



Private Company

Sterilization technologies for shelf-stable meat-based products

Food & nutrition

Background

We are a global leader in the development and production of high-quality consumer goods, with a strong focus on innovation in nutrition and wellbeing.

In processing shelf-stable meat-based products, the meat formulation must undergo retorting, a high-temperature, high-pressure sterilization process used to ensure food safety and extend shelf life. This method effectively eliminates pathogens but often results in temperature abuse and extended processing times, which lead to nutrient loss and undesirable aroma, color, and texture changes. These issues not only compromise product quality but also contribute negatively to the perception of products as ultra-processed, reducing consumer appeal.

By finding an alternative sterilization process, we aim to enhance product quality, ensure food safety, and meet consumer demands, thereby maintaining our competitive edge in the marketplace. We invite innovators, researchers, and industry experts to collaborate with us and submit their groundbreaking ideas to revolutionize the sterilization process.

What we're looking for

We are interested in processing solutions that can effectively inactivate microorganism spores while maintaining the aroma, color, nutrition, texture, and appearance of the original product. The ideal solution should be commercially available and demonstrate effectiveness in deactivating all spore-forming pathogens in meat-based products and support shelf-stability.

Solutions of interest include:

- Hurdle technology using combined methods to achieve sterilization
- Microwave-assisted thermal sterilization
- Pressure-assisted thermal sterilization
- Radio-assisted thermal sterilization

- Ohmic heating sterilization
- Other innovative sterilization technologies

Our must-have requirements are:

- Proven effectiveness in sterilization of food products
- Enable the final product to be distributed and stored at room temperature
- Preserves as much as possible the original nutrition, texture, flavor, and appearance of the food
- Achieves sterilization on products with minimal to no free water in packaging

Our nice-to-have's are:

- Achieves sterilization on products that might have packaging headspace
- Achieves sterilization through lower temperatures and or shorter processing times compared to standard retort
- Supports sustainability initiatives, such as reducing carbon footprint, using upcycled materials, and employing energy-efficient processes
- Commercial-ready
- Proven effectiveness in sterilization of meat-based products

What's out of scope:

- Irradiation technology
- Synthetic ingredient solutions (e.g., preservatives, anti-microbial chemicals)
- Technology that negatively impacts flavor, taste, appearance, or texture
- Technology that requires products to be refrigerated or frozen post-processing

Acceptable technology readiness levels (TRL):

Levels 5-9

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment

6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

What we can offer you

Eligible partnership models:

Capstone project
Co-development
Material transfer
Sponsored research
Supply/purchase

Benefits:

Sponsored Research

Funding is proposal-dependent, starting with a proof-of-concept project that has the potential for expansion based on results and opportunities. The viable solution will be commercialized on a global scale across the company's manufacturing line.

Expertise

Partners will gain access to the internal teams and experts for co-development, mutual learning, and broader business collaboration opportunities.

Facilities and Services

Partners may have access to pilot and production scale equipment for solution implementation.

Please contact the University of South Florida Technology Transfer office representative for submission – Karla Schramm at kschramm@usf.edu