

Abstract:

Chemical preservatives, including antioxidants, are used to increase the shelf life of food. Due to the adverse effects of these types of preservatives for consumers, in recent years, many studies have been conducted in the field of finding natural preservatives. Green tea and cinnamon are among the useful plants that can be used in the production of food products. Cinnamon plant and green tea are a good source of anti-fungal and anti-bacterial compounds that can prevent the growth of the main spoilage microorganisms of medium moisture foods. On the other hand, cookies are prone to oxidation due to their high amount of fat and as a result reduce their shelf life. In this regard, this study was conducted with the aim of investigating the effect of green tea extract and cinnamon in different and combined concentrations on the physicochemical and sensory properties of cookies. In this research, green tea extract at 0, 2 and 5% levels and cinnamon at 0, 2 and 4% levels were added to the cookie formulation. Then the physicochemical characteristics (moisture, protein, fat, cookie dough specific weight and sensory test of the samples during storage at time intervals of 1, 14, 30 and 60 days after baking were performed according to standard methods. The results showed that all the cookies The preparations containing different concentrations of extract were significant in terms of physicochemical and sensorial properties of the cookie and were within the standard range. The observations showed that the addition of green tea extract along with cinnamon extract in the cookie formulation, weight loss, moisture, ash density and scores It reduced the sensation and caused an increase in fat, protein and specific gravity. Levels higher than 5% of green tea extract had a negative effect on the quality of the cookie. Therefore, an acceptable product can be produced by adding 5% green tea with 4% cinnamon to cookies. Finally, the optimization of the cookie formulation in order to produce a useful product using the investigated characteristics and the determined limits showed that 5% green tea extract with 4% cinnamon (10.33%) is the most suitable amount for the enrichment of cookies, which in this quantity, the percentage of extracts did not cause any adverse changes in the physicochemical and sensory properties of the cookie.

Keywords: green tea extract, cinnamon, microbial, physicochemical properties, cookies