

## Technological Properties, in Vitro Starch Digestibility, and Antioxidant Activity of Gluten-Free Cakes Enriched With *Prunus spinosa*

**Authors :** Elif Cakir, Görkem Özülkü, Hatice Bekiroğlu, Muhammet Arici, Osman Sağdic

**Abstract :** It is important to be able to formulate cakes with a wide consumption mass with gluten-free and high nutritional value ingredients to increase the consumption possibilities of people with limited nutrition opportunities. Although people do not prefer *Prunus spinosa* (PS) because of its sour taste and its use in the food industry is limited on a local scale, the potential of using PS, which is a naturally rich source of many micronutrients and bioactive compounds, in glutenfree cake production has been investigated. In this study, the potential of using PS, a natural wild fruit, in the production of functional gluten-free cakes was investigated. It was aimed to evaluate the effects of freeze-dried and powdered PS-enriched rice flour cakes on tech functionality, nutrition and eating quality. In terms of physicochemical properties, PS raises increased the ash, protein, and moisture values of the cakes. PS with high phenolic content, phenolic component content, and radical reducing power made by ABTS, FRAP, and DPPH techniques were higher in all samples than control, and the highest 4% PS was determined in cakes. In terms of the glycemic index (GI), which is an important feature of diet products, it was determined that the GI in cakes decreased by  $86.30 \pm 1.04$ ,  $75.05 \pm 1.16$  and  $69.38 \pm 1.21$ , respectively, with the increase in PS ratio. Except for the 1%, PS added sample, the increase in PS caused a decrease in specific volume, % porosity and increase in hardness, including 4 days of storage. PS increase decreased the  $L^*$  and  $b^*$  values and increased  $a^*$  value and redness of the cake. Sensory liking of the cake samples containing PS was scored significantly ( $p < 0.05$ ) higher of control.

**Keywords :** *Prunus spinosa*, gluten-free cake, antioxidant, phenolic, glycemic index

**Conference Title :** ICFPFSA 2022 : International Conference on Food Production, Food Security and Agriculture

**Conference Location :** London, United Kingdom

**Conference Dates :** November 18-19, 2022