

The effect of the addition of a commercial bioprotector in characteristics of “alheira” made from Alentejano pig meat

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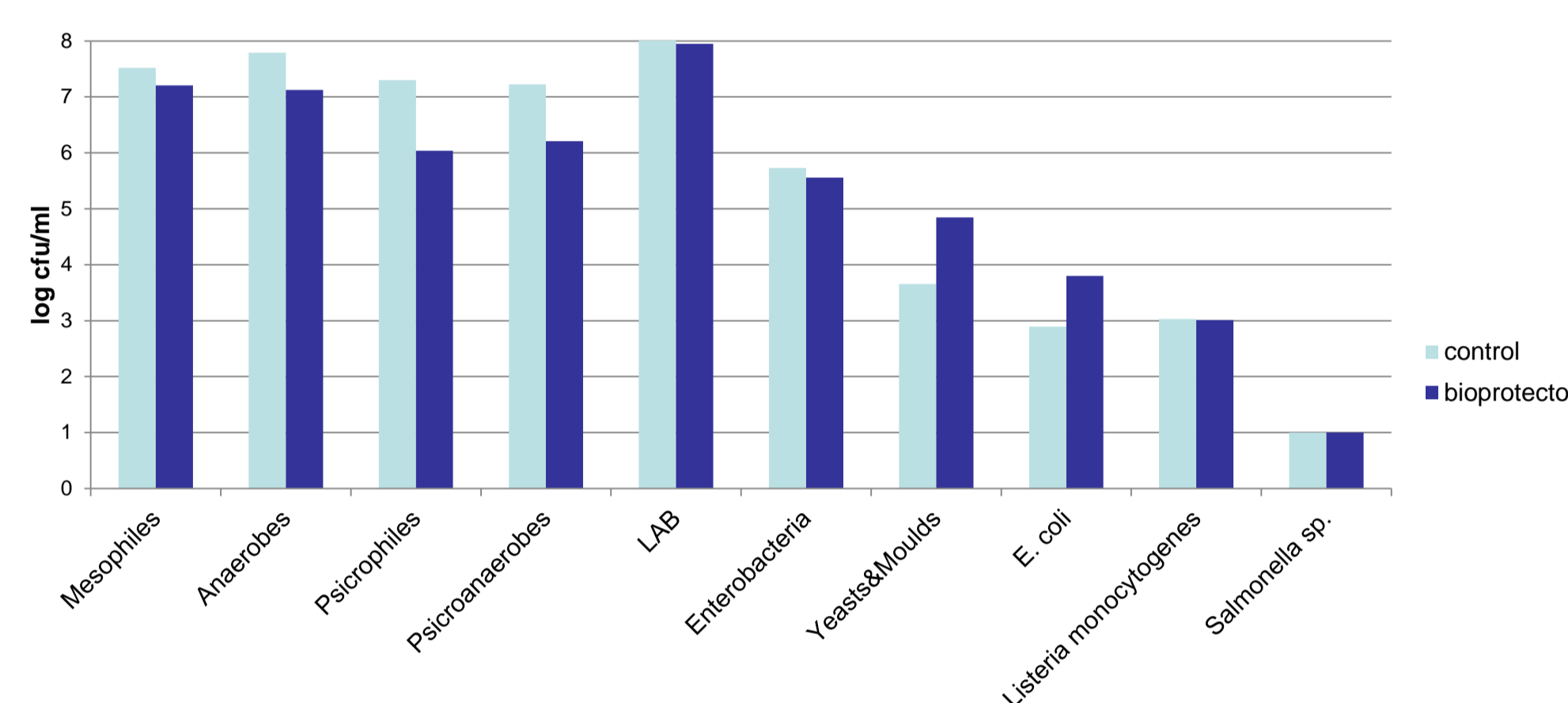
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Aims

- To evaluate the use of a commercial bioprotector in the physicochemical, microbiological and instrumental texture parameters, as well as in the sensory attributes of the “alheiras”

RESULTS

Microbiological analyses



The “alheiras” microbiological flora showed no significant differences regarding total mesophiles, total anaerobes, lactic acid bacteria, enterobacteria, *Escherichia coli* and *Listeria* spp. The counts of psychrophiles (2×10^7 cfu/g) and psychrophilic anaerobes (1.7×10^7 cfu/g) were higher in the control treatment, whereas more yeasts and moulds (7×10^4 cfu/g) are present in the “alheiras” with bioprotector. No contamination with *Salmonella* sp. was detected, but some samples showed a minor contamination with *Listeria monocytogenes*. Further studies are in course to reduce microbial contamination, particularly to eradicate *L. monocytogenes* [2].

Texture Profile Analysis (TPA)

	Control		Bioprotector	
	mean	st. dev.	mean	st. dev.
Hardness	31.50	5.33	30.96	7.68
Adhesiveness	-0.39	0.24	-0.20	0.14
Cohesiveness	0.50	0.03	0.51	0.03
Springiness	0.49	0.02	0.46	0.04
Resilience	0.17	0.01	0.18	0.01
Chewiness	7.63	1.47	7.29	2.04

Texture Profile Analysis (TPA) results revealed that the adhesiveness of the bioprotector “alheiras” (-0.386 N s) is lower than in the control (-0.2 N s). However, no significant differences were observed for other instrumental texture parameters.

Conclusions

The main goal of using bioprotector was to improve product safety. However, not only was that aim not fulfilled, but furthermore the sensory quality of the “alheiras” was reduced, mainly through the presence of off flavours, probably due to the lower pH.

No advantage was found in the bioprotector “alheiras”, considering the end product at three days shelf life.

Introduction



“Alheira” is a traditional fermented sausage usually produced from poultry meat. A new product was developed at a Portuguese traditional meat plant using Alentejano pig breed meat [1].

Materials & Methods

Control “alheiras” were compared with “alheiras” treated with bioprotector.

Three end product “alheiras” with three days shelf life were used per treatment.

Microbiological and physical parameters

- Microbiological analyses according to the ISO standards
- aw and pH measurements according to the Norma Portuguesa NP-3441

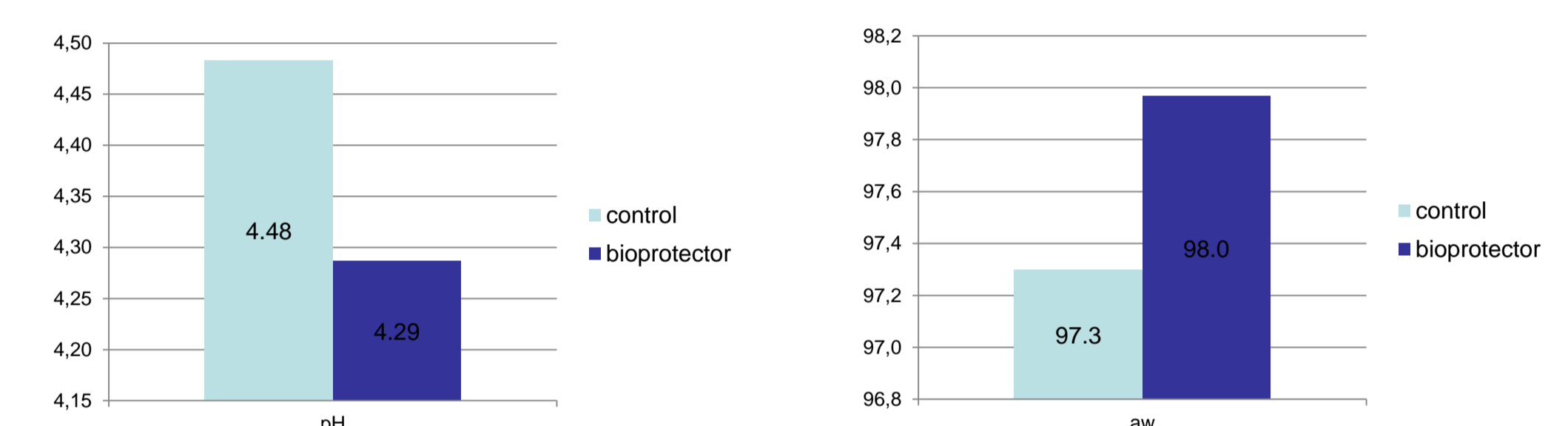
Sensory evaluation:

- Descriptive/quantitative analysis
- Scale from 1 to 100
- 10 trained panellists

Texture Profile Analysis (TPA):

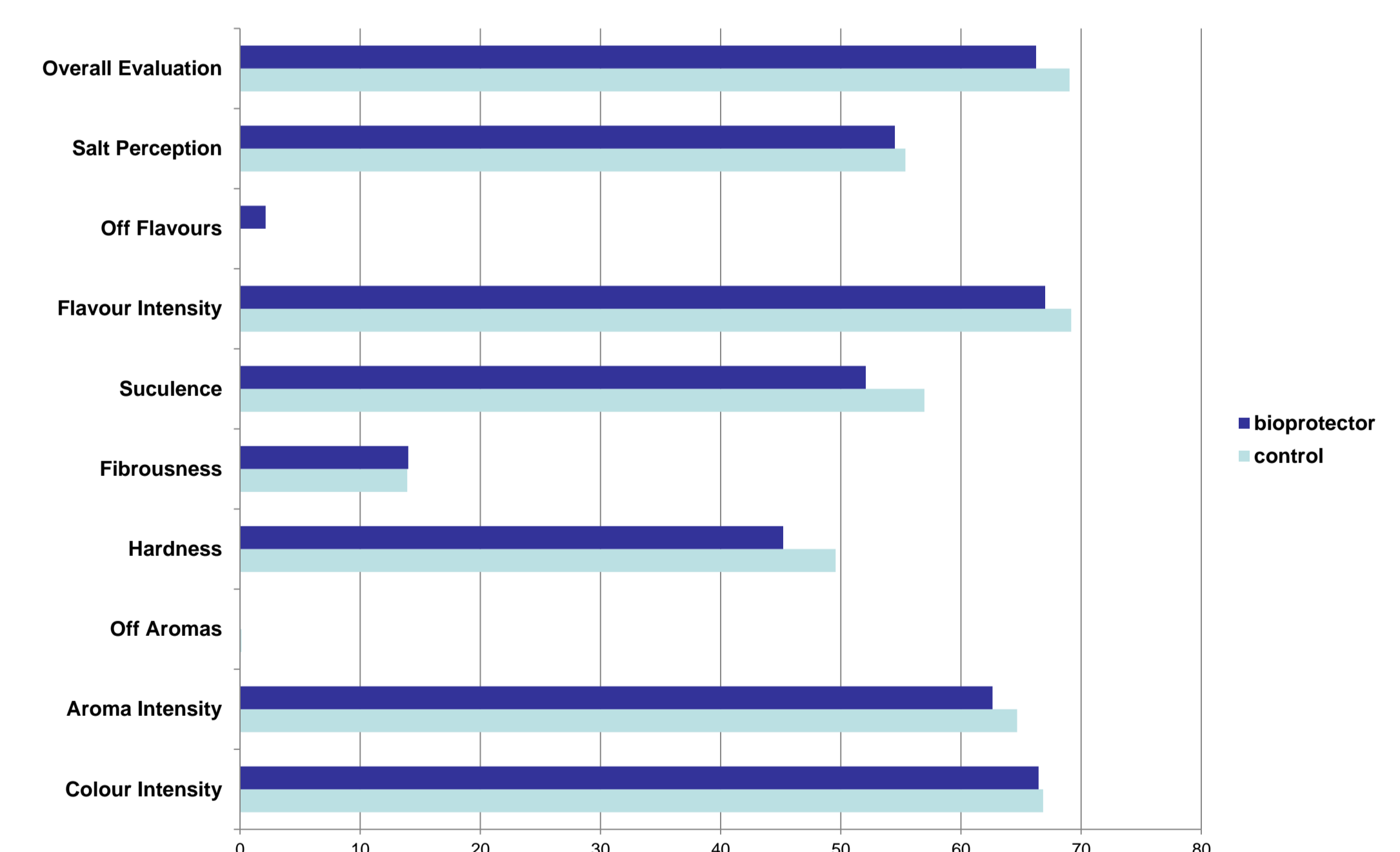
- Using a Stable Micro System TA-Hdi
- Compress platen (10cm diameter)
- Cylindrical samples with 3.5 cm diameter/1 cm height, compressed twice to 50% of the initial height

pH & aw



The pH of the “alheiras” with bioprotector (4.29) was lower than the pH of the control treatment (4.48). However, no significant differences were observed between control and bioprotector regarding water activity (a_w).

Sensory Analysis



Regarding sensory analysis, although no differences were observed between control and bioprotector “alheiras”, panellists noticed some off flavours in the bioprotector treatment.

References

[1] Elias, M. et al. (2013) “Portuguese traditional sausage, “alheira”, made with different meat: sensory evaluation and texture.” ICoMST 2013 E-Book of Proceedings. 59th International Congress of Meat Science and Technology. Izmir, Turkey. 18-23 August 2013.

[2] Felício et al. (2011) “Thermal inactivation of *Listeria monocytogenes* from alheiras, traditional portuguese sausage during cooking.” *Food Control* 22. 1960-1964.

Acknowledgements

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