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INFLUENCE OF SPIRULINA ON PHYSICAL PROPERTIES OF DOUGH FOR CRACKERS

***Ivana Nikolić*[1], Jovana Petrović[1], Ivana Lončarević[1], Slađana Rakita[2], Ivana Čabarkapa[2], Aleksandar Takači[1]**

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Spirulina, blue–green alga (*Cyanobacteria*), contains proteins (60–70%), carbohydrates, vitamins C, D, E, and minerals such as Fe, Ca, Cr, Mg, Na, Zn, Mn, P, K and Cu. Spirulina biomass is a commercial source of various bioactive metabolites, including γ–linolenic acid, pigments such as chlorophyll, phycocyanin and β–carotene. Several food products are formulated with the addition of spirulina, and the number of new food products with this valuable component is increasing on the market. The aim of this work was to observe the influence of spirulina powder on physical properties of gluten free dough for crackers. A part of integral rice flour, in appropriate recipe for crackers, was replaced with 5, 10 and 15% of spirulina powder. After mixing the dough, the rheological and textural characteristics of obtained dough samples were analyzed. Change in the color of the dough was also observed, due to specific green–blue color of the spirulina powder. The addition of spirulina contributed to viscoelastic properties of dough and increased the resistance of dough to applied strain within non–destructive limits, thus it can be more easily manipulated. With increase in amount of spirulina addition the compliance of dough increased, thus these samples had softer consistency and lower hardness. The dough extensibility was slightly increased compared to control dough, but increase in spirulina content did not further contribute to this effect. The addition of spirulina certainly affected the color change of the dough from dark white to intense green, what means that it will have a great impact on the sensory quality of baked crackers. Thanks to the favorable properties of the obtained dough with rice flour and spirulina powder, a high sensory quality of baked cracker is expected, what is an excellent basis for the further development of gluten–free fine bakery product with high nutritional value.

Keywords: Spirulina, Rice flour, Dough rheology, Texture, Color

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