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Assessment of chemical, physico-chemical and sensorial properties of frankfurters- type sausages added with roselle (*Hibiscus sabdariffa* L.), extracts

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Objective

The aim of this work was to determine the effect of roselle (*Hibiscus sabdariffa* L.) extracts addition on chemical, physico-chemical, and sensorial properties of frankfurters-type sausages.



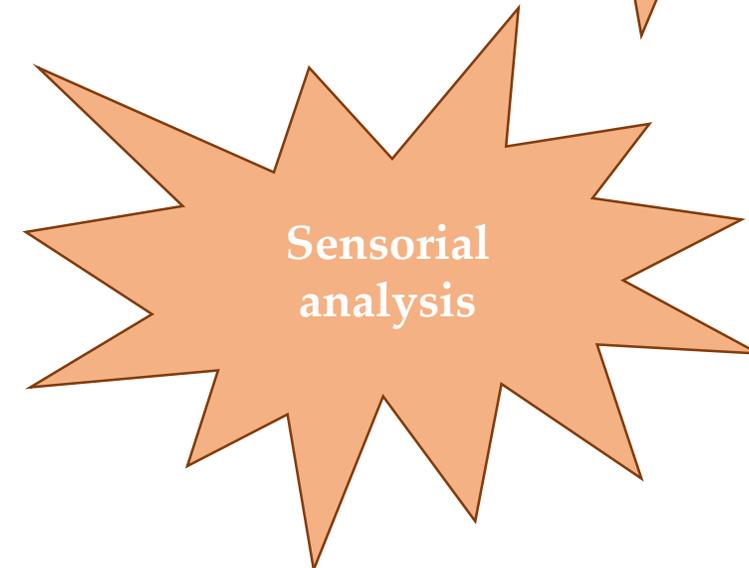
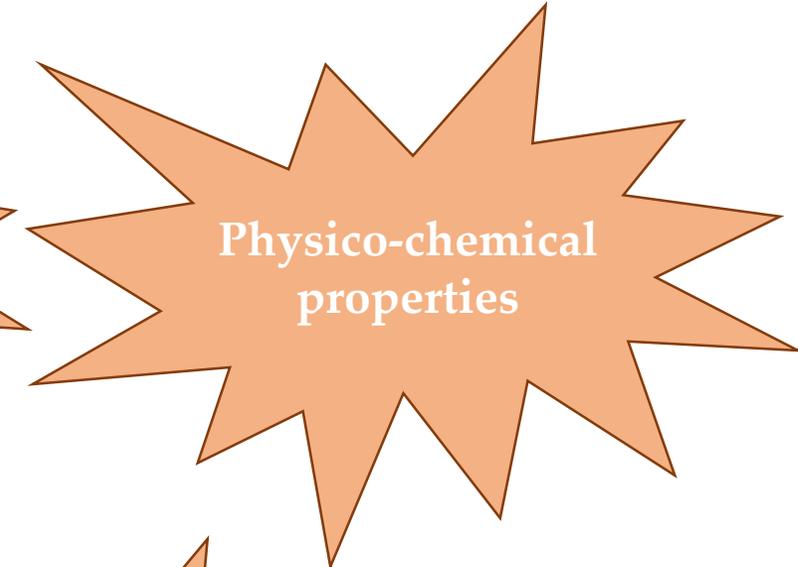
Material and Methods



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Ingredients (g/100g)	CS	FRE4	FRE8
Lean Pork Trim	57.17	57.17	57.17
Pork backfat	24.50	24.50	24.50
Ice	12.25	8.17	4.08
Roselle extract	---	4.08	8.17
Salt	2.04	2.04	2.04
Corn starch	1.23	1.23	1.23
Potato peel flour	1.23	1.23	1.23
Caseinate	1.23	1.23	1.23
Smoke	0.080	0.080	0.080
Sodium ascorbate	0.025	0.025	0.025
Sodium Tripolyphosphate	0.020	0.020	0.020
Sodium nitrite	0.015	0.015	0.015
White pepper	0.16	0.16	0.16
Nutmeg powder	0.04	0.04	0.04

CS: Control sample, FRE4: frankfurter +4% roselle extract; FRE8: frankfurter +8% roselle extract.



Results

Proximate composition

	Moisture	Ash	Proteins	Fat
CS	64.34±1.13 ^a	2.39±0.01 ^a	17.97±0.27 ^{ab}	13.28±1.56 ^a
FRE4	61.70±0.83 ^a	2.35±0.02 ^a	18.07±0.27 ^a	14.29±0.75 ^a
FRE8	63.01±0.96 ^a	2.41±0.10 ^a	17.08±0.02 ^b	13.61±0.76 ^a

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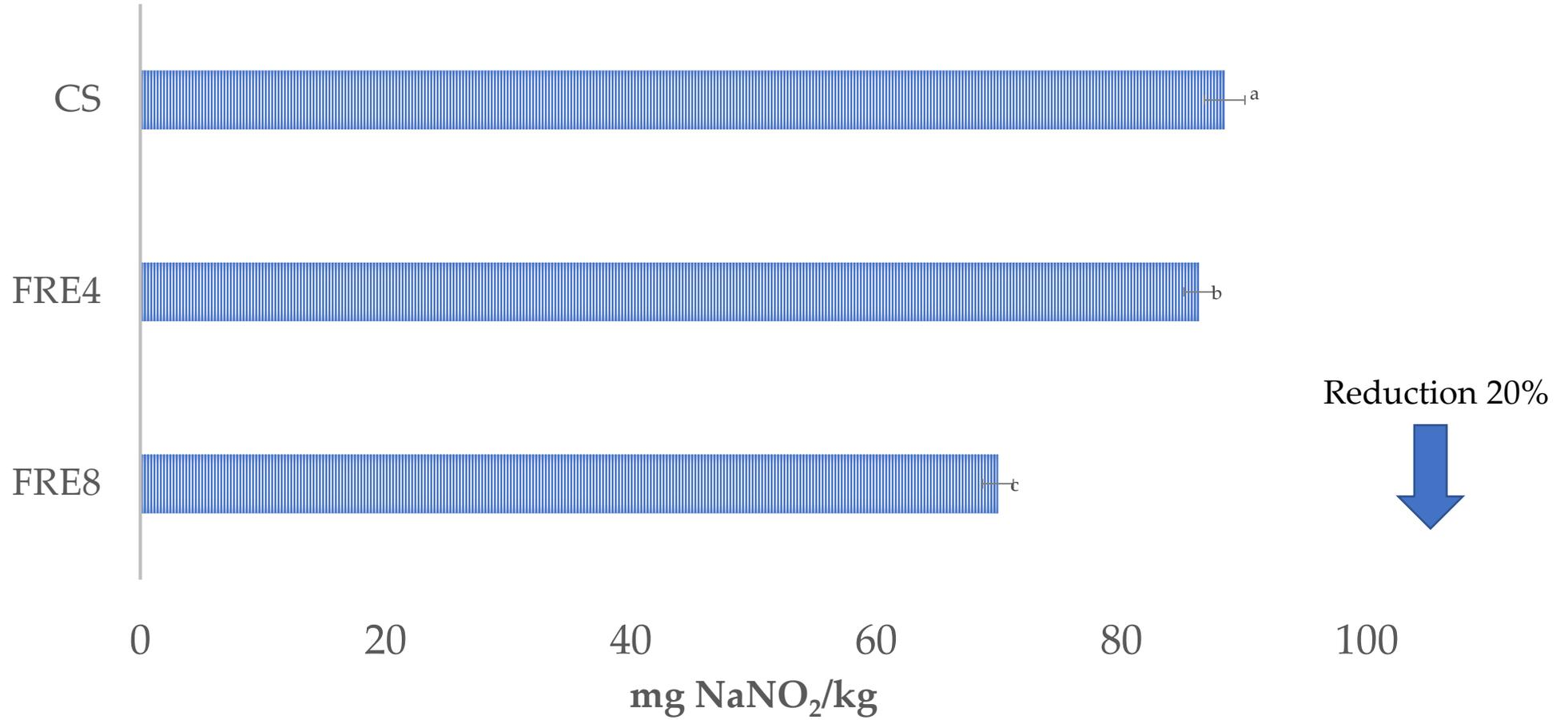
Physico-chemical properties

	Emulsion stability	pH	Aw
CS	98.18 ± 0.45 ^a	6.04 ± 0.01 ^a	0.97 ± 0.00 ^a
FRE4	99.28 ± 0.34 ^a	5.83 ± 0.03 ^b	0.96 ± 0.00 ^a
FRE8	99.28 ± 0.44 ^a	5.71 ± 0.02 ^c	0.96 ± 0.00 ^a

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Results

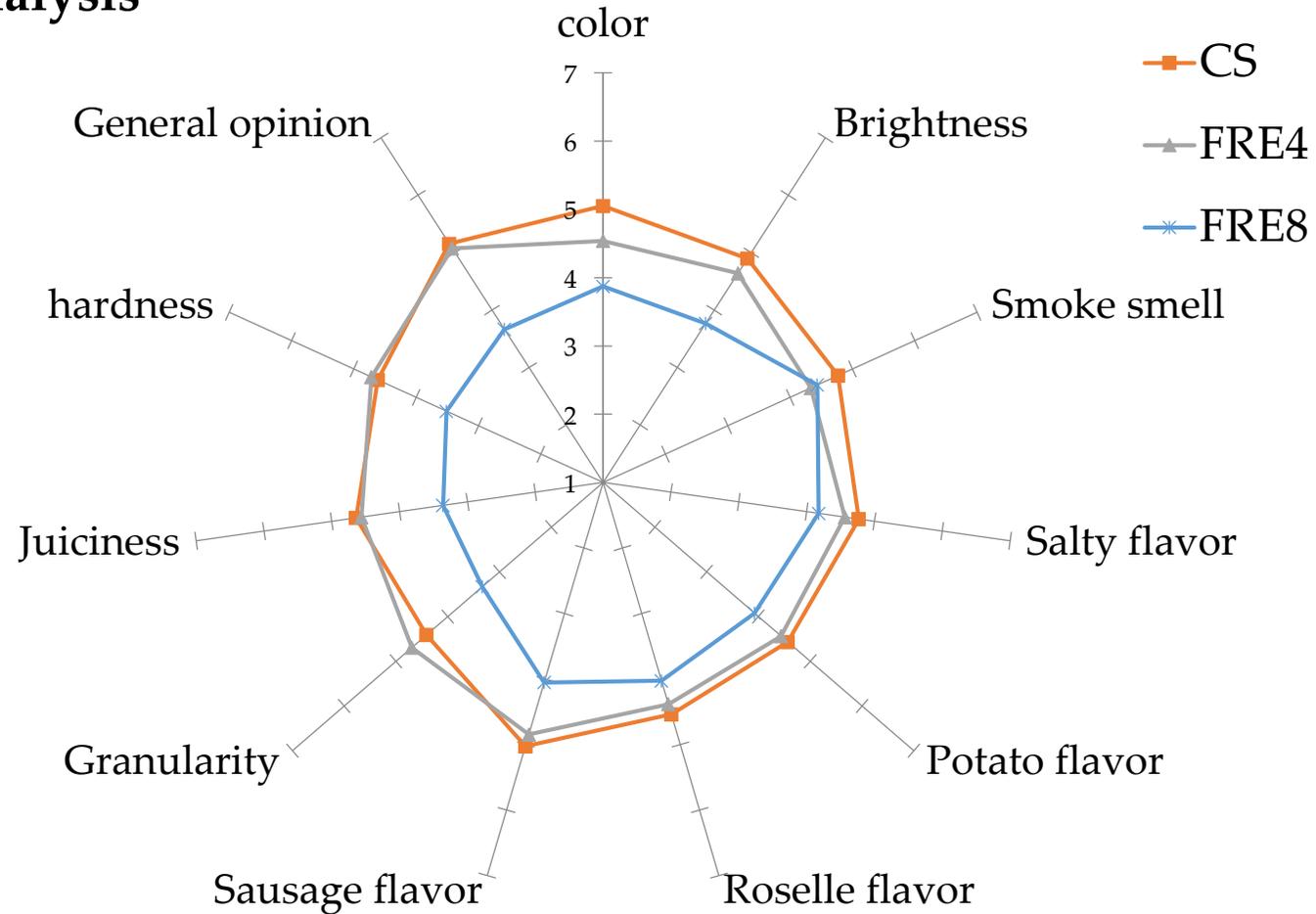
Residual Nitrite content



CS: Control sample, FRE4: frankfurter +4% roselle extract; FRE8: frankfurter +8% roselle extract.

Results

Sensorial analysis



CS: Control sample, FRE4: frankfurter +4% roselles extract; FRE8: frankfurter +8% roselles extract.

Conclusions

This study suggests that the reformulation of Frankfurt-type sausages using roselle extracts is feasible and represents a viable alternative to improve the safety and the nutritional composition of the final product without adversely affecting the technological properties