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The positive impact of bioprotective culture on certain burger parameters

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The aim of the study was to investigate the effect of bioprotective culture (*Lactobacillus sakei*) on certain parameters of burgers, produced by standard technology procedure in the meat industry "Promes" in Skopje. Four groups of burgers were produced: (R) burgers without additives, as referent ones; (R/B/A) burgers with additives° (bombal-commercial mixture of: E262 - sodium acetate, E331 - sodium citrate, E315 - iso ascorbic acid, E316 - sodium erythorbate) and antioxidants (E 300 - ascorbic acid, E316 - sodium erythorbate, E330- citric acid); (R/L) burgers where bioculture B-2 SafePro (*Lactobacillus sakei*) was added; and R/L/B/A, products with B-2 SafePro and additives°. Following parameters were investigated in all four groups of burgers: pH value, grilling weight loss, sensory characteristics, Thibarbituric Acid Reductive Substances (TBARS) and total bacteria count. The lowest pH was determined in R/L/B/A, and the highest one in R/B/A products, 3 days after production, although the difference was minimal (6.105 v. 6.125). However, 7 days after production, the difference between R/L and the rest of the 3 groups was evident, the lowest pH was determined in R/L, and the highest one in R products (5.792 v. 5.966). The grilling weight loss was the highest in R/L products compared to the other 3 groups, R, R/B/A, R/L/B/A (15.75 % v.14.225, 12.237, and 12.75 %) which confirmed the statement that lower pH values had induced a higher grilling weight loss. The best sensory characteristics by taste panelists were given to R/L burgers and the worse to R burgers, 7 days after production (89.125 v. 48.125). The results of 90 days storage (at -18°C), have showed the lowest values of TBARS (0.567 mg/kg) in R/L/B/A products, which suggests that the lowest degree of lipid oxidation was achieved by the combination of a bioculture and additives. The highest total bacteria count (higher number of *Lactobacillus sakei* colonies notified) was found in R/L burgers, which suggests that this group should obtain the best control over pathogens, and good protection from meat products spoilage. Conclusion: An addition of bioprotective culture to burgers has a positive impact on their pH, sensory characteristics and microbial profile inducing prolonged shelf life of burgers.

Biography

Zora Uzunoska, MD, PhD, specialist of Clinical Immunology is teaching Human Anatomy, Physiology and Immunology to Nutrition graduate and postgraduate students at the Technological-Technical Faculty of the University "St. Klement of Ohrid" Bitola in Republic of Macedonia (RM). Previously, she was teaching Immunology and Health Management at the Faculty of Medical Science of the University "Goce Delcev" Stip, RM. She is the Chief of graduate Nutrition studies at the faculty and a member of University Senate..

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