



# Combining meat protein with plant protein in classic Danish meat products

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## INTRODUCTION

Both consumers, politicians and a large number of companies have increased their focus on sustainability, and there is an increasing demand for climate neutral products and products that can be part of a circular life cycle. Food is under great scrutiny, as changed purchasing habits from consumers have helped to influence the companies' shopping habits and supply. A way for traditional Danish meat products to meet these new habits and demands is to combine plant protein and meat protein.

## AIM

The overall aim of the study was to develop a classic Danish meat product in which a significant part of the meat protein was replaced by plant protein, without compromising the nutritional or sensory quality of the product.

## MATERIAL AND METHODS

Texturized vegetable protein products from pea protein were obtained during extrusion cooking and used to replace 10%, 30%, or 50% of meat proteins in wieners with 10% fat and 2% NaCl. 50% of the sausages were exposed to smoke (10 min, 60°C) after cooking. The sausages were investigated for changes in the sensory attributes texture and taste. The nutritional value was evaluated based on amino acid score.

## CONCLUSION

It is possible to substitute 30% of the meat protein with plant protein and still have products of good eating, nutritional\* and technological quality. Texture is the most challenging attribute. Taste can be masked or partly masked using smoke.

## RESULTS

Pork-plant sausages with the highest concentration of texturized vegetable proteins had significantly lower ( $P < 0.05$ ) firmness, cohesiveness, gumminess, chewing time\*, and chewing residual\*, but significantly higher ( $P < 0.05$ ) grittiness than the other pork sausages. For 30% substitution a slightly decreased firmness and gumminess, increased grittiness was found, Figure 1.

The taste and flavour of the sausages were affected by the substitution of meat proteins with pea protein, with a decrease in meat flavour and an increase in bitterness and pea flavour. Smoke partly masked the pea flavour while bitterness was not reduced by the smoke\*.

\*Results not shown

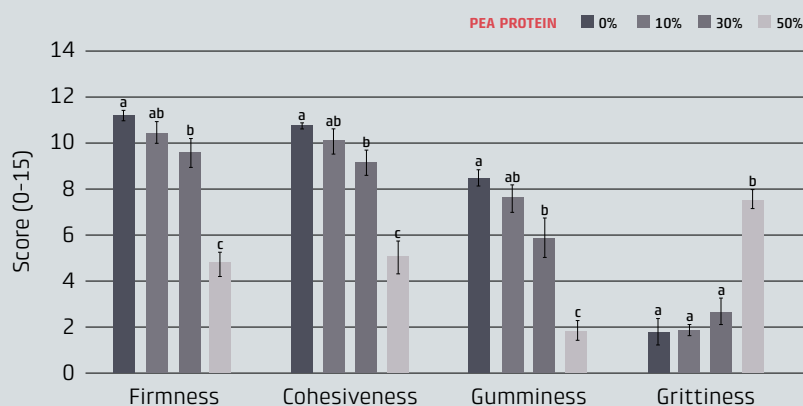


Figure 1: Sensory analysis of pork-plant sausages.

## CONTACT INFORMATION



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