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Effects of chitosan as a surface fungus inhibitor on microbiological, physicochemical, oxidative and sensory characteristics of dry fermented sausages

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Abstract

The study aimed to improve the quality characteristics of Turkish dry-fermented sausages (sucuk) using different concentrations of chitosan (CH) coating as superficial mold inhibitor. The sausages were treated (w/w) with chitosan (0.2%, CH1; 0.5%, CH2 and 1%, CH3), potassium sorbate (20%, PS), acetic acid (1%, AA) and distilled water. Treatment with PS and CH3 resulted in a remarkable reduction of mold and yeast counts in the sausages and on casings at the end of ripening. Total aerobic mesophilic bacteria and lactic acid bacteria (LAB) varied from 7.19-7.29 to 9.01-9.27 and from 6.37-6.44 to 8.53-8.93 log CFU/g at day 0 and 12, respectively. Treatment with chitosan did not affect the natural microbiota of the sausages. *Enterobacteriaceae* counts were lowered from 5.79-5.89 to 2.08-2.53 log CFU/g by chitosan. Moreover, the rate of lipid oxidation in the sausages decreased by chitosan treatment. Sensory attributes were also notably enhanced in the cooked sausages treated with chitosan.

Key words: fermented dry sausages, chitosan, antifungal treatment, lipid oxidation