

ONTARIO VETERINARY COLLEGE
Project Proposal Form:
Summer Research Assistantship



1. BASIC INFORMATION

Advisor Name: Leonardo Susta

Department: Pathobiology

Proposed Start Date: 2019-05-01

CONTACT INFORMATION FOR STUDENT APPLICATIONS

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2. DETAILS OF PROJECT

Title of Proposed Project:

Determination of prevalence and severity of breast muscle myopathies in Ontario broilers.

Outline of Proposed Research Project (please keep concise, approximately ½ page or less):

Recently, numerous reports have indicated a significant increase in the incidence of myopathies in broilers, which are defined as Wooden Breast Syndrome (WB) and White Striation (WS). These are characterized by multifocal loss of myofibres associated with markedly increased amount of fibrous tissue in the breast muscle of broiler chickens (35-45 days old). The fibrous tissue affects the tactile characteristics of the raw breast fillet, causing negative consumer perception and meat downgrading at the processing plant. The estimated prevalence of WB and WS ranges from 5 to 10%, translating in a conservative estimate of \$200 million losses annually for the US poultry industry alone. Canada is no exception, and anecdotally both syndromes have been reported with associated economical damage. However, systematic studies regarding the prevalence of WB and WS across Canada have not been conducted, and estimated prevalence figures remain unknown, limiting an accurate assessment of the negative impact of WB and WS on the Canadian poultry industry.

The objective of this study is to determine the prevalence of WB and WS, as well as the type and severity of associated microscopic lesions, in breast fillets from selected Ontario processing plants.

The candidate will be working closely with a PhD student leading the project, and will contribute to: 1) Organize a database of historical data from processing plants, in order to estimate the prevalence of WB and WS throughout the years; 2) Help process breast fillets that are brought into the lab, by carrying out hematoxylin and eosin staining, and additional histochemical staining for presence of fibrous tissue in the fillet (Masson's Trichrome); 3) Perform image analysis on processed sections in order to quantify the amount of fibrous tissue present in affected fillets and grade severity of observed lesions. At the completion of this assistantship, the student will have become familiar with several aspects of the poultry industry, avian pathology and epidemiology. The operational cost of this research is provided by an OMAFRA-UofG grant.

3. AVAILABLE ASSISTANTSHIPS

Select assistantship most relevant to the proposed research project (multiple boxes may be checked).
Please note restrictions.

- Dr. Robert W. Woolner Summer Student Research Funding:**
Projects in *small animal veterinary medicine*
- Andrea Leger Dunbar Summer Research Assistantship:**
- James and Marjorie Pinkney Research Scholarship:**
Projects in *animal health and welfare*
- OVC Research Support Services Assistantship:**
Projects in *veterinary medicine or biomedical sciences*
- OMAFRA Summer Research Assistantship:**
Projects *addressing OMAFRA research priorities*