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Shelf Life of Frozen Processed Foods for Extended Durability

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Abstract : The aim of the research was to evaluate the shelf life of a REPFED's product (lasagna alla bolognese), developed as a product to be marketed fresh after defrosting. Three different samples were prepared: A, B and C, which presented differences in relation to the recipe, pasteurization technique and packaging on which the trend of the shelf-life indicator parameters was evaluated during a period of prolonged shelf life. The analytical plan involved the measurement of microbiological, chemical-physical and organoleptic parameters over 7 moments of storage selected in a period of 33 days. CBT, LAB, enterobacteria, E. coli, yeasts, molds, S. coagulase positive, B. cereus, Salmonella spp and L. monocytogenes, pH, Aw, Kreiss test, peroxides, atmosphere inside the packages, and organoleptic characteristics were determined. The results demonstrated the effect of post-packaging pasteurization on the shelf life of fresh from frozen products. However, the products pasteurized at 95°C in the absence of steam showed microbiological parameters that were not appropriate for an extended shelf life of up to 60 days. On the contrary, the samples pasteurized at 98°C with steam saturation and counterpressure showed values compatible with an extended shelf life. The results of the chemical-physical analyses highlighted how recipe and packaging affect the chemical-physical and organoleptic parameters. In conclusion, this preliminary study confirmed the effectiveness of post-packaging pasteurization treatments aimed at extending the shelf life of the product, helping the food company to occupy market niches even very distant from the production sites.

Keywords : shelf life, REPFED's product, extended durability, pasteurization
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