Yuqin Zhang

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EDUCATION

Bachelor's degree in Food Science and Technology ***2025***
Minor in Statitiscs
University of California, Davis
GPA: **3.55/4.0;** Major GPA (FST): **3.62/4.0;**

AWARDS

- Dean's honor list UC Davis, 2021-2022 , 2024
- **Provost's Undergraduate Research Fellowship** **UC Davis, 2024**

PEER-REVIEWED PUBLICATION

1. Zhang, J., **Zhang, Yuqin**., Zou, Y., & Zhang, W. (2021). Effects of ultrasound-assisted cooking on quality characteristics of spiced beef during cold storage. LWT, 136, 110359. https://doi.org/10.1016/j.lwt.2020.110359
2. Zhang, J., **Zhang, Yuqin**., Wang, Y., Xing, L., & Zhang, W. (2020). Influences of ultrasonic-assisted frying on the flavor characteristics of fried meatballs. Innovative Food Science & Emerging Technologies, 62, 102365. https://doi.org/10.1016/j.ifset.2020.102365
3. Guo, C., Tu,T., **Zhang, Yuqin**, Xie, Y., Li, X., ., & Wang, L. (2024) Fate and Survival Behavior of Common Pathogens in Dark Green Leafy Juice stored at variable temperature conditions
4. Liu, Z., Tu, T., **Zhang, Yuqin**., Wang, H., & Wang, L. (2024). Survival of common pathogenic foodborne bacteria on commercial mushroom (Manuscript in preparation).
5. Chen, Z., **Zhang, Yuqin**., Xie, Y., & Wang., L. (2024). Characterization and mitigation of food safety risks associated with wax roller brushes (Manuscript in preparation).

COMPETITION RECORDS

1. IFT Smart Snack Competition Finalist - Fall 2022: For the creation of the 'Pumpyam' snack product.
2. DMI-Dairy Competition Finalist - Fall 2023: For the development of the 'Colorfir' dairy product.
3. MIT SANDBOX Entrepreneurship Program - Summer 2022: Advanced to the next funding round with a healthy snack business proposal.

SELECTED RESEARCH EXPERIENCE

Undergraduate research assistant (Luxin Wang lab), UC Davis ***September 2021- Now***

Project 4: Novel renewable bactericidal wax supplement for control of foodborne pathogens on fresh produce.

The project investigates the development of a new, eco-friendly bactericidal wax for fresh produce, aiming to improve food safety by effectively controlling foodborne pathogens. This innovative approach seeks to integrate pathogen control measures into the wax, commonly used to maintain freshness, thus potentially reducing the risk of contamination and outbreaks associated with fresh fruits and vegetables. In this project, I conducted bacterial inoculation and monitored the populational change of *Listeria monocytogenes* on citrus fruits using plate count methods.

Project 3: Survival of *Listeria monocytogenes* on commercial gourmet mushrooms during preharvest cultivation and postharvest storage

December 2023- Now

This study investigates the survival of *Listeria monocytogenes* (LM) on gourmet mushrooms, noting that despite frequent outbreaks linked to such products, there is a scarcity of data on LM's persistence on these foods. It reveals that LM exhibits varying survival rates on Trumpet Royal, Alba Clamshell, and Brown Clamshell mushrooms, persisting longer on harvested mushrooms in refrigerated storage. I contributed to this

project by conducting sample inoculation, bacteria enumeration, and ad-hoc LM survival data analysis. This project offers vital insights for enhancing food safety practices in the mushroom industry.

Project 2: Fate of foodborne pathogens on lemons after lab- and pilot-scale finishing wax application ***December 2023- Now***

The study assessed the effectiveness of different finishing waxes and drying temperatures on reducing *Listeria monocytogenes*, *Salmonella.*spp, and *Enterococcus faecium* on citrus fruits, finding that higher temperatures yielded greater microbial reduction. It also determined that the survival of these pathogens during storage varied with temperature and fruit type, providing critical data to inform food safety protocols in packinghouses. In preparation for the trial study, I was responsible for meticulously preparing the various selective agar. Additionally, I organized and maintained the storage environment for post-treatment observation, ensuring accurate data collection to determine pathogen survival rates.

Project 1: Systematic and integrated approach to mitigation of antimicrobial resistance in aquaculture ***September 2021- March 2022***

The use of antibiotics in animal agriculture is one of the drivers of antimicrobial resistance (AMR). In order to ensure sustainable use of antibiotics, the impact of the use of oxytetracycline hydrochloride, sulfadimethoxine and ormetoprim, and florfenicol on the abundance, diversity, and changes of AMR bacteria and genes presenting in catfish and rearing water was investigated. For this project, I mainly support the project supplies including media preparation for downstream bacterial populational monitor, isolation and cultivation. I also conducted regular and precise measurements of parameters like pH, temperature, salinity, nitrogenous compounds.

Student research assistant (Dr. Wangang Zhang lab), Nanjing Agricultural University ***June 2019- Now***

Project 1: Enhancing shelf life and quality of spiced beef through ultrasonic-assisted cooking techniques

This research aims to explore the utilization of ultrasonic-assisted cooking to enhance the shelf life of spiced beef during cold storage while maintaining its quality attributes. This approach is investigated in response to the need for preserving meat products effectively without compromising their sensory and nutritional qualities. In the study, I conducted a series of evaluations, measuring total viable count, lipid oxidation, volatile nitrogen compounds, pH levels, texture, color, and flavor profile changes in spiced beef through ultrasonic-assisted cooking methods. My role involved the careful application of ultrasonic treatment to the meat, followed by systematic analysis of its impact on the various quality indicators during the cold storage period. The significance of this study lies in its demonstration that ultrasonic-assisted cooking can be an innovative and effective method to prolong the shelf life of spiced beef, while slowing down quality deterioration, offering a promising technique for the meat processing industry. **The research outcomes of this study have been published on LWT.**

Project 2: Optimizing Flavor Profiles in Meatballs: The Impact of Ultrasonic-Assisted Frying

This study probes the effect of varying ultrasonic power levels on the flavor profile of fried meatballs, an exploration into enhancing taste through innovative cooking techniques. In this project, I executed the application of ultrasonic energy during frying and analyzed the resultant changes in lipid oxidation, free fatty acids, amino acids, nucleotides, and volatiles using an electronic nose. This research confirms that ultrasonic-assisted frying notably improves the flavor of meatballs, offering a valuable process refinement for the meat processing industry with implications for broader food technology applications. **The research outcomes of this study have been published on Innovative Food Science & Emerging Technologies.**

OTHER ACITIVITIES

Undergraduate learning assistant, UC Davis

- Tutored students general Chemistry 2 series courses twice every week for a whole quarter

PROFESSIONAL MEMBERSHIPS

- International Association of Food Protection ***Student Member***
- Institute of Food Technologists ***Student Member***

- American Society for Microbiology ***Student Member***
- Food Tech Club ***Student Member***

TECHNICAL SKILLS

Language: Python, R
Wet benchwork skills: NGS-library prep, qPCR, PCR, traditional microbial techniques