Brindhalakshmi Balasubramanian

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EDUCATION

Doctor of Philosophy in Food Microbiology and Safety, **2019-present**

Department of Animal Science, University of Connecticut, Storrs, USA.

Master in Veterinary Science (M.V.Sc) in Veterinary Microbiology **2016**

Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, INDIA.

Project Title: "Comparative genomic analysis of field isolates, cell culture passaged and vaccine strains of canine/feline parvovirus".

Bachelor of Veterinary Science and Animal Husbandry (B.V.Sc & AH) **2013**

Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, INDIA.

CONFERENCE PRESENTATIONS

1. Oral presentation entitled "Application of ultrafine bubble technology in controlling *Listeria monocytogenes* on fresh produce". University of Connecticut Extension Vegetable and small fruit growers conference and trade show, Rocky Hill, CT, USA. **January 4, 2023**
2. Oral presentation entitled "Efficacy of eugenol nanoemulsions in inactivating *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes". Institute of Food Technologists, Chicago, IL, USA. **July 10-13, 2022**
3. Poster presentation entitled "Eugenol nanoemulsion inactivates *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes" in College of Agriculture, Health and Natural Resources Graduate Research Forum, University of Connecticut, Storrs, CT, USA. **April 9, 2022**
4. Oral presentation entitled "Antibiofilm efficacy of eugenol nanoemulsion against *Listeria monocytogenes*" in College of Agriculture, Health and Natural Resources. Graduate Research Forum, University of Connecticut, Virtual meeting, USA. **April 13, 2021**

5. Oral presentation entitled "Eugenol modulates *Listeria monocytogenes* proteome and virulence factor critical for biofilm formation" in Institute of Food Technologists, Virtual meeting, USA. **July 19-21, 2021**
6. Oral presentation entitled "Inactivation of *Listeria monocytogenes* on cantaloupe by eugenol nanoemulsion in combination with commercial sanitizers" in International Association for Food Protection, Virtual meeting, USA. **July 18-21, 2021**
7. Oral presentation entitled "Eugenol nanoemulsion reduce biofilm formation and inactivates mature biofilm of *Listeria monocytogenes*" in Institute of Food Technologists, Virtual meeting, USA. **July 12-15, 2020**
8. Oral presentation entitled "Application of eugenol nanoemulsion for controlling *Listeria monocytogenes* biofilms in food processing environment" in International Association for Food Protection, Virtual meeting, USA. **October 26-28, 2020**
9. Oral presentation entitled "Effect of eugenol nanoemulsion on the structure, composition, and microbial load in *Listeria monocytogenes* biofilm" in Conference of Research Workers in Animal Diseases, Virtual meeting, USA. **December 4-8, 2020**
10. Poster presentation entitled "Cell culture adaptation of parvovirus obtained from cats" in International Conference on One Medicine One Science held in University of Minnesota, Minneapolis, MN, USA. **April 24-26, 2016**

CONFERENCE ABSTRACTS

1. **Balasubramanian, B.,** Shah, T., Zhu, C., Rankin, K., Ghimire, S., Upadhyaya, I., Upadhyay, A. Effect of Ultra-fine ozone bubbles in inactivating *Listeria monocytogenes* and *Salmonella* Enteritidis on Romaine lettuce, apples and celery. New England Vegetable and Fruit Conference. **December 13-15, 2022**
2. **Balasubramanian, B.,** Shah, T., Allen, J., Rankin, K., Xue, J., Luo, Y., Upadhyay, A. Efficacy of eugenol nanoemulsions in inactivating *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes. Institute of Food Technologists. **July 10-13, 2022**
3. Allen, J., **Balasubramanian, B.,** Rankin, K., Shah, T., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. Trans cinnamaldehyde nanoemulsions reduces *Salmonella* Enteritidis survival and trans-shell migration on eggs without affecting egg color or embryo development. Poultry Science Association. **July 11-14, 2022**

4. Shah, T., Zhu, C., **Balasubramanian, B.,** Upadhyay, A. Application of Trans-cinnamaldehyde nanoemulsion as a natural sanitizer for inactivating *Salmonella* Enteritidis in poultry drinking water system. Institute of Food Technologists.

   July 10-13, 2022

5. Rankin, K., Zhu, C., **Balasubramanian, B.,** Allen, J., Shah, T., Upadhyay, A. Application of Carvacrol, Eugenol, and Trans-cinnamaldehyde nanoemulsions for controlling *Salmonella* spp. on fresh produce. Institute of Food Technologists.

   July 10-13, 2022

6. **Balasubramanian, B.,** Shah, T., Allen, J., Rankin, K., Xue, J., Luo, Y., Upadhyay, A. Eugenol nanoemulsion inactivates *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes". College of Agriculture, Health and Natural Resources. University of Connecticut, Graduate Research Forum.

   April 9, 2022

7. **Balasubramanian, B.,** Xue, J., Luo, Y., Upadhyay, A. Antibiofilm efficacy of eugenol nanoemulsion against *Listeria monocytogenes*". College of Agriculture, Health and Natural Resources. University of Connecticut, Graduate Research Forum.

   April 13, 2021

8. **Balasubramanian, B.,** Rankin, K., Allen, J., Upadhyay, A. Inactivation of *Listeria monocytogenes* on cantaloupe by eugenol nanoemulsion in combination with commercial sanitizers. International Association for Food Protection. **July 18-21, 2021**

9. **Balasubramanian, B.,** Xue, J., Upadhyaya, I., Luo, Y., Upadhyay, A. Eugenol modulates *Listeria monocytogenes* proteome and virulence factors critical for biofilm formation. Institute of Food Technologists. **July 19-21, 2021**

10. Allen, J., **Balasubramanian, B.,** Rankin, K., Shah, T., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. Efficacy of Trans-cinnamaldehyde nanoemulsions in inactivating *Salmonella* Enteritidis on shelled eggs and chicken skin. Poultry Science Association.

    July 19-22, 2021

11. Allen, J., **Balasubramanian, B.,** Rankin K., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. Trans-cinnamaldehyde nanoemulsion dip treatments rapidly inactivate *Salmonella* Enteritidis on eggs. International Poultry Scientific Forum.

    January 25-26, 2021

12. Shah, T., **Balasubramanian, B.,** Upadhyaya, I., Venkitanarayanan, K., Upadhyay, A. Effect of Trans-cinnamaldehyde, Eugenol and Carvacrol on *Salmonella* Enteritidis proteome critical for colonization in chickens. Poultry Science Association.

July 18-21, 2021

13. **Balasubramanian, B.,** Xue, J., Luo, Y., Upadhyay, A. Effect of eugenol nanoemulsion on the structure, composition, and microbial load in *Listeria monocytogenes* biofilm. Conference of Research Workers in Animal Diseases. **December 4-8, 2020**
14. **Balasubramanian, B.,** Xue, J., Luo, Y., Upadhyay, A. Eugenol nanoemulsion reduce biofilm formation and inactivate mature biofilm of *Listeria monocytogenes*. Institute of Food Technologists. **July 12-15, 2020**
15. **Balasubramanian, B.,** Xue, J., Luo, Y., Upadhyay, A. Application of eugenol nanoemulsion for controlling *Listeria monocytogenes* biofilms in food processing environment. International Association for Food Protection. **October 26-28, 2020**
16. **Balasubramanian, B.,** Mukhopadhyay, HK., Antony, PX., Thanislass, J. Cell culture adaptation of parvovirus obtained from cats. International Conference on One Medicine one Science, University of Minnesota. **April 24-27, 2016**

PUBLICATIONS

1. Allen, J., **Balasubramanian**, B., Rankin, K., Shah, T., Donoghue, A. M., Upadhyaya, I., Sartini, B., Luo, Y., and Upadhyay, A., (2023). *Trans*-cinnamaldehyde nanoemulsion wash inactivates *Salmonella* Enteritidis on shelled eggs without affecting egg color or embryo growth. Poultry Science. https://doi.org/10.1016/j.psj.2023.102523.
2. **Balasubramanian, B.,** Shah, T., Allen, J., Rankin, K., Xue, J., Luo, Y., Mancini, R., Upadhyay, A., (2022). Eugenol nanoemulsion inactivates *Listeria monocytogenes*, *Salmonella Enteritidis*, and *Escherichia coli* O157:H7 on cantaloupes without affecting rind color. Frontiers in Sustainable Food Systems. 6:984391. doi.org/10.3389/fsufs.2022.984391.
3. Xue, J., Luo, Y., **Balasubramanian, B.,** Upadhyay, A., Li, Z., Luo, Y. (2021). Development of novel biopolymer-based dendritic nanocomplexes for encapsulation of phenolic bioactive compounds: A proof-of-concept study. Food Hydrocolloids. p.106987. doi.org/10.1016/j.foodhyd.2021.106987.
4. Marimuthu, S., **Balasubramanian, B.,** Selvam, R., D'Souza, P. (2019). Evaluation of a polyherbal formulation for the management of wet litter in broiler chickens: Implications on performance parameters, cecal moisture level, and footpad lesions. Journal of Advanced Veterinary and Animal Research. 30;6(4):536-543. doi: 10.5455/javar.2019.f379.

5. Marimuthu, S., **Balasubramanian, B.,** Selvam, R., D'Souza, P. (2019). Modulation of chicken cecal microbiota by a phytogenic feed additive, Stodi®: A metagenomic analysis. Pharmacognosy Research. 11(3):201-209.
6. Nookala, M., Mukhopadhyay, HK., Sivaprakasam, A., **Balasubramanian, B.,** Antony, PX., Thanislass, J., Srinivas, MV., Pillai, RM. (2016). Full-length VP2 gene analysis of canine parvovirus reveals emergence of newer variants in India. Acta Microbiologica et Immunologica Hungarica. 63(4):411-426. doi: 10.1556/030.63.2016.010.
7. **Balasubramanian, B.,** Mukhopadhyay, HK., Antony, PX., Thanislass, J., Vijayalakshmi, P. (2016). Isolation and molecular characterization of canine and feline parvovirus strains-an updated review. Journal of Dairy Veterinary and Animal Research. 3(5): 164- 169. doi: 10.15406/jdvar.2016.03.00093.

HONORS AND AWARDS

1. Awarded third place in Institute of Food Technologists Z. John Ordal Food microbiology division oral competition, 2022.
2. Finalist in Institute of Food Technologists Z. John Ordal Food microbiology division oral competition, 2021.
3. Awarded Conference Participation Award from the University of Connecticut Graduate School, 2022.
4. Travel award from University of Minnesota for poster presentation in the International Conference on One Medicine One Science held in University of Minnesota, 2016.

TEACHING EXPERIENCE

Guest lectures

1. Guest lecture on "Bacterial identification techniques" in ANSC 3343 Animal Food Products. **November 10, 2021**

TA assignments

1. ANSC 2271 Principles of Poultry Science. **Spring 2020**
2. ANSC 3343 Animal Food Products. **Fall 2021**

Undergraduate Student mentoring

1. Wesley Crouch: "Independent study in poultry microbiology". **Fall 2022**
2. Sophia Prata and Lindsey Cowden, "Introduction to food microbiology and safety research". **Spring 2022**

3. Rhys Moskowitz, Mia Kirlan-Stout, Sophia Prata, and Lindsey Cowden, "Testing efficacy of phytochemical for reducing *Listeria monocytogenes* and *Salmonella* Spp. survival on food products". **Fall 2021**
4. Erika Lum and Stanley Chen, "Introduction to microbiology research". **Fall 2020**
5. Erika Lum, "Introduction to techniques in microbiology". **Fall 2019**

SERVICE

1. President, IFTSA, UCONN chapter. **2021 - present**
2. Treasurer, IFTSA, UCONN chapter. **2019 - 2020**
3. Member in the ANSC Poultry Club. **2019 - present**
4. College Joint Secretary in Student council. **2011 - 2012**
5. School Sports Secretary in Student council. **2005 - 2006**
6. Member in National Cadet Corps. **2003**

PROFESSIONAL AFFILIATIONS

1. Member in Institute of Food Technologists. **2019 - present**
2. Member in International Association for Food Protection **2019 - present**
3. Life time member in Indian Society for Veterinary Microbiology and Immunology. **2016 - present**
4. Registered Veterinary Practitioner Membership in Tamilnadu State Veterinary Council (Reg. No. 6232). **2016 - present**

WORKSHOPS AND TRAININGS

1. Attended Institute for Genome Sciences Virtual Microbiome Analysis Training, University of Maryland. **December 5-9, 2022**
2. Workshop on Microbiome Analysis by University of Connecticut, Microbial Analysis, Resources and Services Facility. **August 15-18, 2022**
3. Workshop on RNAseq by University of Connecticut, Computational Biology Core Facility. **April 4-7, 2022**
4. Workshop on Introduction to Statistical Analysis for Label-Free Quantitative Proteomics by University of Connecticut, Proteomics and Metabolomics Facility and Statistical Consulting Service. **August 5-6, 2021**