

# NANYANG LI

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## EDUCATION

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**Northwest A&F University** (985/211/Double First-Class)

Yangling, Shaanxi, China

**MA.Eng.**, Food Science and Engineering

(Expected) 09/2021-06/2024

- Advisers: Prof. Tianli Yue and Prof. Yahong Yuan
- Major GPA: **3.69/4.0**; Cumulative GPA: **3.58/4.0**
- Research focus: gut microbiome, colitis prevention and treatment, pathogenic microbial control, microbial selenium enrichment analysis, food preservation

**Northwest A&F University**

Yangling, Shaanxi, China

**B.Eng.**, Food Science and Engineering

09/2017-06/2021

- Advisers: Prof. Tianli Yue and Prof. Yahong Yuan
- Major GPA: **3.87/4.0**; Cumulative GPA: **3.43/4.0**
- Research focus: yeast fermentation analysis, wine composition analysis
- Related courses and grades: Food Microbiology (**4.0/4.0**), Basic Molecular Biology (**4.0/4.0**), Principles of Food Engineering Curriculum Design (**4.0/4.0**)

## RESEARCH EXPERIENCE

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**Northwest A&F University**

Yangling, Shaanxi, China

**Amelioration of ulcerative colitis by selenium nanoparticles** - Individual research

11/2022-06/2023

- Developed a mouse model for ulcerative colitis and conducted histopathological evaluations.
- Extracted total community RNA from fecal samples for 16S rRNA gene sequencing.
- Analyzed tight junction proteins using immunofluorescence staining.
- Measured Mucin 2 content and semi-quantitated goblet cells in colonic epithelium using Alcian blue staining.
- Analyzed inflammatory cytokine and chemokine levels using ELISA.
- Assessed antioxidant levels in colonic cells.
- Investigated NF- $\kappa$ B signaling pathway using western blot assay.

**Biosynthesis of selenium nanoparticles with antimicrobial activity** - Individual research

05/2022-10/2022

- Synthesized selenium nanoparticles using the fungal strain *Eurotium cristatum*.
- Characterized the nanoparticles using DLS, EDS, SEM, TEM, UV-vis, and FT-IR.
- Conducted cytotoxicity evaluations.
- Investigated the bacteriostatic capabilities and mechanisms of the nanoparticles against various pathogens.

**Post-harvest strawberry preservation** - Individual research and mentor of undergraduates

11/2021-04/2022

- Developed an edible alginate-based coating infused with various lactic acid bacteria.
- Evaluated the microbiological and physicochemical effects of the coating on the post-harvest preservation of strawberries.
- Assessed the tolerability of probiotics in the coating to gastrointestinal conditions.

## Analysis of compounds in ice wine fermented by non-Saccharomyces yeasts - Team leader 05/2019-05/2020

- Isolated and identified 113 yeast strains from various grape samples.
- Determined and analyzed the organic acids and polyphenolic compounds using HPLC.
- Examined volatile compounds using HS-SPME-GC-MS.
- Organized 30 faculty members and students in sensory assessments.

## PUBLICATIONS

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- **Li, Nanyang**; Yang, Yanru; Yue, Tianli; Yuan, Yahong. "Eurotium cristatum biosynthesized selenium nanoparticles for the amelioration of ulcerative colitis modulate gut microbiota." Submitted to *Redox Biology*, currently under review. (Q1, IF = 11.4)
- **Li, Nanyang**; Yang, Yanru; Qi, Jianrui; Li, Jiahui; Cheng, Yifan; Li, Zhao; Yue, Tianli; Yuan, Yahong. "Selenium nanoparticles biosynthesized by *Eurotium cristatum* with antimicrobial activity." Submitted to *Food Science and Human Wellness*, currently under review. (Q1, IF = 7)
- **Li, Nanyang**; Cheng, Yifan; Li, Zhao; Yue, Tianli; Yuan, Yahong. "An alginate-based edible coating containing lactic acid bacteria extends the shelf life of fresh strawberry (*Fragaria × ananassa* Duch.)." Submitted to *International Journal of Biological Macromolecules*, currently under review. (Q1, IF = 8.2)
- Zeng, Xuejun; Li, Jiahui; Wang, Xin; Liu, Ling; Shen, Shiqi; **Li, Nanyang**; Wang, Zhouli; Yuan, Yahong; Yue, Tianli. "Regulation on gut microbiota and microbial metabolome of kefir supernatant against *Fusobacterium nucleatum* and DSS induced colitis." Submitted to *Journal of Agricultural and Food Chemistry*, currently under review. (Q1, IF = 6.1)

## TEACHING EXPERIENCE

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### Northwest A&F University

Yangling, Shaanxi, China

#### Teaching assistant

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|------------------------------|-----------------|
| - Advanced Mathematics       | 09/2022-06/2023 |
| - Food Packaging             | 06/2022-09/2022 |
| - The Design of Food Factory | 03/2022-06/2022 |

## SKILLS

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**Computer Skills:** Origin, SPSS, ImageJ, Adobe Illustrator, Adobe Photoshop, Microsoft Office, Endnote

**Lab Skills:** RT-PCR, western blot, RNA/protein extraction, cell culture, ELISA, HPLC, HS-SPME-GC-MS, TEM, SEM, CLSM, EDS, zeta-sizer, UV-vis, FT-IR, and animal experiments (mouse): gavage administration, intraperitoneal/tail intravenous injection, behavioral experiments, blood collection (orbital sinus), dissection (general/brain), tissue collection (adipose/bile/liver/intestine), etc.

## AWARDS

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| Second-Class Academic Scholarship     | 09/2022 |
| Second-Class Professional Scholarship | 09/2018 |