



Recovery of Muscle Proteins from Underutilized Poultry Meat

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Summary

Muscle protein extraction from “low value” poultry meat has been receiving increased attention.

“Low value” poultry meat includes dark meat, spent layers and broiler breeder meat which are considered underutilized. One attempt to make use of poultry dark muscle is to extract the proteins using alkaline solubilization processing.

Problem

With the increasing demand for further processed breast meat products, poultry dark muscle has been considered as a major underutilized commodity. Color, high fat content and poor shelf life are the main concerns with “low value” poultry meat, and all affect consumer selection and satisfaction.

One of the attempts to increase the utilization of poultry dark muscle is to recover myofibrillar proteins and separate them from pigments and fat to increase their utilization for the preparation of further processed meat products. Thus, the production of a protein isolate which can be used in the manufacture of biopolymer films and also as a meat binder for further processed meat products has received increased attention.

Our Approach

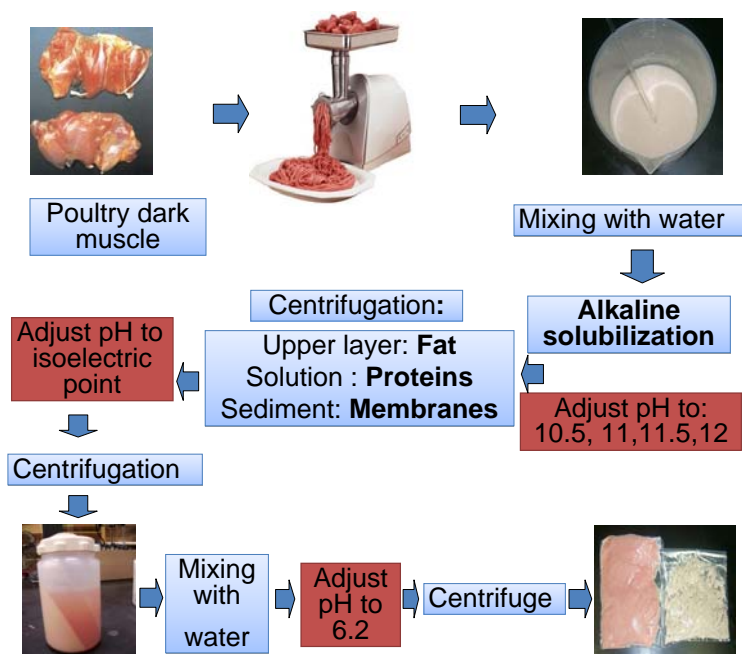


Figure 1. Schematic diagram of protein extraction process



Figure 2. Poultry dark meat(left) in comparison with protein isolate (right)

Our Observations

- ❖ Protein yield increased from 81.3% to 94.2% from extraction pH 10.5 to pH 12.
- ❖ Around 50% of the fat was removed from poultry dark meat by alkaline solubilization.
- ❖ On average, the fat content of the extracted meat was 3.0%.
- ❖ Total heme pigments content of the protein isolate was decreased to values comparable to those found in the breast meat (0.6 mg/g).

What does this mean?

The low fat, light colored protein isolate which has been produced from underutilized poultry dark muscle using alkaline extraction opens doors for the meat industry to utilize “low value” poultry meat. Good yield of extraction is the key advantage of the alkaline solubilization technique. Polar fat removal and stability of the final product merits further research. Possible applications for the protein isolate can be as a new ingredient for further processed meat products.

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