

Chhaya Goyal

M.Sc. & PhD (Dairy Microbiology)
Assistant Professor
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Education

- **December 2018: Ph.D at Dairy Microbiology Division, ICAR- National Dairy Research Institute, Karnal, Haryana, India (OGPA 8.1/10). Research Project** “Whole genome sequencing (WGS) of indigenous probiotic *Lactobacillus reuteri* LR6 and validation of its unique features”. **Major Advisor: Dr. S. K. Tomar, PS, NDRI Karnal**
- Qualified ICAR National Eligibility Test for lecturership in Dairy Microbiology (76% marks) in September 2013
- **July 2013: Master of Science (Dairy Microbiology) at Dairy Microbiology Division, ICAR-National Dairy Research Institute, Karnal, Haryana, India (OGPA 8.1/10). Research Project** “Purification and characterization of broad spectrum bacteriocin produced by selected strain of *Lactococcus* species and its microencapsulation”. **Major advisor: Dr. R. K. Malik, PS, NDRI Karnal**
- **May 2010: Bachelor of Science (Industrial Microbiology)** from M.L.N. College, Yamuna Nagar, affiliated to Kurukshetra University, Kurukshetra, Haryana, India
- **May 2006:** 10+2 (PCB), U.P. Board, K.L.G.M. Inter College, Saharanpur, U.P.
- **May 2004:** 10th, CBSE Board, DAV School, Saharanpur, U.P

Research exposure

PhD Research Project

Title: Whole genome sequencing (WGS) of indigenous probiotic *Lactobacillus reuteri* LR6 and validation of its unique features

Major supervisor: Dr. S. K. Tomar, Principal Scientist (Dairy Microbiology) & Academic Coordinator, ICAR-NDRI, Karnal

M.Sc. Research work

Title: Purification and characterization of broad spectrum bacteriocin produced by selected strain of *Lactococcus* species and its microencapsulation

Major advisor: Dr. R. K. Malik, Emeritus Scientist (Dairy Microbiology) & Ex- JDR, ICAR-NDRI, Karnal

Work Experience

Position	Institute	From	To	
Assistant Professor (Stage I)	Dairy Science & Food Technology, IAS, BHU, Varanasi	05.11.2019	Till date	4 years, 4 months, 19 days
Research Associate	Anaerobic Microbiology Laboratory, NDRI, Karnal	29.03.2019 (AN)	02.11.2019	7 months 4 days
Junior Research Fellow (DST research project)	Microbial Metabolite Laboratory, NDRI, Karnal	06.03.2018	29.03.2019 (FN)	1 year 5 months, 23 days

Student guidance	Course	Number of Students guided
Completed	M.Sc	4
	M.Tech	2
Ongoing	M.Sc	4
	Ph.D	1

Teaching Teaching more than 28 subjects to BTech (Dairy Technology and Food Technology), MTech (Dairy Technology and Food Processing Technology) and Ph.D (Dairy Technology and Food Processing Technology)

Academic positions

- Co-coordinator MTech program Dairy Technology, DSFT, BHU, Varanasi
- Examination Tabulator, BTech (Dairy Technology and Food Technology), DSFT, BHU, Varanasi
- Warden, Godavari Girls Hostel, Triveni complex, Banaras Hindu University.

List of Publications

1. Jakha, K. H., Goyal, C., Dhyani, P., Rai, D. C., Saharan, B. S., Dhull, S. B., & Duhan, J. S. (2024). Characterization of *Langra* Mango Peel Powder and Assessment of Its Prebiotic and Antioxidant Potential. *Journal of Food Biochemistry*, 2024, 9026617. <https://doi.org/10.1155/2024/9026617> (Impact factor: 4)

2. Sharma, K., Majhi, S., Singh, R., Sharma, S., Dhyani, P., **Goyal, C.**, Tripathi, C. S. P., & Guin, D. (2024). Magnetically Separable Ag@Fe₃O₄-GO Nanocomposites for SERS Detection, Removal of Organic Pollutants, Oil from Water, and Antibacterial Applications [10.1039/D3NJ05835B]. *New Journal of Chemistry*. <https://doi.org/10.1039/D3NJ05835B> (**Impact factor: 3.3**)
3. Dhyani, P., **Goyal, C.**, Dhull, S. B., Chauhan, A. K., Singh Saharan, B., Harshita, Duhan, J. S., & Goksen, G. (2023). Psychobiotics for Mitigation of Neuro-Degenerative Diseases: Recent Advancements. *Molecular Nutrition and Food Research*, e2300461. <https://doi.org/10.1002/mnfr.202300461> (**Impact factor: 5.2**)
4. **Goyal, C.**, Dhyani, P., Rai, D. C., Tyagi, S., Dhull, S. B., Sadh, P. K., Duhan, J. S., & Saharan, B. S. (2023). Emerging Trends and Advancements in the Processing of Dairy Whey for Sustainable Biorefining. *Journal of Food Processing and Preservation*, 2023, 6626513. <https://doi.org/10.1155/2023/6626513> (**Impact factor: 2.6**)
5. Saharan, B. S., Kamal, N., Badoni, P., Kumar, R., Saini, M., Kumar, D., Sharma, D., Tyagi, S., Ranga, P., **Goyal, C** & Parshad, J. (2023). Biopolymer and Polymer Precursor Production by Micro-organisms: Applications and Future Prospects. *Journal of Chemical Technology & Biotechnology*, 2023, 1-14. <https://doi.org/10.1002/jctb.7524> (**Impact factor: 3.4**)
6. Nag, I., & **Goyal, C.** (2023). Optimization and characterization of a value-added fermented ready-to-serve whey-based beverage with high antioxidant potential. *Indian Journal of Dairy Science*, 76(6).
7. Karmakar, S., Arvind, **Goyal, C.**, Pandhi, S., Singh, M. K. & Kumari, A. (2023). Process optimization of mango probiotic beverage. *Annals of Phytomedicine* 12(1), 702-705. <http://dx.doi.org/10.54085/ap.2023.12.1.63>
8. **Goyal, C.**, & Rai, D. C. (2021). Bioprotective cultures for use in dairy products. *International Journal of Current Research*, 13, (12), 20125-20132. <https://doi.org/10.24941/ijcr.42799.12.2021>
9. **Goyal, C.**, Malik, R. K., & Pradhan, D. (2018). Purification and characterization of a broad spectrum bacteriocin produced by a selected *Lactococcus lactis* strain 63 isolated from Indian dairy products. *Journal of Food Science and Technology*, 55(9), 3683-3692. <https://doi.org/10.1007/s13197-018-3298-4> (**Impact factor: 3.9**)
10. Khanday, Z. B., Cauhan, P., Dey, D., Malik, R., Pradhan, D., & **Goyal, C.** (2018). A review on fermentation quality of paddy straw silage. *Journal of Entomology and Zoology Studies*, 6, 1184-1887.
11. Pradhan, D., **Goyal, C.**, Malik, R., & Narsaiah, K. (2018). Efficacy of alginate: Nanoliposome encapsulated pediocin against *L. Innocua* in milk system. *International Journal of Chemical Studies*.
12. Singh, A., Pradhan, D., & **Goyal, C.** (2017). Characterization of antibiotic resistance in dairy lactococci. *Indian Journal of Dairy Science*, 70, 324-330.

Book

1. R. K. Malik, K Nageshwara Rao and **Chhaya Goyal**. 2022. Handbook of Multi Choice Questions (MCQs) in Dairy and Food Microbiology For ICAR-JRF SRF ARS NET

GATE and Other Competitive Examination ISBN: 978-93-5461-230-5, Daya Publishing House, Astral International Pvt. Ltd.

Book Chapter

1. **Goyal, C., Rai, S., Tripathi, A. D., & Rai, D. C. (2022).** Microbial Biopolymers and Enzymes Involved in the Biosynthesis of PHAs. In A. Dutt Tripathi, K. K. Darani, D. C. Rai, & V. Paul (Eds.), *Biodegradable Polymer-Based Food Packaging* (pp. 155-178). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-5743-7_8

Awards

1. Second best poster award for poster entitled “Genome mining of indigenous probiotic *Lactobacillus reuteri* LR6 for genetic determinants of probiotic attributes” presented in the 46th Dairy Industry Conference held at Angamaly, Kochi, Kerala, from 8-12 February 2018.
2. Dr. Rana Memorial Best Poster Award for poster entitled “Potent reuterin antimicrobial system for maintaining the keeping quality of raw milk under ambient farm conditions” presented in the 59th Annual Conference of AMI held at University of Hyderabad, Telangana from December 9-12, 2018.
3. Merit Certificate in PhD in Dairy Microbiology Division at N.D.R.I. Karnal in 2018
4. Merit Certificate in M.Sc. in Dairy Microbiology Division at N.D.R.I. Karnal in 2014
5. Recipient of Inspire Fellowship during Ph.D. (Dairy Microbiology) programme in 2014
6. “Rashtriya Bal Vigyani” title for representing a project “Water & health” at National Level organized by National Children Science Congress at Gauhati, Assam in 2005

Presentation in conferences

1. Poster entitled “Characterization of *Langra* Mango Peel Powder and Assessment of Its Prebiotic and Antioxidant Potential” presented in the 50th Dairy Industry Conference held at Hyderabad, Telangana on March 4-6, 2024.
2. Oral presentation entitled “Whole genome and differential expression based functional validation of indigenous probiotic culture *Lactobacillus reuteri* LR6” presented in National Seminar on “Fermented Dairy Foods and their Health Benefits” held at ICAR-NDRI, Karnal on May 26-27, 2018.
3. Poster entitled “Genome mining of indigenous probiotic *Lactobacillus reuteri* LR6 for genetic determinants of probiotic attributes” presented in the 46th Dairy Industry Conference held at Angamaly, Kochi, Kerala on February 8-10, 2018.

4. Poster entitled “Purification and Characterization of Nisin Z produced by *Lactococcus lactis* subsp. *lactis* 63 with Dual Antibacterial Activity against Gram-Positive and Gram-Negative Bacteria” presented in the 44th Dairy Industry Conference at ICAR-NDRI, Karnal on February 18-20, 2016.
5. Oral Presentation entitled “Purification and characterization of broad spectrum bacteriocin from selected strain of *Lactococcus* species and its microencapsulation.” presented during the International Conference on Sustainable Innovations in Dairying at Rajgir, Nalanda, Bihar from April 2-5, 2015.

Gene Bank Submission

- **84** 16S ribosomal RNA gene, partial sequence (such as KU359423, KU359424, KU366612, KU746859)

Profile ID: <https://www.researchgate.net/profile/Chhaya-Goyal/research>