2019 Reciprocal Meat Conference– Meat and Poultry Quality and Composition-Measurement and Prediction

Meat and Muscle Biology™

# Influence of Utilizing Breast Meat Afflicted with Woody Breast Myopathy on Sausage Textural Properties

M. Rigdon[1]*, A. M. Stelzleni[1], B. Bowker[2], H. Zhuang[2], T. D. Pringle[1], and H. Thippareddi[3]

[1]Department of Animal and Dairy Science, University of Georgia, Athens, GA, USA
[2]Agriculture Research Service, USDA, University of Georgia, Athens, GA, USA
[3]Department of Poultry Science, University of Georgia, Athens, GA, USA
*Corresponding author. Email: mrigdon@uga.edu (M. Rigdon)

**Keywords:** broiler, color, sausage, texture, woody breast
Meat and Muscle Biology 3(2):110

## Objectives

Woody breast (WB) myopathy reduces the utility and value of breast meat for the broiler industry. It is hypothesized that WB meat may be included in comminuted products to increase utility and ultimately add value to the broiler industry. Information on the textural and quality characteristics that WB inclusion has on further processed products is limited in the literature. The objective of this research was to evaluate the quality of sausage made with WB meat of varying degrees of severity.

## Materials and Methods

For each of three replications, broiler breast meat (normal, moderate WB, and severe WB) and chicken abdominal fat were obtained from a commercial poultry processor. Breast meat was coarse ground (19-mm) and combined with fat (targeting 15%) to produce 10-kg batches representing 25, 50, and 100% moderate WB meat, 25, 50, 100% severe WB meat, and a 100% normal control. The batches were then re-ground (4.8-mm), mixed for 1 min with 1.5% salt, and stuffed into 35-mm natural casings. Links were placed in individual bags, cooked to 70°C in a water-bath, and allowed to cool to room temperature before hardness, cohesiveness, springiness, gumminess, and chewiness were evaluated using texture profile analysis. Individual sausage links were weighed before and after cooking and cook loss was calculated. Data were analyzed using SAS version 9.3 with a fixed effects design with replication as a random effect.

## Results

Sausage hardness tended to be softer ($P = 0.06$) as WB inclusion rate and severity increased. Cohesiveness and springiness values were similar between treatments ($P = 0.53$, $P = 0.95$, respectively). Gumminess decreased ($P < 0.05$) as severity and inclusion of WB increased indicating a lack of bind, which was further supported by the decline in chewiness ($P < 0.05$). The raw 25% moderate WB and 50% severe WB sausage links were similar in lightness values (L*) to the normal sausage links. In cooked sausage, 25% and 50% inclusion of WB meat regardless of severity were similar in lightness values (L*) compared to the 100% normal formulations.

## Conclusion

With no difference in cook loss ($P = 0.08$), the data presented indicates that moderate and severe WB meat can be included in the formulation of linked sausages to increase utility and value of broiler WB meat.