

# **Effect of Xanthan Gum, Guar Gum and Tragacanth Gum on Physicochemical and Sensory Properties of Hazelnut Sauce**

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**The high nutritional value and the presence of bioactive compounds in hazelnut has made it a valuable nutrient. One of the ways to increase per capita consumption of hazelnuts is to process it in various ways, including the production of hazelnut sauce. On the other hand, the most common problem with sauces is instability after preparation and during storage. Hydrocolloids are used in order to create proper texture in the sauces. Xanthan gum, guar gum and tragacanth are some type of hydrocolloids that is widely used to improve the quality and shelflife of food. In this study effect of xanthan gum, guar gum and tragacanth gum on physicochemical and sensory properties of hazelnut sauce were investigated. For this purpose, gums were used in 0.25, 0.5, 0.75 and 1% levels in hazelnut sauce formulation. Physical and chemical properties (pH, moisture and acidity, viscosity, hardness and adhesiveness of texture) and sensory properties (appearance, color, taste, texture, consistency, rubbing, oral sensation and overall acceptance), as well as stability of samples on days 0, 30, 60 And 90, were evaluated. This research was carried out in a completely random factorial design and in order to determine the difference between the means, Duncan's multi-domain test was used at a significant level of 5%. The results showed that the acidity of the samples decreased significantly with increasing gums levels. Moisture content, stability over time, hardness and adhesiveness of texture and viscosity of the samples increased significantly. By changing the amount of all three gums in the formulation, there was no significant change in the pH of the samples. The analysis of sensory properties showed that the color, taste, texture and oral sensory parameters of all three gums were significantly higher than the control sample. The highest score of sensory properties, consistency, rubbing, and overall acceptance was for samples containing different levels of guar gum. By optimizing**

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**the physicochemical and sensory properties of hazelnut sauce, we can see that the best quality, sensory and shelflife properties were for the sample containing 0.75% guar gum.**

**Keywords : sensory evaluation, textural analysis, stability, xanthan, viscosity, guar, tragacanth.**

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