimental technological parameters were the same as for bakers' yeasts production on the industrial scale. Risograph test during dough fermentation demonstrated gas production. The major finding of the study was a clear indication of the presence of killer yeast strain antagonistic activity against rope in bread causing bacteria. After demonstrating antagonistic effect of *S. cerevisiae* on bacteria using solid nutrient medium, we tested baked bread under provocative conditions. We also measured formation of carbon dioxide in the dough, dough-making duration and quality of the final products, when using different strains of *S. cerevisiae*. It is determined that the use of yeast *S. cerevisiae* RCAM 01730 killer strain inhibits appearance of rope in bread. Thus, natural yeast antimicrobial killer toxin, produced by some *S. cerevisiae* strains is an anti-rope in bread protector.

Keywords : bakers' yeasts, killer toxin, rope in bread, *Saccharomyces cerevisiae*

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