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Physicochemical, oxidative and sensory changes in chitosan coated fermented Turkish sausage (Sucuk) during processing and storage

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The effect of chitosan coating on the physicochemical, oxidative and sensory properties of sucuk (Turkish fermented sausage) was investigated. Different concentrations of chitosan solutions (0.2, 0.5 and 1%) (C1, C2 and C3) was prepared by dissolving in 1% acetic acid (AA) (w/w) for use in coating. Sausage samples were analyzed during ripening for 12 days and storage at 4ºC for 3 months and results were assessed by comparing chitosan treatment with sausages dipped into 20% potassium sorbate (PS), 1% AA and distilled water (control). Chitosan treated sausages had the higher moisture and water activity (aw) values than the samples with control, AA and PS during processing and storage. The sausages had an average moisture of 54% on day 0 and 27 % in control and 31% in chitosan treated sausages at the end of ripening, reflecting a moisture loss of 28% in control and 23% in chitosan treated sausages. Chitosan treatment and ripening time significantly ($P<0.01$) affected the moisture content of sausages while no significant effect ($P>0.01$) was found among chitosan concentrations. Changes in sausage pH were significantly ($P<0.01$) affected by treatments. The greatest pH decrease was observed during fermentation and chitosan treatment at day 4. The pH values of control and PS treated sausages had higher than those of the sausages with AA, C1, C2 and C3 during storage. The rate of lipid oxidation in the sausages was significantly decreased ($P<0.01$) by chitosan treatment. Coating with 1% chitosan solution did not significantly affect the sensory properties.

Biography

Betul Arslan graduated from Ataturk University with a Bachelor's Degree of Food Engineering Department in 2013. In 2016, she completed her thesis on "Usage of chitosan as surface mold inhibitor in sucuk processing" and earned her Master's Degree from the Ankara University. Currently, she is a PhD student at the same university.

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