

Dr. Lavaraj Devkota  
Chemical & Biological Engineering  
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## Biography

Lavaraj earned his Ph.D. in Chemical Engineering from Monash University in 2021 through the Food and Dairy Graduate Research Industry Partnership (GRIP) PhD program. Throughout his doctoral years, he collaborated with Simplot Australia Pty. Ltd., his industry partner, to investigate legume hydration and assess nutraceutical by-products in the context of industrial legume processing.

In addition to his Ph.D., Lavaraj holds a Master's degree in Food Engineering and Bioprocess Technology from the Asian Institute of Technology, Thailand, and a Bachelor of Dairy Technology degree from Purbanchal University, Nepal. With two years of experience in the dairy industry and a wealth of multidisciplinary research expertise, Lavaraj has contributed to fields such as electrochemical sensor development, food waste utilization, novel food processing technologies, plant protein and functional foods.

Passionate about bridging academia and industry, Lavaraj actively brings innovative ideas to fruition. His extensive industry engagement includes collaborations with companies such as Simplot Australia Pty Ltd, Archer-Daniels-Midland (ADM, USA), and Kraft Heinz ANZ.

## Qualifications

Chemical Engineering, PhD, MONASH UNIVERSITY  
... → 2021

Food Engineering and Bioprocess Technology, M.Sc., Asian Institute of Technology  
... → 2016

Food and Dairy Technology, B.Tech., Purbanchal University  
... → 2012

## Employment

### Research Fellow

Chemical & Biological Engineering  
MONASH UNIVERSITY  
1 Aug 2022 → present

## Research outputs

### **Molecular interactions between polyphenols and porcine $\alpha$ -amylase: An inhibition study on starch granules probed by kinetic, spectroscopic, calorimetric and in silico techniques**

Le, D. T., Kumar, G., Williamson, G., Devkota, L. & Dhital, S., Jun 2024, In: Food Hydrocolloids. 151, 11 p., 109821.

### **The effect of probiotic strains on the proteolytic activity and peptide profiles of lupin oat-based yoghurt**

Dhakal, D., Younas, T., Bhusal, R. P., Devkota, L., Li, L., Zhang, B. & Dhital, S., Apr 2024, In: Food Hydrocolloids. 149, 15 p., 109570.

### **Techno-functional and rheological characterisation of protein isolates from two Australian lupin species as affected by processing conditions**

Devkota, L., Kyriakopoulou, K., Fernandez, D., Bergia, R. & Dhital, S., Feb 2024, In: International Journal of Food Science and Technology. 59, 2, p. 774-784 11 p.

### **Degradation of starch in pasta induced by extrusion below gelatinization temperature**

Jia, B., Devkota, L., Sissons, M. & Dhital, S., 15 Nov 2023, In: Food Chemistry. 426, 11 p., 136524.

**Plant cell wall composition modulates the gut microbiota and metabolites in in-vitro fermentation**

Xiong, W., Devkota, L., Flanagan, B. M., Gu, Z., Zhang, B. & Dhital, S., 15 Sept 2023, In: Carbohydrate Polymers. 316, 15 p., 121074.

**Design rules of plant-based yoghurt-mimic: Formulation, functionality, sensory profile and nutritional value**

Dhakal, D., Younas, T., Bhusal, R. P., Devkota, L., Henry, C. J. & Dhital, S., Sept 2023, In: Food Hydrocolloids. 142, 21 p., 108786.

**Innovations in legume processing: Ultrasound-based strategies for enhanced legume hydration and processing**

Kumar, G., Le, D. T., Durco, J., Cianciosi, S., Devkota, L. & Dhital, S., Sept 2023, In: Trends in Food Science and Technology. 139, 12 p., 104122.

**Hard-to-cook phenomenon in common legumes: chemistry, mechanisms and utilisation**

Perera, D., Devkota, L., Garnier, G., Panozzo, J. & Dhital, S., 30 Jul 2023, In: Food Chemistry. 415, 15 p., 135743.

**Structural and thermal characterization of protein isolates from Australian lupin varieties as affected by processing conditions**

Devkota, L., Kyriakopoulou, K., Bergia, R. & Dhital, S., 21 Feb 2023, In: Foods. 12, 5, 18 p., 908.

**Bioactive nutrient retention during thermal-assisted hydration of Lupins**

Perera, D., Kumar, G., Devkota, L. & Dhital, S., 3 Feb 2023, In: Foods. 12, 4, 20 p., 709.

**Mashing performance as a function of malt particle size in beer production**

Yin Tan, W., Li, M., Devkota, L., Attenborough, E. & Dhital, S., 2023, In: Critical Reviews in Food Science and Nutrition. 63, 21, p. 5372-5387 16 p.

**Thermal and pulsed electric field (PEF) assisted hydration of common beans**

Devkota, L., He, L., Bittencourt, C., Midgley, J. & Haritos, V. S., 15 Mar 2022, In: LWT. 158, 9 p., 113163.

**Intact cells: "Nutritional capsules" in plant foods**

Xiong, W., Devkota, L., Zhang, B., Muir, J. & Dhital, S., Mar 2022, In: Comprehensive Reviews in Food Science and Food Safety. 21, 2, p. 1198-1217 20 p.

**Effect of seed coat microstructure and lipid composition on the hydration behavior and kinetics of two red bean (*Phaseolus vulgaris* L.) varieties**

Devkota, L., He, L., Midgley, J. & Haritos, V. S., Feb 2022, In: Journal of Food Science. 87, 2, p. 528-542 15 p.

**Reducing added sodium and sugar intake from processed legumes without affecting quality**

Devkota, L., He, L., Midgley, J., Chen, Y. & Haritos, V. S., Apr 2021, In: LWT. 140, 8 p., 110729.

**Electrochemical determination of tetracycline using AuNP-coated molecularly imprinted overoxidized polypyrrole sensing interface**

Devkota, L., Nguyen, L. T., Vu, T. T. & Piro, B., 20 Apr 2018, In: Electrochimica Acta. 270, p. 535-542 8 p.

**Extraction and characterization of proteins from banana (*Musa Sapientum* L) flower and evaluation of antimicrobial activities**

Sitthiya, K., Devkota, L., Sadiq, M. B. & Anal, A. K., Feb 2018, In: Journal of Food Science and Technology. 55, 2, p. 658-666 9 p.

**Regulatory and Legislative Issues for Food Waste Utilization**

Devkota, L., Montet, D. & Anal, A. K., 2018, *Food Processing By-Products and their Utilization*. Anal, A. K. (ed.). 1st ed. Hoboken NJ USA: John Wiley & Sons, p. 535-548 14 p.

**The effects of selected metal ions on the stability of red cabbage anthocyanins and total phenolic compounds subjected to encapsulation process**

Ratanapoompinyo, J., Nguyen, L. T., Devkota, L. & Shrestha, P., Dec 2017, In: Journal of Food Processing and Preservation. 41, 6, 8 p., e13234.

**Enzymatic hydrolysis of catfish (*Pangasius hypophthalmus*) By-Product: kinetic analysis of key process parameters and characteristics of the hydrolysates obtained**

Ha, N. C., Hien, D. M., Thuy, N. T., Nguyen, L. T. & Devkota, L., 21 Oct 2017, In: Journal of Aquatic Food Product Technology. 26, 9, p. 1070-1082 13 p.

## **Projects**

**High moisture extrusion of proteins**

Dhital, S. & Devkota, L.

15/07/22 → 31/07/23