**Statistical Design Consulting**

**SEMESTER REPORT**

**Spring 2024**

**Client:** Joshua Martin  **File Number:** 24-001

**Department:** Food Science **Major Prof:**

**Consultant:** Youha Shin **Initial Meeting Date:** 1/17/2024

**Meeting Attendees:** Joshua Martin, Dr. Bruce Craig, Youha Shin, Sumeeth Guda (observer)

**Statement of Problem:** To assess the impact of different doses of an antimicrobial agent on Listeria monocytogenes (LM) growth in food products.

**Goal of This Project:** Industry Partnership

**Background:**

The project involves an industry partnership and is under an NDA. It aims to evaluate the effectiveness of various concentrations of an antimicrobial agent in controlling Listeria monocytogenes (LM) in a food matrix. The study entails measuring bacterial growth (CFU/g) across different antimicrobial levels, with samples collected every few days over a couple of weeks. The data analysis will be conducted using JMP software, and the client is interested in learning how to perform these analyses independently in future projects.

**Progress During Current Semester:**

The consultant and client met for training regarding usage of JMP software. The consultant also provided factorial analysis that explored the interactions between time and inoculum level, using both R and SAS to verify the results.

Afterwards, the consultant provided the multiple comparisons post-hoc results in a format that the client had used previously when presenting to the industry partner. Afterwards, the client noted that they had all the materials that they needed for the presentation and expressed satisfaction with the conclusion of the project.

**Current Status:** Concluded.