

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

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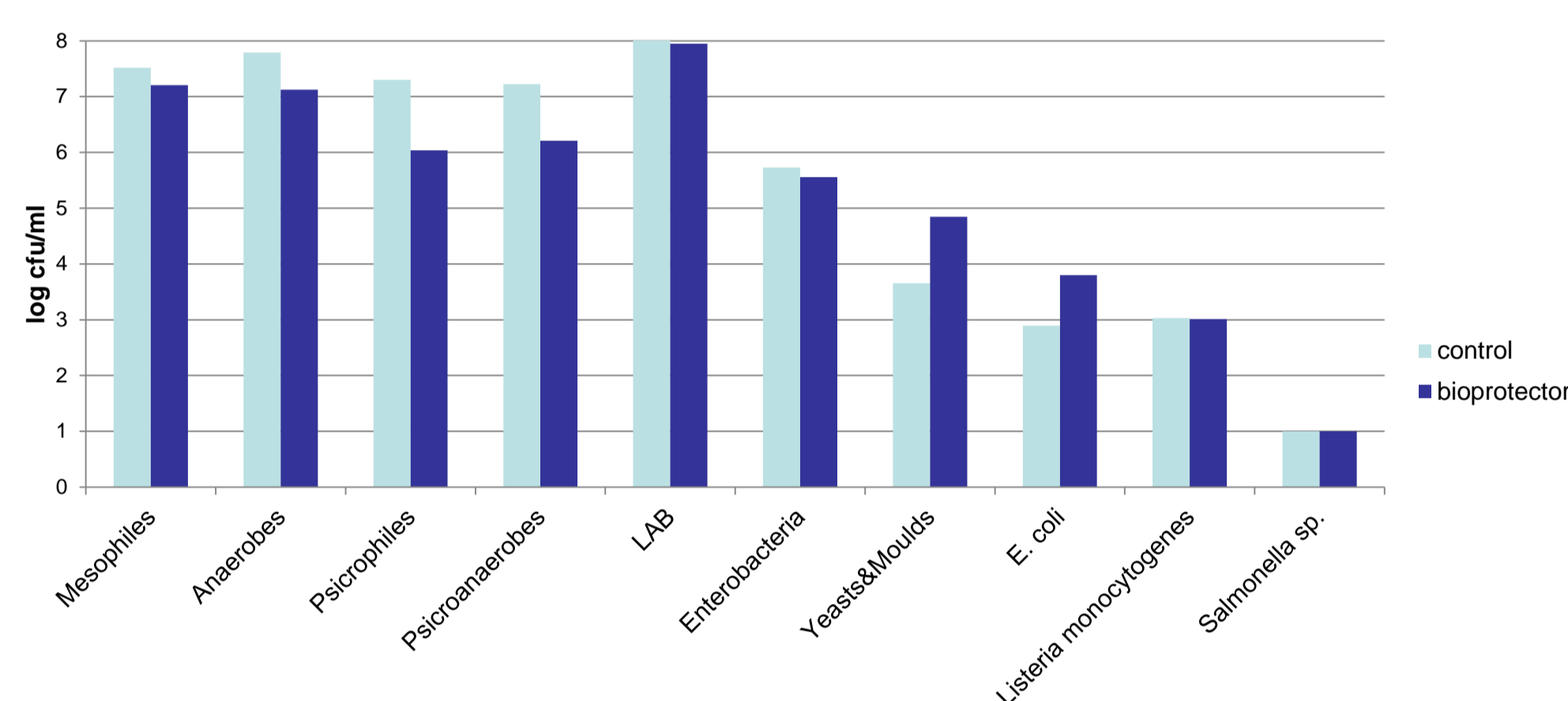
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## Aims

- 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 ( $2 \times 10^7$  cfu/g) and psychrophilic anaerobes ( $1.7 \times 10^7$  cfu/g) were higher in the control treatment, whereas more yeasts and moulds ( $7 \times 10^4$  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

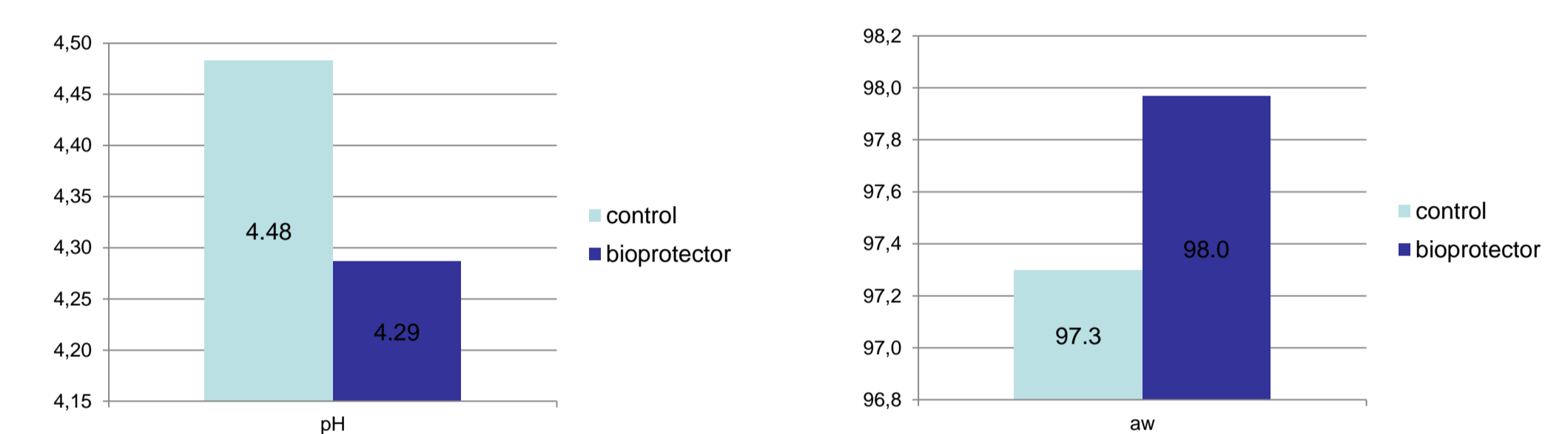
### Sensory evaluation:

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

### Texture Profile Analysis (TPA):

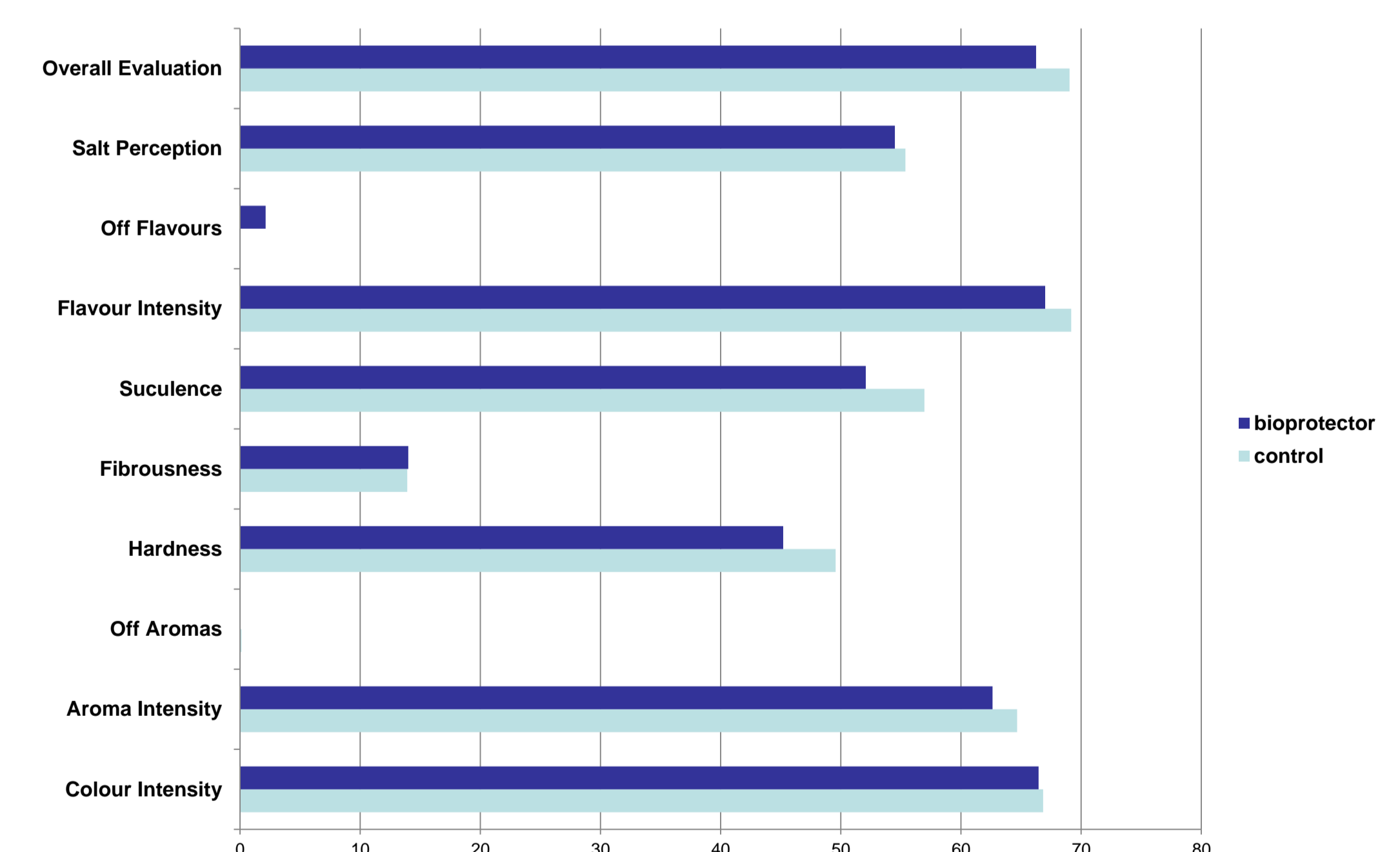
- Using a Stable Micro System TA-Hdi
- Compress platen (10cm diameter)
- Cylindrical samples with 3.5 cm diameter/1 cm height, compressed twice to 50% of the initial height

### 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.

## Acknowledgements

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## References

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