



Meat processing dilemma: soy protein isolates or poultry protein isolates?

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Project timeline: October 2011 – September 2014

Summary

Producing high quality soy-free meat products is a challenge facing modern poultry processors.

The present study investigated the potential of a meat-derived protein ingredient (poultry protein isolate, PPI) to substitute soy protein isolate (SPI) in poultry meat products.

Problem

Soybean-derived protein isolates (SPI), are used in processed meat products to increase water and fat retention.

However, soy protein isolates:

- Are non-meat protein ingredients,
- Can induce allergic reactions,
- Can lead to undesirable off-flavors.

Therefore, new food ingredients that can substitute for SPI need to be found.

Our Approach

Poultry protein isolates were prepared through the pH-shifting process:

- Mechanically separated turkey meat (MSTM) was first homogenized,
- Proteins were then solubilized at acidic pH,
- Soluble proteins were precipitated.



Figure 1. Production of PPI through the pH-shifting process

Turkey bologna, marinated chicken breasts and chicken burgers were produced using different amounts of PPI.



Figure 2. Poultry meat products containing PPI

Our Observations

- Products formulated with both PPI and SPI had similar textural properties.
- Consumers did not find any difference between samples prepared with PPI or SPI for all the sensory attributes analyzed.

What Does this mean?

- PPI can potentially substitute for SPI in poultry meat products.
- Low levels of PPI are sufficient to produce high quality poultry meat products.

Acknowledgements

This project is supported by funds provided by:



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