

## Abstract

**Background:** Pet owners spend billions of dollars a year on pet food and treats. Since 2018, there have been at least 21 instances of cat food recalls, predominately as a result of potential microbial contamination. Additional concerns related to the safety of pet food include product mislabeling, adulteration, and ingredient substitution. In cats, ingredient substitution can have a major impact on food trials and allergy control, since the culprit allergen can be accidentally or intentionally put into the product.

Guaranteed analysis of crude protein (minimum), crude fat (minimum), crude fiber (maximum) and moisture (maximum) are required on pet food labels. A study reviewing the guaranteed analysis of pet foods submitted to food laboratories in 5 states observed that the guaranteed and measured concentrations of nutrients were significantly different.

In preliminary work on canned cat food and other pet products including dog chews and canned dog food, we have shown that use of routine light microscopy can be successfully used to architecturally assess the composition of food products. This method of analysis has also been shown in foods for human consumption including hamburgers, hotdogs, street meats, and chicken nuggets.

**Hypothesis/Objectives:** The aim of this project is to assess the architectural composition and select nutritional analysis (moisture, ash) of canned cat food. *The specific aims of this proposal are to 1) histologically evaluate canned cat food products to determine product composition and 2) perform moisture and ash analysis to evaluate nutritional components of the products.* We will compare the results of our analyses to the product labeling (guaranteed analysis and ingredient list).

**Study Design and Methods:** *Products:* To achieve our goal of determining what is in canned cat food, we will process 10 different canned cat food products. For each product we will obtain 5 representative samples from each can. In total 50 samples will be analyzed. These products will be purchased from pet stores and online retailers. Moisture will be determined using a loss-on-drying method (microwave moisture analyzer) and ash will be measured using a microwave method. Histopathology will be performed to identify tissue types found within the foods. Results will be compared to the product labeling. The summer scholar will perform all aspects of this analysis.

**Expected Results:** We expect to determine whether or not significant differences in moisture or ash content of canned cat food exist when compared to product labeling. We expect to identify large amounts of byproducts in each of the cat foods compared to muscle.

**Potential Impact for Animal Health:** Food safety and quality are extremely important for pet owners. Prospective evaluation of the content in canned cat food will provide insight to the accuracy of the product labeling and provide evidence that histology can be used as a method to assess the composition of canned cat food as companies argue that histology cannot be used for this type of analysis.