# THE EFFECT OF ADDING CINNAMON EXTRACT ON THE TEXTURE PROFILE ANALYSIS OF OIL CAKE

**Fatemeh GHANNADIASL**

**Faculty of Agriculture and Natural Resources, Department of Food Sciences and Technology, University of Mohaghegh Ardabili, Ardabil, Iran**

**0000-0001-8257-8559**

**Banafshe BORDBAR LOMER**

**Faculty of Agriculture, Department of Food Science and Technology, Urmia University, Urmia, Iran**

**0000-0002-9457-5483**

|  |
| --- |
| **ABSTRACT**  Bakery products, especially oil cakes, are among the most widely consumed food products [1]. The production of functional bakery products with physiological effectiveness and consumer acceptance requires careful consideration of their appearance, taste, and texture [2]. The quality of these products mainly depends on the ingredients used in the recipe, the dough mixing conditions, and the baking conditions [3]. Therefore, determining the optimal formulation to have healthy properties, maintain tissue properties, and improve the flavor of these products is very important [4]. Cinnamon is a spice that has been shown to have antioxidant, anti-inflammatory, and antidiabetic effects [5], as well as enhancing the sensory attributes of bakery products [6]. The aim of this study was to evaluate the impact of different concentrations of cinnamon extract (0%, 0.1% and 0.2%) on the hardness, adhesiveness, cohesiveness, and resilience of oil cake. We hypothesized that adding cinnamon extract would improve the texture characteristics of oil cake. Texture profile analysis was performed using TEXTURE ANALYZER model Brook field-CT310K. The results showed that adding cinnamon extract reduced the hardness of the cake samples, while the adhesiveness did not change significantly. The cohesiveness and resilience of the cake samples also decreased with increasing extract level. These results suggest that using cinnamon extract can enhance the texture and stability of oil cakes.  **References:**  [1] Rios, R. V, Garzón, R., Lannes, S. C. S., & Rosell, C. M. (2018). Use of succinyl chitosan as fat replacer on cake formulations. *LWT*, 96, 260–265.  [2] Siró, I., Kápolna, E., Kápolna, B., & Lugasi, A. (2008). Functional food. Product development, marketing and consumer acceptance: A review. *Appetite*, 51(3), 456–467.  [3] Doweidar, M. M., Amer, A. M., & Tawfek, A. (2016). Preparation and evaluation of healthy cinnamon cake. *Egyptian Journal of Nutrition*, 31(4), 157-195.  [4] Škrbić, B., & Cvejanov, J. (2011). The enrichment of wheat cookies with high-oleic sunflower seed and hull-less barley flour: Impact on nutritional composition, content of heavy elements and physical properties. *Food Chemistry*, 124(4), 1416–1422.  [5] Muhammad, D. R. A., & Dewettinck, K. (2017). Cinnamon and its derivatives as potential ingredient in functional food—A review. *International Journal of Food Properties*, *20* (Supl 2), 2237-2263.  [6] Ghannadiasl, F., & Bordbar Lomer, B. (2023). Physicochemical and sensory properties of oil cake enriched with cinnamon extract. *Journal of Food Research*, *33*(2), 43-55. |

# Keywords: Oil cake, Cinnamon extract, Texture profile analysis.