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The use of chitosan as a coating material for preserving the sensory, physicochemical and microbiological quality of dry-cured meat

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A great number of dry-cured meat products are produced worldwide with different names such as pastirma (Turkey, Egypt, Russia), biltong (South Africa), jerky (United States), charqui (South America), pemmican (North America), tasajo (Cuba), nikku (Canadian Arctic), sou nan and rou gan (China), carne seca (Mexico), fenalår (Norway). The use of chitosan as an additive in food is common; however, its application as a coating in meat and meat products is limited. Therefore, the main objective of the current study was to apply chitosan as an edible coating for one of the most popular traditional dry cured meat product (pastirma) to improve its sensory, physicochemical and microbiological quality characteristics. To achieve this objective, ninety deep frozen semitendinosus muscles were prepared and dry cured. After that, half of the dry cured muscles were coated with the traditional coating materials (çemen) and the other half was coated with chitosan coating. All coated pastirma were stored for 4 weeks and examined for sensory, physicochemical and microbiological quality parameters. The results revealed improved sensory attributes, lower moisture loss, pronounced antioxidant effect with lower shear force values in chitosan-coated samples. About one log CFU/g reduction in aerobic plate count was recorded in chitosan-coated samples, whereas psychrotrophic, anaerobic, yeast and mold counts were under the detectable levels of direct plating (2-log CFU/gram). It can be concluded that chitosan coating can be a good choice for meat processors to overcome the problems that arise from traditional pastirma coatings.

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