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Food Safety: Science in Action

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PROGRAMA

ABSTRACTS



INFLUENCE OF STORAGE TEMPERATURE ON THE QUALITY AND SAFETY OF PAINHO DE PORCO PRETO

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Dry-cured sausages are traditional in Mediterranean countries. In Portugal, these products are highly appreciated and play an important role in the country's economy and food supply. Painho de Porco Preto is a ready-to-eat meat product traditional to the Alentejo region, characterized by being a mixture of minced meat seasoned with salt, paprika and garlic. While dry-cured sausages are usually stable products in which sanitary risks are reduced, their microbiology is varied and complex and the rate of spoilage of these products can reduce the shelf-life and cause substantial financial losses to manufacturing companies. Factors such as ripening technique, use of pork and beef natural casings to stuff meat batters, bacterial populations of raw meat materials, the use of spices as formulation ingredients, smoking period, application of modified atmosphere and the CO₂ concentrations, and storage temperature all have significant influence on the microbiota of this type of meat products and also on the growth and survival of spoilage microorganisms during shelf-life period. Therefore, the objective of this study was to evaluate how different temperatures could influence the quality and safety of the Painho, throughout its storage time. In order to achieve that, vacuum packed sliced Painho was used, with half of the samples being kept at room temperature ($\pm 22^{\circ}\text{C}$), and the other half stored at 2°C , 90 % R.H

(relative humidity). The samples were analyzed on day zero, after 2 months, and then every month, with the duration of the trial being of 4 months. Physicochemical parameters, namely pH and water activity (a_w), microbiological (mesophiles, yeasts and molds, lactic acid bacteria, staphylococci, enterobacteria, *Salmonella* spp., and *Listeria monocytogenes*), color, and sensory attributes were assessed. During storage, microbiological counts generally decreased at both temperatures. Lightness, redness and yellowness of slices changed in different way in the meat and fat, at both temperatures. Changes in color were also observed in sensory analysis of the dry-cured sausages, with panelists pointing out off colors in the samples. pH values decreased in the room temperature samples, while the a_w increased but remained with values below 0.90, which is considered a threshold value to ensure the preservation of these products. Overall, the samples stored at room temperature, show better results, with lower values of pH, lower a_w , less microbiological grow and a higher value of sensory overall perception.

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