



Meat products containing hydrolysed by-products – a health perspective

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INTRODUCTION

Meat products showing health-promoting bioactivity have promising potential in efforts to reduce the constantly increasing number of people suffering from hypertension. When producing healthy foods, it is equally important that the eating quality is high, and this might be a challenge with hydrolysates in general, since these may result in chemical and/or bitter flavour characteristics.

The aim of this study was to evaluate the eating quality of traditional Danish meat products with added hydrolysates. The meat products were assessed both by a trained sensory panel and by Danish consumers.

MATERIAL AND METHODS

Bioactivity (ACE-inhibition)

- Hydrolysed pork greaves were tested for anti-hypertensive activity [1].

Sensory evaluation

- Trained panel performed a sensory profile analysis.
- Consumers evaluated the meat products according to the degree of associations.

CONCLUSION

The consumers rated salami and wiener sausage with added hydrolysate as being equally or more appetizing than the reference. This underlines the potential that lies in the application of hydrolysate as a health-promoting ingredient.

RESULTS

BIOACTIVITY

ANTI-HYPERTENSIVE ACTIVITY FOR HYDROLYSED PORK GREAVES AND CARNOSINE

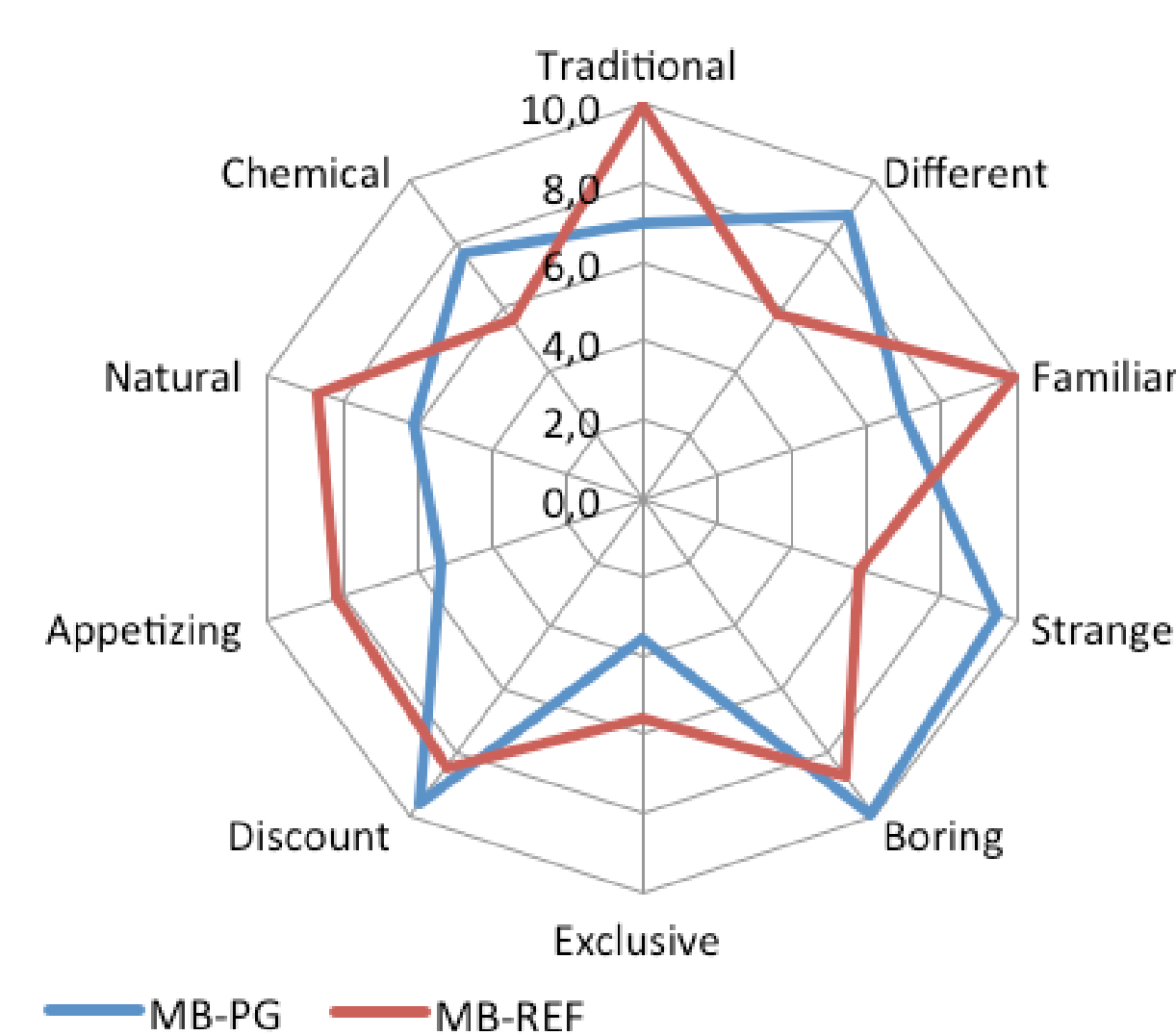
	IC ₅₀ (mg/ml hydrolysate)
Pork greaves	10
Carnosine	14

IC₅₀ is the concentration needed for a 50% inhibition of the ACE enzyme central to blood pressure regulation. The lower the concentration, the higher the activity.

SENSORY

Sensory profile of the meat products with added hydrolysed pork greaves (PG). Selected attributes are shown.

	LIVER PASTE		SALAMI		WIENER SAUSAGE		MEAT BALL				
	PG	REF	PG	REF	PG	REF	PG	REF			
ODOR											
LIVER	5.1	6.2	Salami	5.8	8.4	Spicy	6.0	7.2	Meatball	3.4	7.2
SPICY	5.1	5.6	Sour	4.8	6.4	Smoked	6.3	9.0	Onion	2.9	5.7
BURNT	3.4	0.6	Off	3.7	0.5	Off	5.7	1.2	Off	5.2	0.7
FLAVOR											
LIVER	5.9	4.9	Salami	5.7	8.3	Smoked	5.9	9.1	Meatball	3.3	7.5
SPICY	5.2	5.2	Smoked	5.4	6.5	Spicy	7.1	8.3	Onion	3.4	5.9
SALT	2.2	1.9	Salt	5.8	7.7	Salt	8.6	7.9	Salt	5.0	4.8
BITTER	5.6	4.3	Bitter	5.8	3.2	Bitter	6.2	3.1	Bitter	5.9	2.3
OFF	2.7	1.8	Off	5.2	0.5	Off	7.0	1.5	Off	7.3	1.0



85 consumers evaluated meat balls (MB-PG, meat ball with hydrolysed pork greaves, MB-REF, meat ball reference)

There was a clear increase in off-flavour in the products with added PG compared with the corresponding references. Though, liver paste was one exception with only a small increase in off-flavour due to the addition of PG.

Overall it can be seen that meat balls with added hydrolysed pork greaves are rated lowest on positive words (e.g. exclusive, appetizing) and highest on negative words (e.g. discount, chemical). This indicates clearly that meat balls are not “the happy home” for hydrolysed pork greaves. On the other hand the wiener sausage with added hydrolysed pork greaves was more appetizing than the reference (data not shown).

Reference
1. Ahhmed, A. M. & Muguruma, M. (2010). A review of meat protein hydrolysates and hypertension. *Meat Science* 86: 110-118.



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