

## THE USE OF MICROWAVE RADIATION FOR CHILDREN'S FERMENTED MILK PRODUCTS

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The possibility of using the microwave method for heating kefir for feeding children has been studied. It has been established that the microwave oven does not adversely affect the organoleptic and physico-chemical parameters of yogurt. Microbiological analysis of yogurt samples was carried out.

Milk and dairy products are important for the human diet and are part of the official nutritional recommendations in many countries worldwide. They contribute high-quality nutrition in the human diet through high concentrations of micro- and macronutrients with significant amounts of calcium, magnesium, selenium, riboflavin, zinc, vitamin B12, and pantothenic acid [1, 2].

Fermented dairy products have been considered to have health-promoting properties on consumers' health for a long time. Yoghurt is the most known fermented dairy product with high consumption worldwide mainly because of the many health-promoting effects [3]. Generally, yoghurt is consumed not only because of its high nutritive value and improved organoleptic properties, but also due to its health-promoting effects, especially its probiotic effect [4].

Microwave oven is widely used as a means of food preparation. However, there is insufficient information on the sequences of microwave heating on the composition and nutritional quality of food. Microwave has been used in many fields of the food industry like pasteurization, sterilization, thawing, tempering, cooking, precooking, baking, blanching, and drying. The most notable advantages of using the microwave are the fast heating and short processing time as volumetric heat is generated with high heating efficiency and using a quarter of the time used in conventional heating while maintaining better quality in the product. This is because the high heating rate ensures that the target temperature is reached quickly, thus reducing the thermal impact on the food and minimizes the deleterious effects on sensory and nutritional characteristics of the food.

The current study compared the outcome of microwave heating of milk products with the use of water bath as a conventional approach. These approaches were compared based on various sensory and organoleptic attributes of the milk products, as well as time taken to achieve the desired temperature of between 25-28 °C.

The results showed that microwave oven was more effective at heating baby food due to a shorter time of 20 seconds using low power or 5 seconds using medium power to achieve the desired heating temperatures compared to water bath, which took from 2 min 44s to 3 min 1s to achieve the above temperatures. Moreover, it was shown that microwave heating had no adverse impacts on the sensory and organoleptic properties

of the milk products, as well as the acidity. Because of convenience, speed, and restoration of the nutritional quality of the milk products, microwave treatment is preferred to conventional heating.

In addition, it has been shown that microwave heating does not adversely affect the organoleptic, physicochemical and microbiological parameters of fermented milk products.

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