INFLUENCE OF TECHNOLOGICAL PARAMETERS ON THE SENSORY QUALITY OF SMOKED PORK CHOP SAMPLES

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Abstract

The importance of meat in consumption is due to its nutritional qualities, being a source of macronutrients, high-quality proteins and lipids, and highly bioavailable micronutrients such as iron, zinc, selenium, phosphorus, vitamin A and the B complex of vitamins. In addition to its nutritional quality, meat is also known for its sensory properties. The sensory quality of meat is determined by the technological processes the raw material undergoes, such as maturing, salting and heat treatments. By differentiating the parameters of the production technology (ageing time, salting degree, heat treatment time and temperature), the sensory differences between the experimental batches were investigated. The ageing time had a significant impact on the textural characteristics, the batches matured for 7 days showed lower hardness and higher juiciness. The heat treatment parameters (time and temperature) mainly influenced the aroma, imparting a slightly more intense burnt flavour to the batches subjected to the highest temperatures (P1 and P2). The rancid flavour had subunit mean scores for all six experimental batches produced, with no significant differences. For the colour attributes evaluated, no significant differences were observed between the experimental batches studied, the highest average were scores achieved by P5 (8.08 ± 0.310 points) for colour intensity and P2 (8.43 ± 0.383 points) for colour uniformity.

Key words: technology, pork specialities, sensory analysis

The European Union is the second-largest producer of pork meat (after China) and the largest exporter of pork and pork products (https://agridata.ec.europa.eu/extensions/DataPortal/pigmeat.html). Although chicken meat production is increasing, pork remains the most consumed meat globally (https://ourworldindata.org/meat-production).

Processing technologies in the meat industry are undergoing some changes and improvements due to increasing competitiveness as well as diversifying consumer demand (Weiss J. *et al*, 2010). During the storage period of processed meat products, lipid oxidation reactions occur, causing qualitative deterioration of colour, flavour, texture and nutritional properties (Zhang W. *et al*, 2010). The aim is thus to extend the shelf life of processed meat products by slowing down oxidative processes; the shelf life being defined as the period determined by the time when oxidation compounds are identified in the product that imparts rancid flavour or produces colour changes (Domínguez R. *et al*, 2019).

Consumption of different meat varieties differs according to the attitude and style of each consumer (Verbeke W. *et al*, 2010; Grunert K.G., 2005). Consumer`s attitude is an emotional or cognitive response based on personal experience or preconception of a product (Resano H. *et al*, 2011). Specific sensory evaluation techniques are used to measure, analyse and interpret human reactions. In the case of lean meat products, palatability has been defined by the parameters of tenderness, juiciness and flavour, which are associated with consumer acceptability (Miller R.K., 2017).

Sensory attributes such as taste, tenderness, colour and juiciness are largely influenced by the initial amount of water in the muscle and the hydration of the meat during processing or heat treatment (Warner R.D., 2017). During an intense heat treatment process, the process of water evaporation occurs, both in the surface layers and inside the product (van der Sman R.G.M., 2007; Warner R.D., 2017). Thus, meat can lose a significant amount of its original mass as juice, a process directly influenced by time and temperature parameters at which the heat treatment is performed (Martens H. *et al*, 1982; Warner R.D., 2017).

The sensory characteristics of meat are influenced by a multitude of factors, including technological ones, such as the degree of

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maturation of the meat, which mainly influences the tenderness of the finished product (Boișteanu P.C. *et al*, 2015).

The main aim of the research was to evaluate the sensory quality of some experimental batches of pork chops obtained in the meat processing microsection of Iasi University of Life Sciences. Another aim was to determine the influence of different technological parameters on the sensory quality of the obtained batches.

MATERIAL AND METHOD

The experimental batches formed were represented by six samples of pork chops. For the six samples of the experimental batches, technology sheets were drawn up differentiated by technological parameters of maturing, tenderising, smoking, boiling and cooking. Another differentiation between the experimental samples was the percentage of salt added, values that were recorded in the specific technology sheet for each batch.

The technological steps that led to the transformation of raw and auxiliary materials into finished products were: salting, maturing, hot smoking, boiling, drying/baking, cooling, packaging and storage.

After weighing the pieces of meat, the amount of salt to be added to each sample was calculated according to the technical datasheet. The experimental batches were subjected to dry salting with the following percentages added:

- 1.5% for experimental batch 1 (P1);
- 1.2% for experimental batch 2 (P2);
- 1.7% for experimental batch 3 (P3);
- 2.3% for experimental batch 4 (P4);
- 2.5% for experimental group 5 (P5);
- 2.0% for experimental group 6 (P6).

After seasoning and salting the meat pieces were placed in bags and vacuumed using the vacuum machine.

The maturation of the assortments was carried out by keeping them in a vacuum at refrigeration temperature for different periods, according to the following scheme:

-5 days for experimental batches P1 and P2;

-6 days for experimental batches P3 and P4;

-7 days for experimental batches P5 and P6.

The heat treatments were carried out in the INDU imax500 heat treatment cell and consisted of drying, smoke ignition, smoking, smoke quenching, boiling and finally baking/drying. The duration of smoking treatments was different for each batch, depending on the temperature inside the cell:

-the experimental batch P1 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 80°C); smoke ignition (for 5 minutes at 90°C); smoking (for 40 minutes at 90°C); boiling (for 90 minutes at 91°C); baking (for 20 minutes at 92°C);

-the experimental batch P2 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 82°C); smoke ignition (for 5 minutes at 82°C); smoking (for 40 minutes at 82°C); boiling (for 90 minutes at 83°C); baking (for 30 minutes at 89°C);

-the experimental batch P3 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 78°C); smoke ignition (for 5 minutes at 80°C); smoking (for 40 minutes at 80°C); boiling (for 150 minutes at 79°C); baking (for 20 minutes at 90°C);

-the experimental batch P4 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 72°C); smoke ignition (for 5 minutes at 73°C); smoking (for 40 minutes at 73°C); boiling (for 150 minutes at 70°C); baking (for 20 minutes at 89°C);

-the experimental batch P5 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 69°C); smoke ignition (for 5 minutes at 68°C); smoking (for 50 minutes at 68°C); boiling (for 3 hours at 68°C); baking (for 30 minutes at 85°C);

-the experimental batch P6 was subjected to the following treatments in the smoking cell: drying (for 60 minutes at 65°C); smoke ignition (for 5 minutes at 62°C); smoking (for 50 minutes at 62°C); boiling (for 3 hours at 65°C); baking (for 30 minutes at 82°C).

After finalizing the heat treatment, the finished products were cooled and stored at refrigeration temperature until the sensory evaluation was performed.

The sensory evaluation session involved specific operations of laboratory preparation, preparation of samples and evaluators, preparation of the questionnaires, actual evaluation/ application of questionnaires, collection and centralization of responses (Croitoru C., 2013).

The sensory analysis involved the evaluation of 15 parameters of colour, texture, aroma and taste on a 10-point linear scale by a group of 45 evaluators (n) in three tasting rounds.

According to the experimental protocol, the samples were coded and presented to the evaluators in blind, without any further information about the samples. All samples were presented identically to all evaluators, both in terms of containers, quantities and serving temperature (Issanchou S., 2018; Meilgaard M.C. *et al,* 2016).

A Student's 2-tailed t-test was used to interpret the results, which aimed to compare the experimental groups and determine the intensity of the differences perceived by the assessors.

RESULTS AND DISCUSSIONS

On the 10-point hedonic scale used for the sensory evaluation of the six experimental batches of pork chops, the averages of colour intensity were described between 7.66 ± 0.545 points (P3) and 8.08 ± 0.310 points (P5), and for the colour uniformity, samples were scored with mean values between 7.84 ± 0.588 (P3) and 8.43 ± 0.383 (P2). The differences identified between samples for the colour attribute were insignificant, with small exceptions between batches that were subjected to different maturation periods, where some significant differences were evident ($p<0.05$) *(table 1)*.

Table 1

Sensory descriptive parameters for the colour of the smoked pork chops

S	Parameter	B. no.	n	$\overline{X} \pm s_{\bar{x}}$	V%	Min - Max	Interpretation of differences (T-Test)			
COLOUR	Intensity of colour	P1	45	7.80±0.800	11.46	6-9	P1-P2	t=-0.63;	P1-P3	t=0.77; p=0.44 ^{ns}
		P2		7.91±0.582	9.65	7-9		p= 0.56^{ns}	P1-P5	t=-1.83; p=0.069 ^{ns}
		P3		7.66±0.545	9.633	6-9	P3-P4	t= -0.639;	P3-P5	t=-3.06; p=0.002**
		P4		7.77±0.813	11.59	6-9		p=0.52 ^{ns}	P2-P4	t=0.75; p=0.451 ^{ns}
		P5		8.08±0.310	6.884	7-9	P5-P6	t=0.968;	P2-P6	t=-0.28; p=0.779 ^{ns}
		P6		7.95±0.543	9.266	7-9		p=0.33 ^{ns}	P4-P6	t=-1.02; p=0.308 ^{ns}
	Uniformity of colour	P1	45	8.33±0.409	7.675	7-9	P1-P2	t=-0.78;	P1-P3	t=3.28; p=0.001**
		P2		8.43±0.383	7.337	7-9		p=0.43^{ns}	P1-P5	t=-0.44; p=0.659 ^{ns}
		P3		7.84±0.588	9.783	7-9	P3-P4	t=-0.67;	P3-P5	t=-3.66; p=0.0004**
		P4		7.95±0.634	10.01	7-9		p=0.50 ^{ns}	P2-P4	t=3.20; p=0.001**
		P5		8.39±0.421	7.731	7-9	P5-P6	t=1.14;	P2-P6	t=1.46; p=0.145 ^{ns}
		P6		8.22±0.585	9.309	7-9		p=0.25^{ns}	P4-P6	t=-1.61; p=0.108 ^{ns}

S. – Specification; B. no. – Batch number; n – number of evaluators; T- test (2-tailed) – for each analysed character, comparative on experimental batches: $^{ns.}$ insignificant differences ($p>0.05$); *significant differences ($p<0.05$);**distinct significant differences ($p<0.01$).

Regarding the texture of the samples, the following characteristics were evaluated: hardness, juiciness, fibrosity and elasticity. The mean scores for hardness ranged from 3.71±0.619 (P6) to 5.04±0.585 (P1), with the batches that had been matured for a longer period obtaining lower mean scores for hardness. There were no significant differences between batches subjected to the same maturing period, but distinctly significant differences were observed between batches in which both maturing and heat treatment parameters were differentiated. A direct correlation can be observed between hardness and juiciness, with samples scored with low averages for hardness obtaining favourable scores after juiciness evaluation.

Thus, the samples from lots P5 and P6 obtained the most favourable average scores, described by minimum hardness and fibrousness and high succulence and elasticity, followed in second place by the samples from lots P3 and P4 *(table 2)*.

Table 2

Sensory descriptive parameters for the texture of the smoked pork chops

S	Parameter	B. no.	n	$\overline{X} \pm s_{\bar{x}}$	V%	Min-Max	Interpretation of differences (T-Test)			
TEXTURE	Hardness	P1	45	5.04±0.585	15.21	4-6	P1-P2	t=0.48;	P1-P3	t=3.34; p=0.0012**
		P2		4.95±0.952	19.69	4-7		p=0.63 ^{ns}	P1-P5	t=7.64; p=3E-11**
		P3		4.46±0.754	19.44	3-6	P3-P4	t=1.32;	P3-P5	t=3.46; p=0.0009**
		P4		4.24±0.507	16.77	3-5		p=0.188 ^{ns}	P2-P4	t=3.94; p=0.0002**
		P5		3.91±0.401	16.19	3-5	P5-P6	t=1.32;	P2-P6	t=6.65; p=3E-09**
		P6		3.71±0.619	21.20	3-5		p=0.187 ^{ns}	P4-P6	t=3.37; p=0.0011**
	Juiciness	P1	45	5.36±0.234	9.039	5-6	P1-P2	t=-2.04;	P1-P3	t=-2.73; p=0.0078**
		P2		5.58±0.294	9.737	5-7		p=0.043*	P1-P5	t=-4.05; p=0.0001**
		P3		5.71±0.528	12.72	4-7	P3-P4	t=0.32;	P3-P5	t=-1.03; p=0.302 ^{ns}
		P4		5.67±0.318	9.954	5-7		p=0.746 ^{ns}	P2-P4	t=-0.76; p=0.448 ^{ns}
		P5		5.87±0.481	11.83	5-8	P5-P6	t=-0.63;	P2-P6	t=-3.02; p=0.0033**
		P6		5.96±0.407	10.71	5-7		p=0.528 ^{ns}	P4-P6	t=-2.27; p=0.025*
	Fibrosity	P1	45	6.35±0.234	7.617	6-7	P1-P2	t=3.21;	P1-P3	t=14.95; p=7E-26**
		P2		5.97±0.386	10.39	5-7		p=0.0018**	P1-P5	t=16.51; p=2E-28**
		P3		4.84±0.225	9.797	4-6	P3-P4	t=0.87;	P3-P5	t=1.14; p=0.256 ^{ns}
		P4		4.75±0.234	10.17	4-6		p=0.381 ^{ns}	P2-P4	t=10.41; p=1E-16**
		P5		4.73±0.200	9.448	4-5	P5-P6	t=2.20;	P2-P6	t=12.28; p=2E-20**
		P6		4.51±0.256	11.20	4-5		p=0.029*	P4-P6	t=2.34; p=0.021*
	Elasticity	P1	45	3.24±0.188	13.39	3-4	P1-P2	t=-1.58;	P1-P3	t=-11.46; p=5E-9**
		P2		3.4±0.245	14.57	3-4		p=0.177 ^{ns}	P1-P5	t=-21.75; p=4E-37**
		P3		4.35±0.234	11.11	4-5	P3-P4	t=-4.93;	P3-P5	t=-9.27; p=1E-14**
		P4		4.93±0.381	12.52	4-6		p=4E-06**	P2-P4	t=-12.99; p=9E-22**
		P5		5.26±0.2	8.491	5-6	P5-P6	t=-0.90;	P2-P6	t=-18.94; p=9E-33**
		P6		5.35±0.234	9.039	5-6		p=0.368 ^{ns}	P4-P6	t=-3.608; p=0.0005**

S. – Specification; B. no. – Batch number; n – number of evaluators; T- test (2-tailed) – for each analysed character, comparative on experimental batches: $^{ns.}$ insignificant differences ($p>0.05$); *significant differences ($p<0.05$);**distinct significant differences ($p<0.01$).

Taking into account that raw meat does not have or has only blood-like aroma, the products from the experimental batches developed its aroma and flavors after the heat treatment. During this process, volatile compounds are formed which imprint the flavour specific to the type of heat treatment applied.

Following the technological process to which they were subjected, the flavour intensity of the six experimental batches was described by mean scores ranging from 5.53 ± 0.436 points (P1) to 6.82±0. 922 points (P5). The metallic and burnt aromas were the the most intensely identified flavours, described by close mean scores, respectively in the range 1.11 ± 0.237 (P4) - 2.15 ± 0.316 (P1) for metallic flavour and 0.71 ± 0.482 (P6) - 2.11 ± 0.328 (P1) for burnt flavour.

In the sensory evaluation, the rancid flavour obtained average subunit scores ranging from 0.08 ± 0.082 points (P6) to 0.48 ± 0.255 points (P1), with distinctly significant differences only between samples subjected to different technologies in terms of both maturation period and heat treatment applied *(table 3).*

Table 3

Sensory descriptive parameters for the flavour of the smoked pork chops

S	Parameter	B. no.	n	$\overline{X} \pm s_{\overline{x}}$	V%	Min - Max	Interpretation of differences (T-Test)			
AROMA	Intensity of aroma	P1	45	5.53±0.436	11.93	4-6	P1-P2	t=-0.81;	P1-P3	t=-7.36; p=1.25E-10**
		P2		5.66±0.772	15.51	5-7		p=0.418^{ns}	P1-P5	t=-7.41; p=1.25E-10**
		P3		6.44±0.252	7.798	6-7	P3-P4	t=2.16;	P3-P5	t=-2.33; p=0.022*
		P4		6.22±0.222	7.576	6-7		p=0.033*	P2-P4	t=-3.73; p=0.0003**
		P5		6.82±0.922	14.07	6-8	P5-P6	t=0.65;	P2-P6	t=-6.49; p=6.58E-09**
		P6		6.71±0.391	9.328	6-8		p=0.58 ^{ns}	P4-P6	t=-4.18; p=7.12E-05**
	Metallic aroma	P1	45	2.15±0.316	26.08	1-3	P1-P2	t=4.86;	P1-P3	t=2.40; p=0.018*
		P2		2.13±0.572	35.47	1-3		p=0.85 ^{ns}	P1-P5	t=3.94; p=0.0001**
		P3		1.8±.0663	45.25	0-3	P3-P4	t=4.86;	P3-P5	t=0.48; p-=0.631 ^{ns}
		P4		1.11±0.237	43.84	0-2		p=6E-06**	P2-P4	t=7.61; p=6.32E-11**
		P5		1.73±0.2	25.80	1-2	P5-P6	t=4.87;	P2-P6	t=6.53; p=4.19E-09**
		P6		1.13±0.481	61.24	0-2		p=6E-06**	P4-P6	t=-0.17; p=0.86 ^{ns}
	Burnt aroma	P1	45	2.11±0.328	27.14	1-3	P1-P2	t=1.89;	P1-P3	t=6.75; p=1.59E-09**
		P2		1.91±0.173	21.81	1-3		p=0.062^{ns}	P1-P5	t=9.37; p=6.9E-15**
		P3		1.35±0.234	35.71	1-2	P3-P4	t=1.67;	P3-P5	t=-3.60; p=0.0005**
		P4		1.15±0.407	55.21	0-2		p =0.098^{ns}	P2-P4	t=6.65; p=3.96E-09**
		P5		0.93±0.381	66.20	0-2	P5-P6	t=1.603;	P2-P6	t=9.93; p=3.89E-15**
		P6		0.71±0.482	97.71	0-2		p=0.113^{ns}	P4-P6	t=3.16; p=0.002**
	Rancid aroma	P1	45	0.48±0.255	103.4	0-1	P1-P2	t=1.05;	P1-P3	t=2.99; p=0.004 **
		P2		0.37±0.240	129.7	0-1		p=0.292^{ns}	P1-P5	t=2.58; p=0.011*
		P3		0.2±0.163	202.2	0-1	P3-P4	t=1.15;	P3-P5	t=-0.23; p=0.810 ^{ns}
		P4		0.11±0.101	286.0	0-1		p=0.249^{ns}	P2-P4	t=3.06; p=0.003**
		P5		0.22±0.222	212.1	0-2	P5-P6	t=1.61;	P2-P6	t=3.40; p=0.001**
		P6		0.08±0.082	323.7	0-1		p=0.110^{ns}	P4-P6	t=0.34; p=0.728 ^{ns}

S. – Specification; B. no. – Batch number; n – number of evaluators; T- test (2-tailed) – for each analysed character, comparative on experimental batches: $^{ns.}$ insignificant differences ($p>0.05$); *significant differences ($p<0.05$);**distinct significant differences ($p<0.01$).

The taste of the experimental batches was evaluated in terms of the 5 basic tastes: salty, sweet, bitter, sour and umami. Taste is defined as the chemical sensation produced by a substance that reacts with taste receptor cells in the taste buds. The sensation is then transferred through chemical reaction to the central nervous system (Ramalingam V. *et al*, 2019).

In this study, the salty taste was the strongest identified among the six experimental batches, with mean values between 1.82 ± 0.285 points for P1 and 5.53 ± 0.572 points for P5. The samples showed distinctly significant differences that were correlated with the different percentages of salt added in each batch. The next taste identified by the evaluators was sweetness, with samples P1 and P2 being described with the highest mean scores, 3.37 ± 0.876 points and 3.08 ± 1.355 points respectively.

Umami has gained public attention and recognition as a primary taste, being produced by substances as glutamate, aminoacids and nucleotides the taste induces salivation and is described as meaty and brothy (Cecchini M.P. *et al,* 2019; Ngapo T.M, Vachon L, 2016). The umami taste was described with mean scores for the six experimental batches ranging from 1.75 ± 0.188 points for the batch P1 to 3.04 ±0.861 points for P6. The most poorly identified tastes, described by corresponding mean scores, were sour and bitter, with maximum mean scores of 1.24 ± 0.188 points and respectively 0.42 ± 0.522 points, with insignificant differences (p>0.05) between the experimental samples in most cases *(table 4).*

Table 4

Sensory descriptive parameters for the taste of the smoked pork chops

S	Parameter	B. no.	n	$\overline{X} \pm s_{\overline{x}}$	V%	Min - Max	Interpretation of differences (T-Test)			
TASTE	Sweet taste	P1	45	3.37±0.876	27.721	2-4	P1-P2	t=1.29;	P1-P3	t=8.16; p=2E-12**
		P2		3.08±1.355	37.692	2-5		p=0.198^{ns}	P1-P5	t=8.40; p=7E-13**
		P3		1.86±0.663	43.641	1-3	P3-P4	t=2.32;	P3-P5	t=0.83; p=0.405 ^{ns}
		P4		1.48±0.528	48.816	1-3		p=0.023*	P2-P4	t=7.82; p=3E-11**
		P5		1.71±0.891	55.193	0-3	P5-P6	t=-1.67;	P2-P6	t=4.65; p=1E-05**
		P6		2.04±0.907	46.584	1-3		p=0.099^{ns}	P4-P6	t=-3.11; p=0.003**
	Acid taste	P1	45	0.68±0.401	91.923	0-2	P1-P2	t=-0.73;	P1-P3	t=-1.47; p=0.145 ^{ns}
		P2		0.77±0.267	66.519	0-2		p=0.468^{ns}	P1-P5	t=-4.85; p=6E-06**
		P3		0.91±0.628	86.997	0-2	P3-P4	t=-1.18;	P3-P5	t=-2.47; p=0.016*
		P4		1.08±0.401	58.155	0-2		p=0.243^{ns}	P2-P4	t=-2.55; p=0.012*
		P5		1.24±0.188	34.924	1-2	P5-P6	t=0.88;	P2-P6	t=-3.45; p=9E-04**
		P6		1.15±0.270	45.025	0-2		p=0.382 ^{ns}	P4-P6	t=-0.55; p=0.587 ^{ns}
	Bitter taste	P1	45	0.26±0.200	167.70	0-1	P1-P2	t=1.20;	P1-P3	t=1.009; p=0.316 ^{ns}
		P2		0.15±0.178	272.58	0-2		p=0.230^{ns}	P1-P5	t=-0.57; p=0.568 ^{ns}
		P3		0.17±0.149	217.48	0-1	P3-P4	t=0.576;	P3-P5	t=-1.4; p=0.167 ^{ns}
		P4		0.13±0.118	257.83	0-1		p=0.566^{ns}	P2-P4	t=0.273; p=0.785 ^{ns}
		P5		0.33±0.409	191.88	0-2	P5-P6	t=-0.62;	P2-P6	t=-2.4; p=0.036*
		P6		0.42±0.522	171.15	0-2		p=0.538^{ns}	P4-P6	t=-2.42; p=0.018*
	Salty taste	P1	45	1.82±0.285	29.340	1-3	P1-P2	t=-0.98;	P1-P3	t=-6.77; p=2E-09**
		P2		1.91±0.082	15.059	1-2		p=0.33^{ns}	P1-P5	t=-26.9; p=9E-41**
		P3		2.82±0.694	29.538	2-4	P3-P4	t=-16.5;	P3-P5	t=-16.2; p=6E-28**
		P4		5.24±0.279	10.086	4-6		p=2E-26**	P2-P4	t=-37.1; p=7E-47**
		P5		5.53±0.572	13.676	5-7	P5-P6	t=5.61;	P2-P6	t=-40.5; p=2E-55**
		P6		4.82±0.149	8.0179	4-5		p=4E-07**	P4-P6	t=4.32; p=4E-05**
	Umami taste	P1	45	1.75±0.188	24.756	1-2	P1-P2	t=-1.98;	P1-P3	t=-10.5; p=3E-17**
		P2		1.95±0.270	26.606	1-3		p=0.051^{ns}	P1-P5	t=-7.38; p=5E-10**
		P3		2.73±0.2	16.361	2-3	P3-P4	t=2.58;	P3-P5	t=-1.01; p=0.318 ^{ns}
		P4		2.37±0.649	33.893	1-3		p=0.012*	P2-P4	t=-2.95; p=0.004**
		P5		2.88±0.873	32.356	2-4	P5-P6	t=-0.79;	P2-P6	t=-6.86; p=2E-09**
		P6		3.04±0.861	30.489	2-4		p=0.43^{ns}	P4-P6	t=-3.64; p=5E-04**

S. – Specification; B. no. – Batch number; n – number of evaluators; T- test (2-tailed) – for each analysed character, comparative on experimental batches: $^{ns.}$ insignificant differences ($p>0.05$); *significant differences ($p<0.05$);**distinct significant differences ($p<0.01$).

CONCLUSIONS

The study presents the results obtained from the sensory evaluation of six experimental batches of pork chops obtained with different parameters for some of the technological processes: salting, maturing, drying, hot smoking, boiling, drying/cooking.

Taking into account the differentiation of the maturation period for the experimental batches formed, it could be observed that the samples with a shorter maturation time showed higher hardness and fibrousness, while at the opposite pole, those with a longer maturation were juicier, showing also a slightly higher elasticity. Moreover, experimental batches P5 and P6 showed higher average scores for the flavour intensity attribute, as well as lower metallic flavour.

Regarding the heat treatment parameters, an attempt was made to correctly correlate temperature with smoking time, with batches being subjected to decreasing temperatures from 90°C (P1) to 65°C (P6). Thus, although mean scores were low, even subunit (in the case of rancid flavour), more pronounced burnt and rancid flavours were identified in batches subjected to higher temperatures during heat treatment.

Although distinctly significant differences were identified between the experimental batches for some of the attributes evaluated, all samples showed qualitatively consistent characteristics.

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