

# Sensory analysis challenges for the “Chorizo Zamorano” dry sausage Quality Appellation

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According to the Regulatory Board of the “Chorizo Zamorano” Quality Appellation, a sensory analysis by an experienced sensory panel is compulsory in order to obtain a positive evaluation by the Certification Entity which audits the quality control process according to European Directive EN745001. Sensory evaluation is therefore a cornerstone of the evaluation process which is used to determine whether a manufacturer of “Chorizo Zamorano” dry sausage meets the required standard for appellation status. However, several critical issues related to the organoleptic assessment of PDO products have been identified such as: the description of the sensory characteristics that the product must present is highly generic, there is no statement on how to check it (Ojeda et al., 2015), the cards are very generic (Etaio et al., 2012), or there is a lack of references. This could result in differences between panels or throughout the years owing to the evaluation process instead of the product characteristics.

## AIMS

In order to study this aspect the sensory evaluation of dry sausages from eight manufacturers with the “Chorizo Zamorano” Quality Appellation over the last 10 years was evaluated.

## MATERIALS AND METHODS

Panel Years Samples evaluation

Panel 1 2006-2012

Panel 2 2013-2018



## Sensory card

DESCRIPTIVE ANALYSIS OF “CHORIZO ZAMORANO”			
<b>1. External perception</b>			
Quality of outer odour	Defective	1---2---3---4---5	Typic
Intensity of outer odour	Low or high intensity	1---2---3---4---5	Medium intensity
Outer defects			
Defective odours perceived:			
<b>2. Evaluation of the slicing zone</b>			
Separation of the casing	Difficult	1---2---3---4---5	Easy
Binding of the mass	Low	1---2---3---4---5	High
Defects of the cutted zone			
Odour quality	Not balanced	1---2---3---4---5	Balanced
Odour Intensity	Low or high intensity	1---2---3---4---5	Medium intensity
Perceived odours			
<b>3. Tasting</b>			
Hardness	Soft	1---2---3---4---5	Hard
Chewiness	A lot of chews	1---2---3---4---5	Few chews
Juiciness	Low	1---2---3---4---5	High
Texture defects			
Flavour quality	Not balanced	1---2---3---4---5	Balanced
Flavour intensity	Low or high intensity	1---2---3---4---5	Medium intensity
Perceived flavours			
Sexual odour	Not detected	Detected	

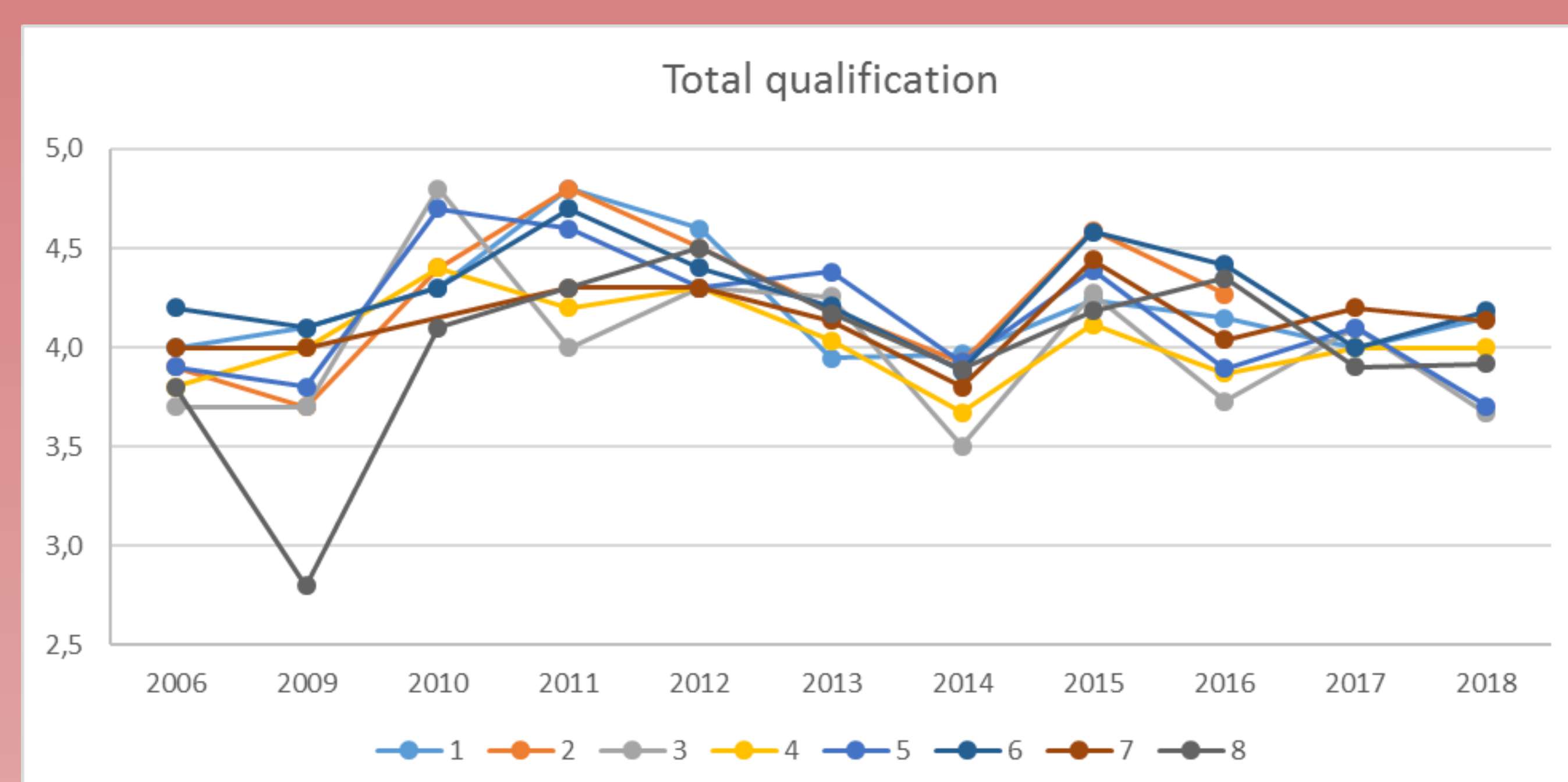
## Manufacturers



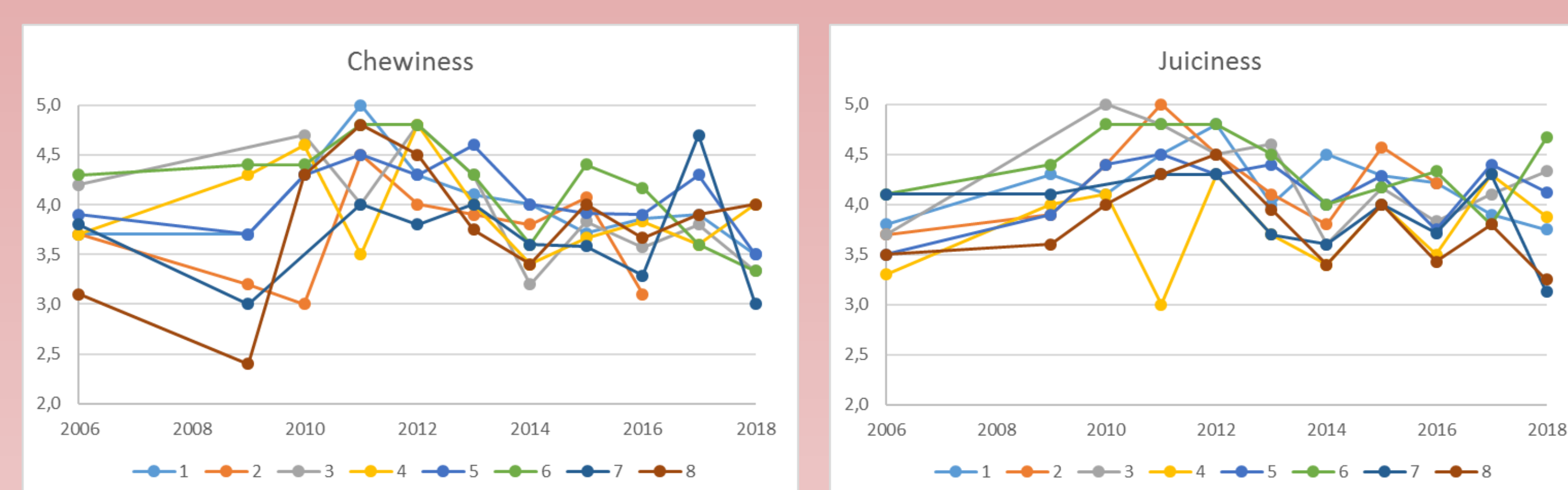
## RESULTS AND DISCUSSION

Panel 1 gave higher marks for all parameters, in accordance with previous reports which point out that a lack of harmonization and standardized training could result in some panels being stricter than others.

	Panel 1	Panel 2	p value
Quality of outer odour	4,03	3,95	0,412
Intensity of outer odour	4,11	4,01	0,333
Separation of the casing	4,54	4,34	0,053
Binding of the mass	4,47	4,26	0,032
Odour quality	4,38	4,24	0,107
Odour intensity	4,58	4,24	0,000
Hardness	3,97	3,81	0,187
Chewiness	4,10	3,81	0,006
Juiciness	4,19	4,00	0,035
Flavour quality	3,88	4,03	0,276
Flavour intensity	4,20	4,19	0,887
Total qualification	4,21	4,07	0,047



Significant differences between panels were also observed for chewiness and juiciness. The figures showed higher differences among manufacturers for panel 1, probably because there is no statement on how to check it



Despite the differences in performance between panels, significant differences among manufacturers were observed for the whole period studied.

	1	2	3	4	5	6	7	8	p
Quality of outer odour	4,2	4,2	3,8	3,9	3,8	4,0	4,1	3,9	0,148
Intensity of outer odour	4,1	4,2	4,0	4,0	4,1	4,0	4,1	4,1	0,944
Separation of the casing	4,2	4,6	4,5	4,2	4,5	4,6	4,5	4,5	0,220
Binding of the mass	4,3	4,6	4,2	4,4	4,3	4,5	4,4	4,1	0,456
Odour quality	4,5	4,4	4,0	4,3	4,3	4,5	4,3	4,2	0,203
Odour intensity	4,5	4,3	4,3	4,5	4,5	4,5	4,5	4,4	0,892
Hardness	4,1	3,8	3,6	3,8	4,0	4,1	4,0	3,7	0,467
Chewiness	4,0	3,7	4,0	4,0	4,1	4,2	3,7	3,9	0,149
Juiciness	4,2 <sup>a,b</sup>	4,2 <sup>a,b</sup>	4,2 <sup>a,b</sup>	3,8 <sup>a</sup>	4,1 <sup>a,b</sup>	4,4 <sup>b</sup>	4,0 <sup>a,b</sup>	3,8 <sup>a</sup>	0,001
Flavour quality	4,2 <sup>a,b</sup>	4,3 <sup>b</sup>	3,9 <sup>a,b</sup>	3,6 <sup>a,b</sup>	4,0 <sup>a,b</sup>	4,3 <sup>b</sup>	4,0 <sup>a,b</sup>	3,4 <sup>a</sup>	0,004
Flavour intensity	4,2	4,4	4,0	4,2	4,2	4,3	4,1	4,1	0,575
Total qualification	4,2	4,3	4,0	4,0	4,2	4,3	4,1	4,0	0,191

## Conclusions

In the light of the results and in agreement with the “Chorizo Zamorano” Regulatory Board, we have decided to change the sensory card to include more specific parameters and all of them and the way to determine it have been described in detail. Moreover, the new card includes a 10-point scales in which 1 referred to the minimum intensity and 9 to the maximum intensity for each of the parameters.

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