

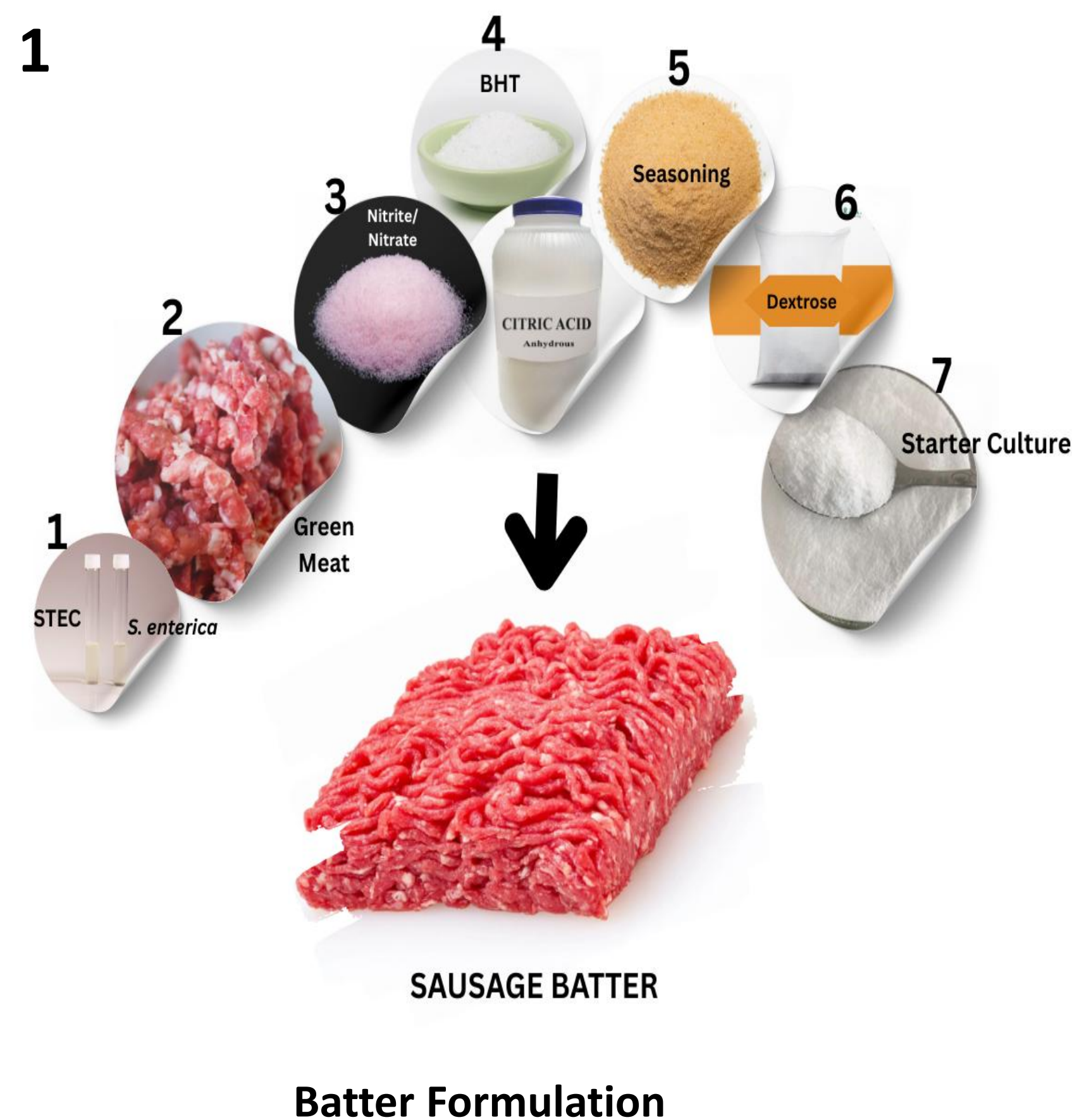
INTRODUCTION

- Dry fermented sausages are high-risk for foodborne pathogens.
- *Salmonella enterica* and STEC are key concerns due to their role in past disease outbreaks.
- Fermentation and drying offer potential for hygienic process control.

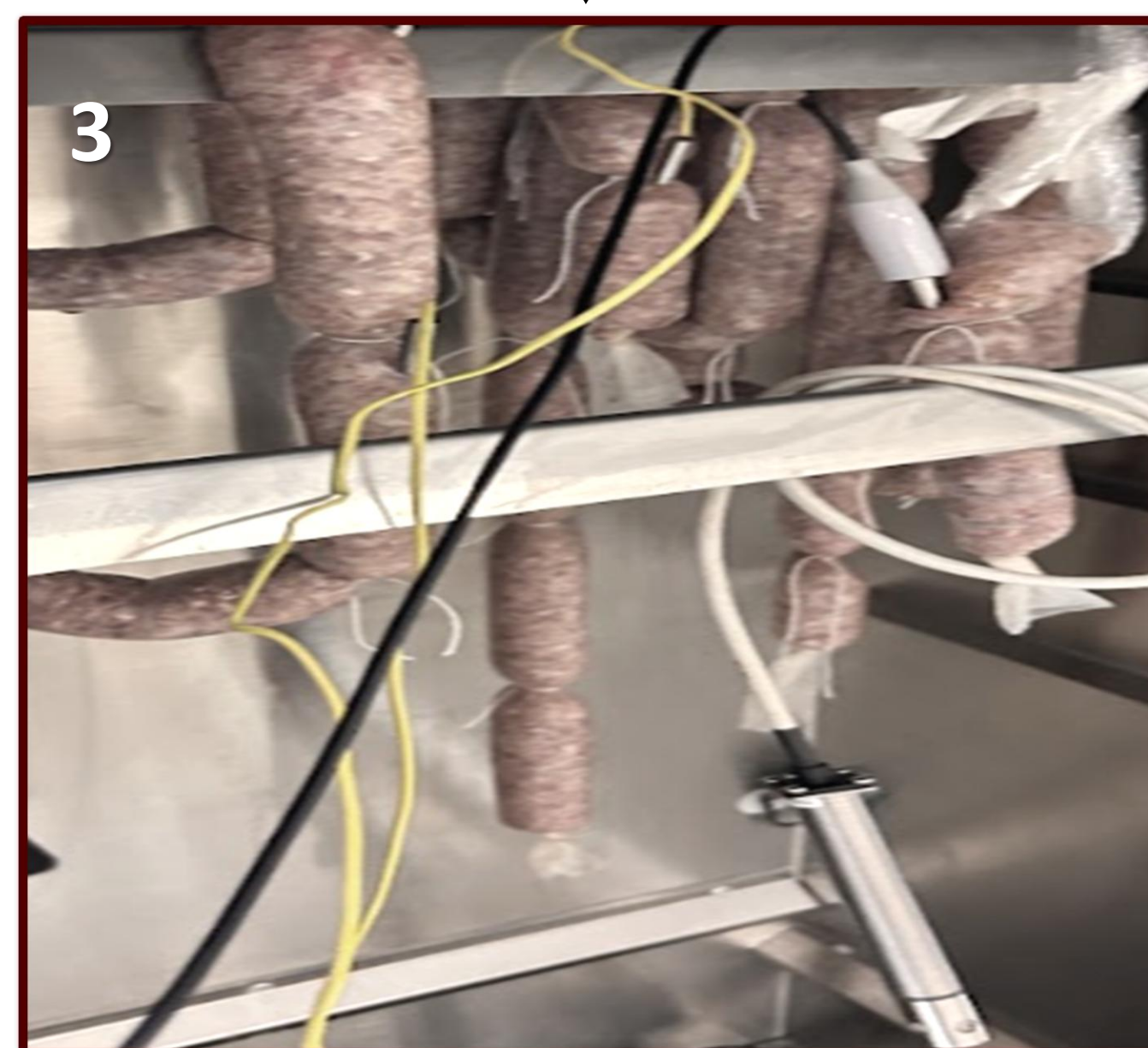
OBJECTIVES

- Validate fermentation-directed lethality for *S. enterica* and STEC.
- Monitoring pH, temperature, humidity (ERH), and pathogen reduction.
- To generate data for process criteria model preliminary design.

METHODS



Fine grinding & Stuffing

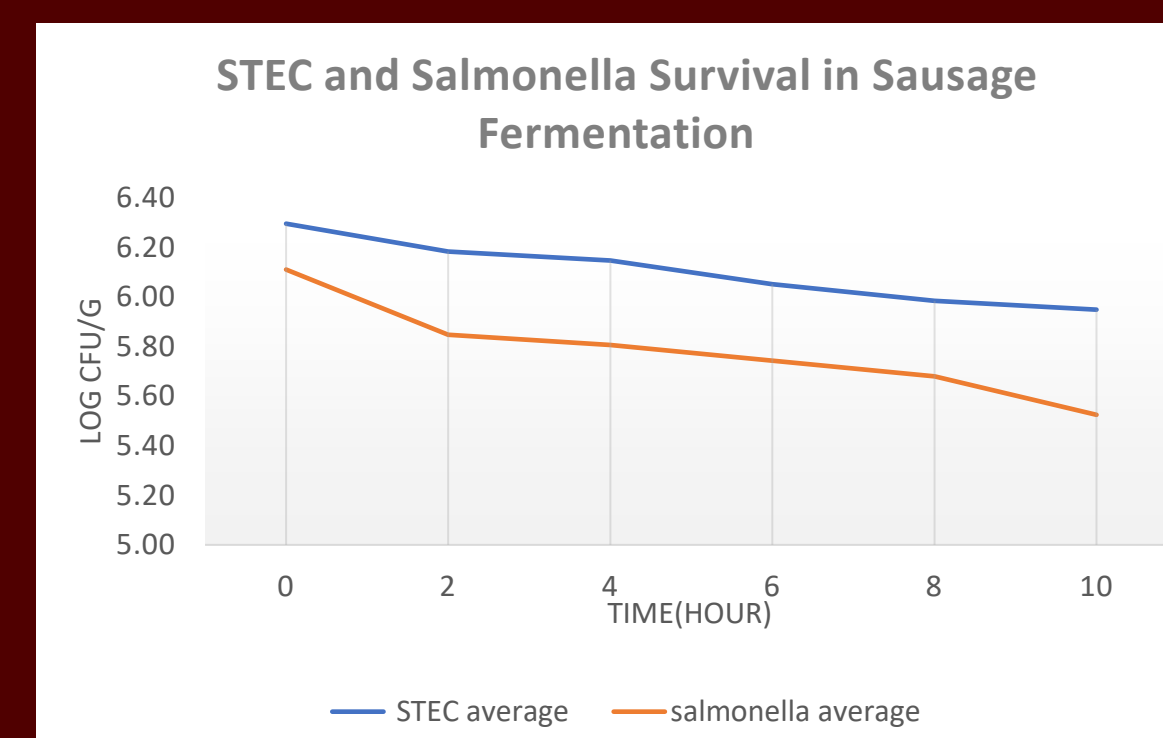


Controlled Fermentation

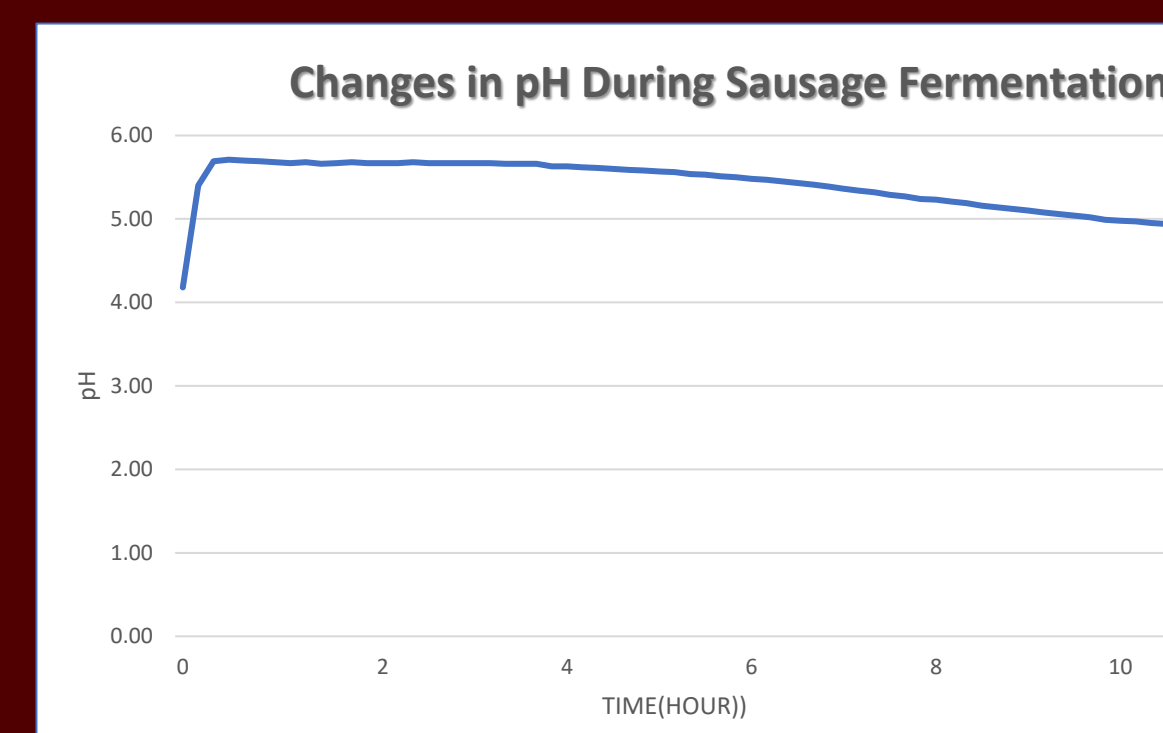
4 Physicochemical and Microbiological analyses

RESULTS

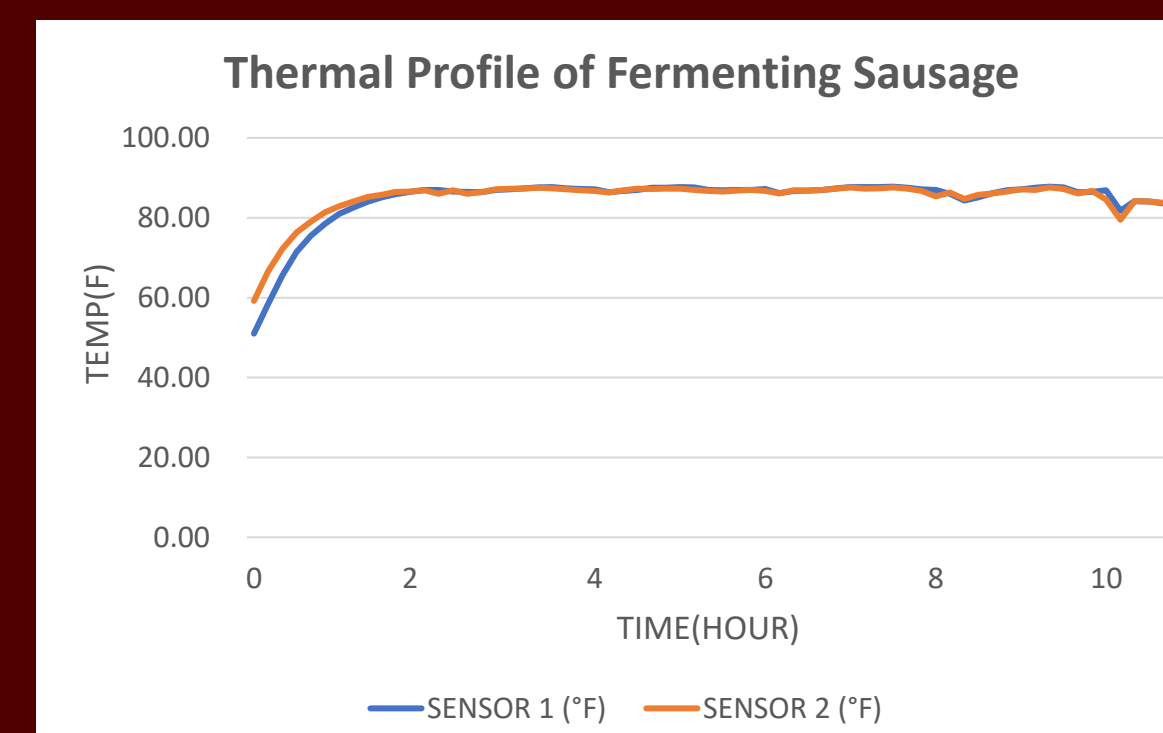
A



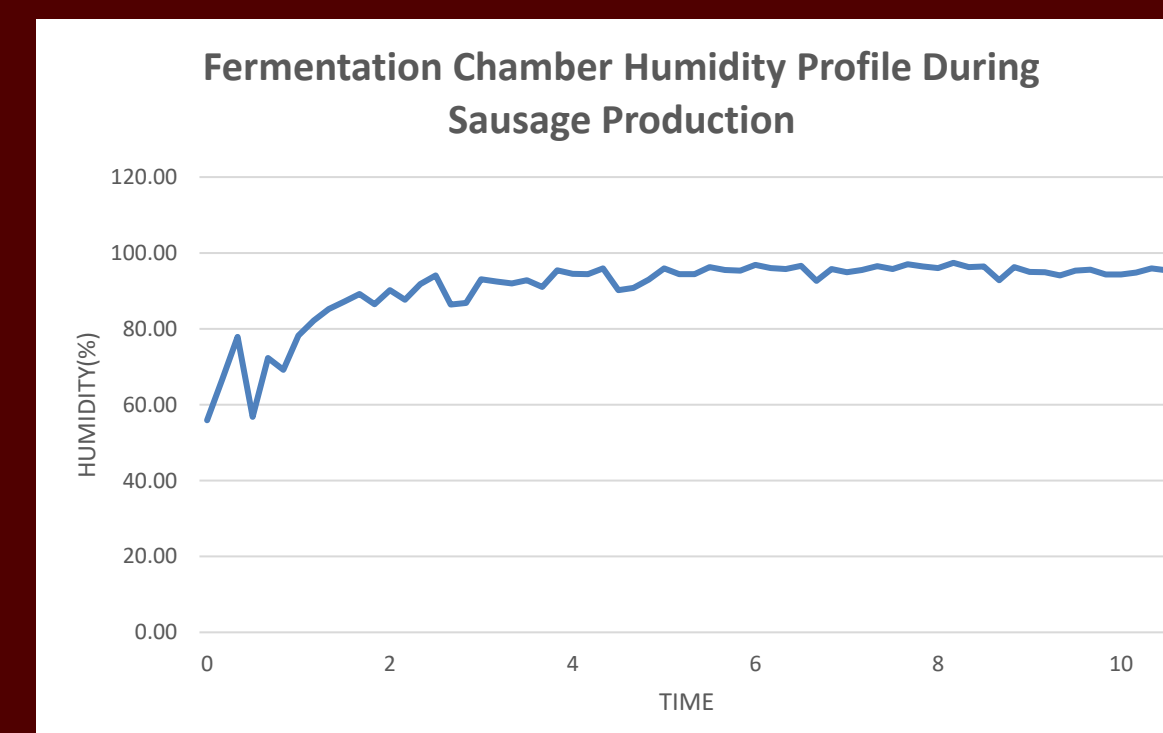
B



C



D



CONCLUSION

- Fermentation reduced the count of *S. enterica* and STEC by 0.58 log CFU/g and 0.35 log CFU/g, respectively in sausage within 10 hours.
- Environmental stability (Temperature, RH) supported effective fermentation.
- This study generated data that contribute to process criteria model for controlling pathogens in fermented dried sausage production.

ONGOING/FUTURE WORK

- Drying Completion Kinetics Monitoring
- Pathogen Control by Drying Modeling
- Mathematical Model Development
- Early Model Validation
- Model Efficacy Evaluation

REFERENCES

- USDA-FSIS. Shiga toxin-producing *Escherichia coli* in certain raw beef products. Federal Register. 2011;76:58157–58165.
- USDA-FSIS. 2017. *Salmonella* compliance guidelines for small and very small meat and poultry establishments that produce ready-to-eat (RTE) products and revised appendix A.

ACKNOWLEDGEMENTS

- This work was supported by USDA National Institute of Food and Agriculture (NIFA) [Grant Number 2023-67017-39044].
- Conference travel was generously supported by the Dr. Ron Schmidt Student Travel Award provided by 3-A Sanitary Standards, Inc. (3-A SSI).