

Effect of turmeric content in the sensory attributes of beef fermented sausage

Paulo Munekata, Laura Purriños, Roberto Bermúdez, Noemi Echegaray, Márcio Vargas-Ramella, Rubén Domínguez, Mirian Pateiro, Daniel Franco, José M. Lorenzo

Centro Tecnológico de la Carne de Galicia, Ourense, Spain

Introduction: Reformulating traditional meat products due to health- (improving fat composition) or consumer-oriented (clean label products) strategies is a challenging task, especially in terms of sensory acceptance and oxidative stability (Domínguez et al., 2019, 2021). In this sense, the use of natural antioxidants can be seen as an important solution to delay oxidative reactions and produce clean label meat products (Pateiro et al., 2021). An interesting source of natural antioxidants is turmeric (*Curcuma longa* L.), a natural yellow dye (due to the presence of curcuminoids) traditionally used in the preparation of meals in Asia (de Carvalho et al., 2020; Munekata et al., 2021). Thus, this study aimed to evaluate the effect of different levels of turmeric on sensory acceptance of beef fermented sausage.

Materials and methods: Fermented sausages were elaborated using beef, Prosella® with canola oil, water, and commercial *Salchichón* seasoning. Three treatments were prepared: control (without antioxidant), T25 and T50 (turmeric; 25 and 50 mg/kg, respectively). After the ripening period, samples were used for sensory analysis. The panel was composed of 68 consumers. The preference order test (POT) was applied to rank the appearance, odor, hardness, chewiness, and flavor of beef fermented sausages. A 7-point Just About Right scale was also used to evaluate the overall acceptance. Analysis of variance, least significance difference test, Friedman's analysis of variance for ranked data (POT), and penalty analysis were carried out in the XLSTAT software (Addinsoft, 2019).

Results: Overall acceptance of beef fermented sausages was not affected by turmeric addition. Moreover, significant differences were not detected in POT for any attribute. Particularly for T25 and T50 treatments, penalty analysis did not indicate significant effects of attributes in their overall acceptance. Likewise, turmeric extract (0.025, 0.050 and 0.075%) did not affect the discoloration and odor in healthier fresh lamb sausages produced with Prosella® gel (containing tigernut oil) as fat replacer (de Carvalho et al., 2020). Additionally, these authors reported a significant effect in the color of sausages produced with turmeric extract. In a related experiment, the color of mortadella was affected by curcumin microcrystals (0.002%) whereas non-significant effects were indicated for odor, flavor, texture, and overall acceptance (Júnior et al., 2019).

Conclusions: Sensory acceptance of healthier beef fermented sausages is not influenced by turmeric (up to 50 mg/kg), which support the use of turmeric as natural antioxidant in this meat product.

Acknowledgements and Financial support statement: The authors are grateful to the Xunta de Galicia (grant number: FEADER 2018/005A) for financial support for the study. Noemí Echegaray acknowledges to Consellería de Cultura, Educación e Ordenación Universitaria (Xunta de Galicia) for subsidizing with a predoctoral scholarship (Grant number IN606A-2018/002). The authors are members of the Healthy Meat network, funded by CYTED (ref. 119RT0568). Thanks to GAIN (Axencia Galega de Innovación) for supporting this research (grant number IN607A2019/01).

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