Robert M. Kerr Food & Agricultural Products Center
2024 Food Science Research Symposium

For Student Award consideration, points will be deducted for failure to adhere to Abstract/Presentation Format Requirements

Abstract Deadline: Feb. 14, 2024 (5:00 pm)

Send abstracts to: fapc@okstate.edu

Abstract Submission Rules:

- Abstracts MUST address the following (but do not include these headers):
    1. **Justification/Introduction**
    2. **Objective**
    3. **Methods**
    4. **Results**
    5. **Significance of your research**
    6. **3-5 relevant 'keywords'**

  Note: Please place an empty line between each of the 5 sections.

- **Upon submission, designate whether you prefer "Poster" or "Oral" Presentation.**
- The abstract should cite data from representative experiments if completed, or discuss a project, expected results, or possible pitfalls on a project which has not yet been carried out.
- Abstracts may be no longer than **300 words**.
- Standard abbreviations may be used without definition. Nonstandard abbreviations must be kept to a minimum, and must be placed in parentheses after the first use of the word or phrase abbreviated.
- Do not include references, credits or grant support in the abstract.
- Proofread carefully for formatting, spelling, and grammar to avoid errors before submission.
- All authors must have a copy of the abstract before the time of submission.

See example abstract below (next page):

Post-package pasteurization of RTE deli meats by submersion heating for reduction of *Listeria monocytogenes*

J. Grooms, B. Quimby, W. Robertson, and P. Muriana. Department of Animal Science, Oklahoma State University, Stillwater, OK.

Listeria monocytogenes is an important foodborne pathogen that is often present in meat processing environments despite extensive efforts to eliminate them. This is even more significant for the processed meat industry where no further cooking is required for consumption. In the interests of food safety, processors should consider possible microbial interventions, including additional processing 'hurdles' to insure product safety. One such hurdle may be 'post-package pasteurization' as a means of reducing surface pathogen contamination that may occur during packaging.

The objectives were to evaluate time and temperature parameters for reduction of *L. monocytogenes* inoculated onto various ready-to-eat deli meats. Various considerations such as final purge volume and inoculation method were important in proper evaluation of the process.

A mixed strain "cocktail" of 4 strains of *L. monocytogenes* was added to a variety of RTE meat products at final concentrations of approximately 10^7 CFU/ml in natural product purge. All products were vacuum sealed in shrink-wrap packaging bags, massaged to insure inoculum distribution, held at refrigeration temperature for ~1hr, and then submerged into a steam-injected waterbath at various temperatures between 190°-210°F and for 2 to 10 minutes. All products were run in paired samplings in either a duplicate or triplicate testing regimen.

On various *L. monocytogenes*-inoculated RTE deli meats (turkeys, hams, roasts), 2-4 log cycle reductions were achieved when processed at at either 195°F, 200°F, or 205°F when heated for 2 to 10 min. High-level inoculation with *L. monocytogenes* (~10^7 CFU/ml) ensured that cells infiltrated the least processed areas.

The current data indicates that minimal heating regimens of 2 minutes, at 195°F can readily provide 2-log reductions in all RTE deli meats we processed. Obviously, greater time and temperatures provide greater reductions. This process may be an effective microbial intervention against *L. monocytogenes* on RTE meats.

Keywords: Meat, pasteurization, *Listeria*, ready-to-eat, contamination