

USE OF BERRIES TO REDUCE THE CONTAMINATION OF BAKERY PRODUCTS*

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Abstract: In recent times, wheat flour bakery products have been increasingly affected by *Mesentericus* disease (bread ropiness), which is a serious problem for bakeries [1]. This problem is generated by a relatively heterogeneous microbial population of bacteria belonging to the *Bacillus* genus. It is known that there is a direct correlation between the content of bioactive compounds and the antibacterial potential. In the case of fruit of the dog rose, the *R. canina* and *R. damascena* varieties showed antimicrobial activity against *E. coli*, *B. cereus*, *P. aeruginosa*, *S. typhimurium* and *MRSA* [2].

The objectives of the researches were to examine *in vitro* and *in vivo* the antimicrobial effect of direct contact of fruit powder, seabuckthorn and dog-rose fruit with *B. subtilis* microorganisms in order to reduce the risk of bread ropiness. The direct antimicrobial effect was analyzed *in vitro* by screening the implanted powder by the agar diffusion method. Determination of the influence of vegetable powders *in vivo* was performed by the baking sample method. Bread samples were obtained from superior quality wheat flour, with various additions of vegetable powder in concentrations of 1; 2 and 3 %.

It was found that the fruit powder and white seabuckthorn marc antimicrobial activity against *B. subtilis* is 1.4 times higher than the one of fruit powder and dog-rose fruit marc. Monitoring of bread samples with vegetal addition and without vegetal addition during 24...120 hours showed that a 1 % addition of vegetable powder already substantially reduces the risk of bread ropiness. The increase of the vegetable powder concentration from 1...3 % in wheat flour bakery products affected by *B. subtilis* and *B. mesentericus* reduces the risk of rope spoilage for up to 5 days.

*This work was benefited from support through the 18.51.07.01A/PS project, “Decreasing raw material and food products contamination with pathogenic microorganisms”, funded by Moldavian Government.

References

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