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Assessment of Sensory Quality of Calf Chops with Different Fat Cover by a Trained Panel using a Specific Sensory Method

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Electronic supplementary material (ESM)

Table S1. Description and overcoming criteria for parameters studied in assessor's qualification

Parameter	Description	Calculations	Overcoming criteria
Odour reference identification	ability to identify odour references used in the training	(number of references correctly identified/9) × 100	overcoming 66.67%
Repeatability in scores	ability to give the same or similar scores when the same sample is evaluated in replicate in the same session	$[(\mathrm{SDA}a + \mathrm{SDA}a2 + \mathrm{SDA}b1 + \mathrm{SDA}b2)_o + (\mathrm{SDA}a1 + \ldots)_t + (\mathrm{SDA}a1+\ldots)_f + (\mathrm{SDA}a1+ \ldots)_p]/16$ where: SDA – standard deviation averaged; *a*, *b* – samples; 1, 2 – session; *o* –odour; *t* – texture; *f* – flavour; *p* – persistence	final value ≤ 1.00
Reproducibility in scores	ability to give the same or similar scores when the same sample is evaluated in different sessions	$[(\lvert xa1 - xa2\rvert + \lvert xb1 - xb2\rvert)_o + (\lvert xa1 - xa2\rvert + \ldots)_t + (\lvert xa1 - xa2\rvert + \ldots)_f + (\lvert xa1 - xa2\rvert + \ldots)_p]/8$ where: *x* – score of the triplicate; 1, 2 – session; *a*, *b* – samples; *o* –odour; *t – texture; f – flavour; p* – persistence	final value ≤ 1.00 and needed to have overcome repeatability test
Discrimination ability in scores	ability to give different scores to samples of different quality regarding the sensory parameter studied	(1) determination of parameters discriminating among samples A and B for the panel by ANOVA. A parameter is considered discriminative when $P \leq 0.10$ (2) determination of parameters discriminating among samples A and B for each assessor. A parameter is discriminative when difference between A and B means is ≥ 0.50	at least 50% of the parameters discriminative for the panel must be discriminative for the assessor

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Table S1 to be contiued

Parameter	Description	Calculations	Overcoming criteria
Agreement with the panel in scores	ability to fit in with the panel when scoring	calculation for each sensory parameter individually: $(\|xaj - xap\| + \|xbj - xbp\|)/2$ where: x – score of all the scores for the sample; j, p – judge panel; a, b – samples	value for each of the four sensory parameters ≤ 1
Agreement with the panel in attribute identification	ability to fit in with the panel when identifying attributes	(1) for the panel as a whole, identification of the sensory situations found, separately for A and B samples, according to the following criteria: Attributes of odour, flavour and persistence with a CF ≥ 50%. In the case of liver and metallic sensation, it was considered uniquely the liver or metallic sensation citation, without considering the intensity degree (slight, obvious, excessive); Specific texture situations with CF ≥ 66.67% (unlike the other 3 parameters, for texture it was obligatory to indicate one situation for tenderness, another one for juiciness and another one for residue); If there are not a specific situation of tenderness, juiciness and residue reaching the 66.67%, two contiguous situations (for example a bit tenderness and medium tenderness) reaching together the 66.67% were also considered as cited situations (2) for each assessor, and separately for A and B samples, identification of the attributes identified, according to the same criteria (3) determination of the % of attributes found by the panel identified by each assessor. In the case of considering two contiguous situations of texture from the panel, the assessor's answer is correct if she/he cites one of them	attributes identified by the assessor ≥ 50% of the attributes identified by the panel

CF – citation frequency (times that an attribute is cited in a sample/maximum times that this attribute can be cited in a sample) × 100

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Table S2. Description and overcoming criteria for parameters studied in validation

Parameter	Description	Calculations	Overcoming criteria
Repeatability in scores	ability to give the same or similar scores when the same sample is evaluated in replicate in the same session	$[(SDAa1 + SDAa2 + SDAb1 + SDAb2)_o + (SDAa1 + ...)_t + (SDAa1 + ...)_f + (SDAa1 + ...)_p]/16$ where: SDA – standard deviation averaged considering panel means for the three replicates; *a*, *b* – samples; 1, 2 – session; *o* – odour; *t* – texture; *f* – flavour; *p* – persistence	final value ≤ 0.60
Reproducibility in scores	ability to give the same or similar scores when the same sample is evaluated in replicate in different sessions	$[(\|xa1 - xa2\| + \|xb1 - xb2\|)_o + (\|xa1 - xa2\| + ...)_t + (\|xa1 - xa2\| + ...)_f + (\|xa1 - xa2\| + ...)_p]/8$ where: *x* – mean score of the triplicate; *a, b* – samples; 1, 2 –session; *o* – odour; *t* – texture; *f* – flavour; *p* – persistence	final value ≤ 0.60
Reproducibility in discrimination ability in scores	ability to use the same parameters to differentiate two samples in different sessions	(1) determination of parameters discriminating among samples A and B in the 1st and in the 2nd session by ANOVA. A parameter is considered discriminative when $P \leq 0.10$	parameters discriminative in 2nd session must be at least 50% of the parameters discriminative in the 1st session and no more than 150% of the number of parameters discriminative in the 1st session
Repeatability in attribute identification	ability to identify the same attributes when the same sample is evaluated in replicate in the same session	(1) calculate the CF[1] of each attribute for each sample and for each replicate separately (2) identify the attributes and corresponding sample and session with a CF ≥ 50% for at least one of the three replications (As explained for qualification tests, for texture situations the CF used is 66.67% and, when there are not a specific situation of tenderness, juiciness and residue reaching the 66.67%, if two contiguous situations together reach it, they are included)	when there is an attribute in a replicate of a sample in a session with a CF ≥ 50%, the CF of the other replicates of this attribute for this sample in this session must not be lower than 50% of the highest CF for this attribute in this sample and this session. At least 66.67% of the total attributes identified must fulfill this criterion

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Table S2 to be contiued

Parameter	Description	Calculations	Overcoming criteria
Reproducibility in attribute identification	ability to identify the same attributes when the same sample is evaluated in different sessions	(1) calculate the CF of each attribute for each sample in each session separately (2) identify the attributes and corresponding sample and session with a CF ≥ 50% (For CF in texture situations idem as in repeatability in attribute identification)	when there is an attribute in a sample in a session with a CF ≥ 50%, the CF of this attribute for this sample in the other session must not be lower than 50% of the CF for this attribute in this sample in the referred session At least 66.67% of the total attributes identified must fulfill this criterion.
Reproducibility in discrimination ability in attribute identification	ability to use the same attributes to differentiate two samples in different sessions	(1) calculate the CF of each attribute for each sample in each session separately (2) identify the attributes and corresponding sample and session with a CF ≥ 50% (3) identify the attributes with a CF ≥ 50% for a sample and a CF < 50% for the other sample in the same session (for example CF = 79.2% in sample A and CF = 33.3% in sample B); this attribute is considered discriminative (4) check if this attribute is discriminative in the other session in the same direction	at least 66.7% of the attributes discriminative between A and B in a session must be discriminative (in the same direction) in the other session

[1]CF – citation frequency; (times that an attribute is cited in a sample/maximum times that this attribute can be cited in this sample) × 100