



important opportunistic pathogen and has been known to cause severe infections in humans. There is no evidence that species of \_\_\_\_\_ associated with food spoilage cause infections in humans, but its role in the spoilage of meat products is worth investigating. It is a psychrophilic microorganism that can cause spoilage at refrigeration temperatures and can survive chlorine wash treatments. Therefore, the objective of the project is to investigate various methods to control bacterial spoilage in poultry.

Investigate the ability of \_\_\_\_\_ strains to cause chicken spoilage. Various strains of \_\_\_\_\_ have been isolated from various areas, including portions of chicken. These strains will be investigated for their potential to cause food spoilage.

# \_\_\_\_\_ rinses of poultry carcasses at harvest to determine the effect on various spoilage organisms. The effect of antimicrobial rinses on meat quality will also be evaluated.

Dr. Clarke was able to secure freshly slaughtered chicken carcasses from a small abattoir in Versailles, Missouri (Figure 1) that will supply us with 54 chicken carcasses. We collected 18 chicken carcasses per week and repeated the shelf life study three times.

We randomly divided 18 chicken carcasses and treated the carcasses with a 50 ppm chlorine wash, 2% lactic acid wash, and drinking water as a

The coliform count should be tested before treatment to draw more conclusions from the results. Lactic acid bacteria are generally associated with food spoilage and this is an indicator that they generally survive chlorine treatments. It should also be remembered that total bacterial counts were generally very low. This should be repeated to test the efficacy of the methods. We were unable to identify the species \_\_\_\_\_ or \_\_\_\_\_ from any of the carcasses of chickens. They may not be present in the US poultry setting, or sampling methods need to be amended to isolate bacterial strains.

The rest of the chicken samples will be processed by a \_\_\_\_\_ student that joined Dr. Clarke, Mr. Patrick Luo. Lactic acid has been shown to be a promising treatment method, and we will further investigate this method to determine the correct concentration that will not influence taste but retain the antimicrobial properties.

During my first week in Columbia, I was orientated to the University and the laboratories. I prepared culture media to be used in the experiments and visited the poultry processing facility. On weekends, there was time to explore the area. Dr. Clarke was kind enough to take me on a tour of the surrounding towns. We visited Jefferson City, St Louis, and Fulton. I had a wonderful experience at the University of Missouri and had many discussions on how to strengthen the collaboration between our research groups. I had many cultural experiences and met some fantastic people at the University of Columbia. Some from the photos of my trip is included below.

## References

Bernardet, J. F., Segers, P., Vancanneyt, M., Berthe, F., Kersters, K., and Vandamme, P. (1996). Cutting a gordian knot: Emended classification and description of the genus *Flavobacterium*, emended description of the family Flavobacteriaceae, and proposal of *Flavobacterium hydatis* nom. nov. (basonym, *Cytophaga aquatilis* BT/F1 11 Tf G[C]-11(ut)-3(t)-5nBT/F1 m. no/nymUniversity

Oosthuizen, L., Charimba, G., Hitzeroth, A., Nde, A. L., Steyn, L., Newman, J., and Hugo, C (2019) *Chryseobacterium pennipullorum* sp. Nov., isolated from poultry feather waste. *International Journal of Systematic and Evolutionary Microbiology*, 69(8), pp. 2380-2387. doi: 10.1099/ijsem.0.003491.

