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INFLUENCE OF SAMPLING PROCEDURE AND PRESENTATION ON THE SENSORY PARAMETERS OF SPANISH DRY-CURED HAM

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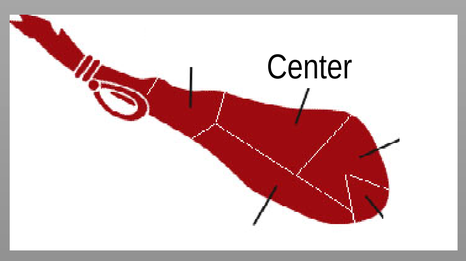
Introduction and Aims

Spanish Iberian dry-cured ham represents a large proportion of the meat products included under Quality Distinctions on the Spanish market and stands out among them as a high-quality product owing to its sensory properties. However, the sensory quality analysis of dry-cured ham is very complex. For example, a wide diversity of flavour descriptors are used by different people to characterize the same flavour and odour (Flores et al., 1997), and different areas may influence the panellists' response (Guerrero et al., 2005). Moreover, it is possible to find Iberian dry-cured ham on the market in different packages or presentations. The QDA method implies the generation of the descriptors in the sessions prior to the sample evaluations. All the above-mentioned factors could then affect the chosen descriptors. The aim of this work was to find the sensory parameters of Iberian dry-cured ham that are related to the sampling procedure or presentation and those that are independent from these factors.

Materials and methods

16 Spanish dry cured hams




Cut knife


Electric slicer


Vacuum packed


Not packed

Four trained panels
10 members each

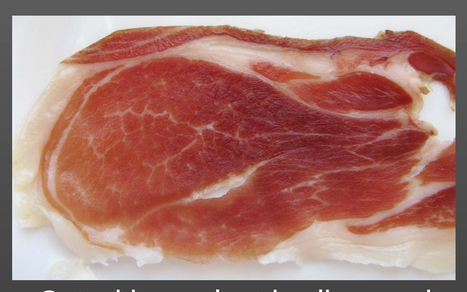

Profile analysis

Four profiles

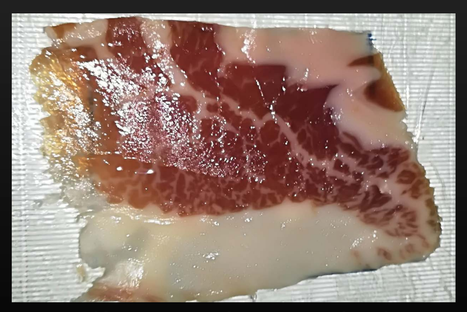
Aspecto	Veteado	Poco-Mucho
	Color de la grasa	Amarillo-Blanco
	Homogeneidad del Color	Poca-Mucha
	Intensidad de color	Rosa-Rojo
	Sudado	Poco-Mucho
	Puntos blancos	Poco-Mucho
Olor	Intensidad de olor	Poco-Mucho
	Curado	Poco-Mucho
	Cerdo	Poco-Mucho
	Rancio	Poco-Mucho
	Olor extraño	Poco-Mucho
Sabor	Intensidad de sabor	Poco-Mucho
	Intensidad de la grasa	Poca-Mucha
	Curado	Poco-Mucho
	Salado	Poco-Mucho
	Dulce	Poco-Mucho
	Ácido	Poco-Mucho
	Rancio-Añejo	Poco-Mucho
	Retrogusto	Poco-Mucho
	Sabor extraño	Poco-Mucho
Textura	Dureza	Poca-Mucha
	Jugosidad	Poca-Mucha
	Grasosidad	Poca-Mucha
	Fibrosidad	Poca-Mucha
	Masticabilidad	Poca-Mucha
	Chiclosidad (Bola)	Poca-Mucha
	Heterogeneidad	Poco-Mucho
	Residuo	Poca-Mucha

Results


Cut with an electric slicer and vacuum packed


Cut with an electric slicer and not packed


Knife cut and vacuum packed


Knife cut and not packed

	Common descriptors	Description	Vaccum packed	Description	Electric slicer	Description	Knife cut	Description
Appearancee	Colour homogeneity	Absence of different pink-red colours in the slice	Metallic shine	Intensity of metallic bright on the surface	Covering fat	Amount of fat around the slice	Sweatiness	Level of liquid fat on the surface
	Colour intensity	Intensity of the color from pink to dark red			Fat content	Total content of fat inside the slice		
	Marbling	Level of visible intramuscular fat that are completely distributed in the slice			Heart	Center in the slice soft and pale and separated by a halo		
	White spots	Number of withe spots due to the tyrosine precipitates						
	Fat colour	Intensity of the fat color from yellow to white						
Odour	Odour intensity	Intensity of overall ham odour regardless of whether it is expected or anomalous	Plastic odour	Intensity of the odour associated with the plastic packaging				
	Dry-cured ham odour	Set of complex smell characteristic of dry-cured meat products						
	Rancid odour	Intensity of odour related to rancid fat						
	Off-odour	Intensity of anomalous odours						
Flavour	Flavour intensity	Intensity of overall flavor	Bitterness	Taste associated with caffeine and L-tryptophan (Flores et al., 1997)			Fat flavour intensity	Aromatics associated with lipid products
	Dry-cured ham flavour	Set of complex taste characteristic of dry-cured meat products (Guardiá et al., 2010)						
	Salty	Taste on the tongue associated with sodium ions (Flores et al., 1997)						
	Sweetness	Taste sensation elicited by sugar (Guardia et al., 2010)						
	Rancid flavor	Intensity of the rancid flavor (Ruiz et al., 2002)						
	Sour	Taste on the tongue associated with citric acid (Flores et al., 1997)						
	After-taste	Intensity and time extension of the flavor after swallow the sample (Ruiz et al., 2002)						
Texture	Hardness	Amount of pressure required to completely compress the sample (Guardia et al., 2010)			Uniformity	Absence of different textures in the slice		
	Juiciness	Amount of juice in the mouth in the first chews						
	Chewiness	Number of chews necessary to separate the sample into smaller particles						
	Fatness sensation	Fatty or lardy sensation in the mouth when chewing the meat.						
	Fibrousness	Perception of the amount of muscle fibres detected during chewing (Guardia et al., 2010)						
	Pastiness	Feeling of paste detected in hams with a high proteolytic index (Guardia et al., 2010)						
	Residue	Amount of particles after swallow						

REFERENCES:
Guardia et al. (2010). Sensory characterization of dry-cured ham using free-choice profiling. Food Qual. Prefer. 21 (148-155).
Flores et al., 81997). Correlations of sensory and volatile compounds of Spanish “Serrano” dry-cured ham as a function of two processing times. J. Agric. Food Chem. 45: 2178-2186.
Ruiz et al. (2002). Influence of sensory characteristics on the acceptability of dry-cured ham. Meat Sci. 61: 347-354.

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CONCLUSION:
The type of the packaging and even more the sample preparation have influence in the parameters that are relevant for Iberian dry-cured ham description and should be taken into account in its sensory analysis