

PE4.31 Effect of brine thawing/salting Iberian hams on sensory features 117.00

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Abstract— This study was aimed to investigate the effect of brine thawing/salting on sensory traits and acceptability of Iberian dry-cured hams. Iberian hams salted traditionally in pile salting (T) and brine/thawing without (B) and with (BV) vacuum pulses were processed under the same conditions, being sensory analyzed at the end of the processing. Attributes related to appearance were affected, T Iberian hams obtained higher scores of fat oiliness and lean brightness and lower of marbling than B and BV ones, whereas BV hams had higher scores of red color of lean than the other groups of ham. However, the brine thawing/salting procedure did not influence sensory traits of texture, taste and flavor. Moreover, the overall acceptability of the three groups of dry-cured hams was between average and good.

Index Terms— Brine thawing/salting, vacuum pulse, Iberian hams, sensory analysis.

I. INTRODUCTION

A simultaneous brine thawing/salting operation has been proposed for the processing of frozen meat products which are salted after thawing [1]. Frozen hams constitute one of the products that can be processed through the simultaneous brine thawing/salting operation as recently reported [2, 3]. The results from these studies indicated a reduction in the salting time when using the brine thawing/salting method, which was performed together with vacuum impregnation. Besides, the post-salting stage could be reduced from the 50 days in the traditional fresh raw material salting, to 25 days when using frozen hams brine thawed/salted.

However, no influence of the use of vacuum impregnation during the salting stage was observed in the post-salting period. From the microbiological point of view, no significant differences were observed among the hams processed by the different treatments (pile salting, brine thawing/salting operation) [4]. Moreover, the brine thawing/salting process resulted in similar or even better sensory preferences than hams

produced through the traditional method [5]. Iberian ham is a traditional dry cured product characterized by its long time of processing. Although the different stages of the processing of Iberian hams are totally established, not considering even freezing the hams, taking into account the positive conclusion of the using of the brine thawing/salting procedure in white hams, it could be considered to try this procedure in Iberian hams. Therefore, setting the limits of new processing conditions that do not compromise the sensory quality of Iberian ham is essential, the aims of this work was to analyze the effect of brine thawing/salting on sensory characteristics of Iberian hams .

II. MATERIALS AND METHODS

Experimental design This study was performed with 18 Iberian hams, which were frozen at -20 °C during three months. Six of the frozen hams were thawed at 3-4 °C for 36-48 hours and pile salted at 0.7 day/kg (T). The remaining 12 Iberian hams were brine/thawed salted in saturated brine, six of them at atmospheric pressure for 3 days (B) and the other six for a total of 5 days, applying vacuum pulse when the hams were already thawed (BV). All the salting experiments were carried out at 3 °C. After salting, Iberian hams were held at 4-8 °C and 73-75% relative humidity for 75 days (post-salting step). During the drying stage, the hams were kept in a room under controlled conditions for 120 days, where temperature was increased from 8 to 20 °C, while relative humidity was progressively reduced to 64%.

Finally, hams were ripened for 16 months (cellar stage) at 20-25 °C and relative humidity 55-65%. Samples were obtained by dissecting the Biceps femoris muscle of each dry-cure ham. Sensory analysis Fourteen trained panelists formed the tasting panel. Eighteen sensory attributes of dry-cured Iberian hams, grouped in appearance of fat and lean, texture fat and lean, aroma, taste and flavor were analyzed. Analyses were developed in tasting rooms with the conditions specified in UNE regulation. All sessions were conducted at ambient temperature in a sensory room

equipped with white fluorescent lighting. The software used to record scores in the sensory sessions was FIZZ Network (version 1.01: Biosystemes, France). The hams were cut into 1.5 mm thick slices, with a slicing machine. Then, slices were served on plates to panelists. The panel sessions were held mid-morning, among 12-13 h in the morning. Panelists evaluated the different parameters by means of a quantitative-descriptive analysis in a non structured scale 0-10. Three samples randomly presented to the panelist were analyzed in each session. About 200 ml of water at room temperature was provided to the panelists. In each session, the panel average for each sample was recorded.

For the acceptability sensory study, 193 panelists chosen at random rated the Iberian dry-cured hams following a mixed hedonic scale (5: very good; 4: good; 3: average; 2: poor; 1: very poor) in a sensorial test carried out in accordance with UNE 87004 (1979). Statistical analysis The effect of brine thawing/salting Iberian hams on its sensory characteristics were analyzed by one-way analysis of variance (ANOVA) using the General Linear Model of SPSS (v.15.0).

III. RESULTS AND DISCUSSION

Figure 1 shows the mean scores for appearance and texture of fat and lean, taste and flavor from the T, B and SV dry-cured Iberian hams of the present study. Sensory traits related to appearance of fat and lean were significantly affected by the brine thawing/salting practice. T Iberian hams showed higher scores of fat oiliness and lean brightness and lower of marbling than B and BV ones. Besides, BV hams obtained higher scores of red color of lean than the other groups of hams.

However, there were no differences in the texture of fat and lean, taste and flavor among T, B and BV dry-cure Iberian hams. Flores et al. [5] also found differences in the appearance, obtaining higher scores Iberian hams salted traditionally than those processed with both procedures, brine thawing/salting with and without vacuum pulse. Results from the acceptability did not reflect differences among the three groups of hams of this study. Most panelists considered T, B and BV dry-cured Iberian hams to be between good and average.

Nevertheless, in white hams the sensory analysis showed that the consumers preferred the brine thawed/salted hams than those processed traditionally [5].

IV. CONCLUSION

The brine thawing/salting procedure influences fat and lean appearance of Iberian dry-cured hams, affecting fat oiliness, brightness, marbling and red color of lean, whereas there was no influence on sensory traits concerning texture, taste and flavor neither on overall acceptability.

ACKNOWLEDGEMENT

This study was supported by the “Ministerio de Ciencia y Tecnología. Secretaría de Estado de Política Científica y Tecnológica” proyect entitled “Desarrollo de una tecnología basada en el saldo y descongelación en salmuera saturada, con y sin empleo de la impregnación a vacío, para la obtención de jamones curados a partir de perniles congelados” (Ref. PTR1995-0754-OP-03-03). Trinidad Pérez Palacios thanks the “Junta de Extremadura” for the pre-doctoral grant. Authors are grateful to RESTI industry for manufacturing the samples of this research and the panelists for their participation in the sensory analysis.

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