

Bhawani Chamlagain
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Qualifications

PhD Food Sciences

Publications

1. **Sea lettuce (*Ulva fenestrata*) as a rich source of cobalamin (vitamin B12) – both as processed whole biomass and as an extracted protein ingredient**
Trigo, J. P., Chamlagain, B., Thóren, J., Strand, R., Vall-Iloera Juanola, M., Steinhagen, S., Kinnby, A., Toth, G., Kariluoto, S. & Undeland, I., 15 Aug 2025, In: Food Chemistry. 483, 7 p., 144302.
2. **Fermentation of faba bean flour as a pre-treatment in high-moisture extrusion for simultaneous fortification of vitamin B12 and reduction of raffinose oligosaccharides in meat analogues**
Kantaneen, K. A., Chamlagain, B., Succi, V., Seppänen, S. T. M., Edelmann, M., Siitonen, A., Kemppinen, L. K., Kemppinen, A., Kangas, M. H., Varmanen, P., Piironen, V. & Jouppila, K., 5 Dec 2024, In: Future Foods. 10, 100518.
3. **Aerobic adaptation and metabolic dynamics of *Propionibacterium freudenreichii* DSM 20271: insights from comparative transcriptomics and surfaceome analysis**
Loivamaa, I., Sillanpää, L. A., Deptula, P., Chamlagain, B., Edelmann, M., Auvinen, P., Nyman, T. A., Savijoki, K., Piironen, V. & Varmanen, P., Oct 2024, In: mSystems. 9, 10, 26 p.
4. **Vitamin B12 production in solubilized protein extract of bioprocessed wheat bran with *Propionibacterium freudenreichii***
Chamlagain, B., Edelmann, M., Katina, K., Varmanen, P. & Piironen, V., 15 Jan 2024, In: LWT-Food Science and Technology. 192, 7 p., 115731.
5. **Oxygen modulates cobalamin requirement but not riboflavin in *Propionibacterium freudenreichii* growth**
Zhang, R., Sha, Y., Chamlagain, B., Edelmann, M., Savijoki, K., Piironen, V., Deptula, P. & Varmanen, P., 2024, In: Research Square.
6. **Food by-product valorisation in nutrients through spent brewer's yeast bioprocessing with *Propionibacterium freudenreichii***
Kruk, M., Varmanen, P., Edelmann, M., Chamlagain, B. & Trzaskowska, M., 14 Dec 2023, In: Journal of Cleaner Production.
7. **In situ production of vitamin B12 and dextran in soya flour and rice bran: A tool to improve flavour and texture of B12-fortified bread**
Wang, Y., Xie, C., Pulkkinen, M., Edelmann, M., Chamlagain, B., Coda, R., Sandell, M., Piironen, V., Maina, N. & Katina, K., 1 May 2022, In: LWT-Food Science and Technology. 161, 113407, 12 p., 113407.
8. **Fermentation of cereal, pseudo-cereal and legume materials with *Propionibacterium freudenreichii* and *Levilactobacillus brevis* for vitamin B12 fortification**
Xie, C., Coda, R., Chamlagain, B., Edelmann, M., Varmanen, P., Piironen, V. & Katina, K., Feb 2021, In: LWT-Food Science and Technology. 137, 9 p., 110431.
9. **Bioaccessibility of vitamin B12 synthesized by *Propionibacterium freudenreichii* and from products made with fermented wheat bran extract**
Chamlagain, B., Peltonen, L., Edelmann, M., Ramos-Diaz, J. M., Kemppinen, A., Jouppila, K., Varmanen, P. & Piironen, V., 2021, In: Current research in food science. 4, p. 499-502 4 p.
10. **Niacin contents of cereal-milling products in food-composition databases need to be updated**
Chamlagain, B., Rautio, S., Edelmann, M., Ollilainen, V. & Piironen, V., Aug 2020, In: Journal of Food Composition and Analysis. 91, 7 p., 103518.
11. **Riboflavin, niacin, folate and vitamin B12 in commercial microalgae powders**
Edelmann, M., Aalto, S., Chamlagain, B., Kariluoto, S. & Piironen, V., Sept 2019, In: Journal of Food Composition and Analysis. 82, 10 p., 103226.

12. **Co-fermentation of *Propionibacterium freudenreichii* and *Lactobacillus brevis* in Wheat Bran for in situ Production of Vitamin B12**
Xie, C., Coda, R., Chamlagain, B., Varmanen, P., Piironen, V. & Katina, K., 5 Jul 2019, In: *Frontiers in Microbiology*. 10, July, 10 p., 1541.
13. **In situ fortification of vitamin B12 in wheat flour and wheat bran by fermentation with *Propionibacterium freudenreichii***
Xie, C., Coda, R., Chamlagain, B., Edelmann, M., Deptula, P., Varmanen, P., Piironen, V. & Katina, K., 4 May 2018, In: *Journal of Cereal Science*. 81, p. 133-139 7 p.
14. **In situ production of active vitamin B12 in cereal matrices using *Propionibacterium freudenreichii***
Chamlagain, B., Sugito, T. A., Deptula, P., Edelmann, M., Kariluoto, S., Varmanen, P. & Piironen, V., Jan 2018, In: *Food Science & Nutrition*. 6, 1, p. 67-76 10 p.
15. **Microbial Metabolic Networks at the Mucus Layer Lead to Diet-Independent Butyrate and Vitamin B12 Production by Intestinal Symbionts**
Belzer, C., Chia, L. W., Aalvink, S., Chamlagain, B., Piironen, V., Knol, J. & de Vos, W. M., 19 Sept 2017, In: *mBio*. 8, 5, 14 p., ARTN e00770-17.
16. **Biofortification of riboflavin and folate in idli batter, based on fermented cereal and pulse, by *Lactococcus lactis* N8 and *Saccharomyces boulardii* SAA655**
Rajendran, S. C. C., Chamlagain, B., Kariluoto, S., Piironen, V. & Saris, P. E., 3 May 2017, In: *Journal of Applied Microbiology*. 122, 6, p. 1663-1671 9 p.
17. **Food-Like Growth Conditions Support Production of Active Vitamin B12 by *Propionibacterium freudenreichii* 2067 without DMBI, the Lower Ligand Base, or Cobalt Supplementation**
Deptula, P., Chamlagain, B., Edelmann, M., Sangsuwan, P., Nyman, T. A., Savijoki, K., Piironen, V. & Varmanen, P., 8 Mar 2017, In: *Frontiers in Microbiology*. 8, 11 p., 368.
18. **Comparative genomics and physiology of the butyrate-producing bacterium *Intestinimonas butyriciproducens***
Nam Bui, T. P., Shetty, S., Lagkouravdos, I., Ritari, J., Chamlagain, B., Douillard, F., Paulin, L. G., Piironen, V., Clavel, T., Plugge, C. M. & de Vos, W. M., 7 Oct 2016, In: *Environmental microbiology reports*. 8, 6, p. 1024-1037 14 p.
19. **Stability of added and in situ-produced vitamin B12 in breadmaking**
Edelmann, M., Chamlagain, B. S., Santin, M., Kariluoto, S. & Piironen, V., 10 Feb 2016, In: *Food Chemistry*. 204, p. 21-28 8 p.
20. **Effect of the lower ligand precursors on vitamin B12 production by food-grade *Propionibacteria***
Chamlagain, B., Deptula, P., Edelmann, M., Kariluoto, S., Grattepanche, F., Lacroix, C., Varmanen, P. & Piironen, V., 2016, In: *LWT-Food Science and Technology*. 72, p. 117-124 8 p.
21. **Letter to the editor on 'Enhancing vitamin B₁₂ content in soy-yogurt by *Lactobacillus reuteri*, IJFM. 206:56–59'**
Varmanen, P. K., Deptula, P., Chamlagain, B. S. & Piironen, V. I., 2016, In: *International Journal of Food Microbiology*. 228, p. 33 1 p.
22. **BluB/CobT2 fusion enzyme activity reveals mechanisms responsible for production of active form of vitamin B 12 by *Propionibacterium freudenreichii***
Deptula, P., Kylli, P. T., Chamlagain, B. S., Holm, L. U. T., Kostiaainen, R. K., Piironen, V. I., Savijoki, K. K. & Varmanen, P. K., 23 Nov 2015, In: *Microbial Cell Factories*. 14, 12 p., 186 .
23. **Ultra-high performance liquid chromatographic and mass spectrometric analysis of active vitamin B12 in cells of *Propionibacterium* and fermented cereal matrices**
Chamlagain, B., Edelmann, M., Kariluoto, S., Ollilainen, V. & Piironen, V., 2015, In: *Food Chemistry*. 166, p. 630-638 9 p.
24. **Trends of antibiotic resistance in mesophilic and psychrotrophic bacterial populations during cold storage of raw milk**
Munsch-Alatossava, P., Gauchi, J.-P., Chamlagain, B. & Alatossava, T., 2012, In: *ISRN Microbiology*. 2012, Art. No. 918208, 13 p.

Peer-reviews

1. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2025
2. **Food production, processing and nutrition (Journal)**
Chamlagain, B. (Reviewer)
2025
3. **Food Research International (Journal)**
Chamlagain, B. (Reviewer)
2025

4. **Food Microbiology (Journal)**
Chamlagain, B. (Reviewer)
2024
5. **Frontiers in nutrition (Journal)**
Chamlagain, B. (Reviewer)
2024
6. **International Journal of Food Microbiology (Journal)**
Chamlagain, B. (Reviewer)
2024
7. **Journal of Applied Phycology (Journal)**
Chamlagain, B. (Reviewer)
2024
8. **Journal of Food Composition and Analysis (Journal)**
Chamlagain, B. (Reviewer)
2024
9. **LWT-Food Science and Technology (Journal)**
Chamlagain, B. (Reviewer)
2024
10. **Frontiers in Microbiology (Journal)**
Chamlagain, B. (Reviewer)
2023
11. **Frontiers in nutrition (Journal)**
Chamlagain, B. (Reviewer)
2023
12. **LWT-Food Science and Technology (Journal)**
Chamlagain, B. (Reviewer)
2023
13. **Sustainable food technology (Journal)**
Chamlagain, B. (Reviewer)
2023
14. **Antonie van Leeuwenhoek (Journal)**
Chamlagain, B. (Reviewer)
2022
15. **Applied Microbiology and Biotechnology (Journal)**
Chamlagain, B. (Reviewer)
2022
16. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2022
17. **Frontiers in nutrition (Journal)**
Chamlagain, B. (Reviewer)
2022
18. **Microbial Cell Factories (Journal)**
Chamlagain, B. (Reviewer)
2022
19. **Microbial Cell Factories (Journal)**
Chamlagain, B. (Reviewer)
2022
20. **ACS food science & technology (Journal)**
Chamlagain, B. (Reviewer)
2021
21. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2021
22. **Frontiers in Microbiology (Journal)**
Chamlagain, B. (Reviewer)
2021
23. **Frontiers in nutrition (Journal)**
Chamlagain, B. (Reviewer)
2021

24. **Frontiers in nutrition (Journal)**
Chamlagain, B. (Reviewer)
2021
25. **Journal of Food Composition and Analysis (Journal)**
Chamlagain, B. (Reviewer)
2021
26. **Journal of Food Composition and Analysis (Journal)**
Chamlagain, B. (Reviewer)
2021
27. **LWT-Food Science and Technology (Journal)**
Chamlagain, B. (Reviewer)
2021
28. **LWT-Food Science and Technology (Journal)**
Chamlagain, B. (Reviewer)
2021
29. **Microorganisms (Journal)**
Chamlagain, B. (Reviewer)
2021
30. **Biocatalysis and agricultural biotechnology (Journal)**
Chamlagain, B. (Reviewer)
2020
31. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2020
32. **Foods (Journal)**
Chamlagain, B. (Reviewer)
2020
33. **Food analytical methods (Journal)**
Chamlagain, B. (Reviewer)
2019
34. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2019
35. **Journal of food science and technology Nepal (Journal)**
Chamlagain, B. (Reviewer)
2019
36. **LWT-Food Science and Technology (Journal)**
Chamlagain, B. (Reviewer)
2019
37. **Preparative Biochemistry and Biotechnology (Journal)**
Chamlagain, B. (Reviewer)
2019
38. **Food Chemistry (Journal)**
Chamlagain, B. (Reviewer)
2018
39. **International Journal for Vitamin and Nutrition Research (Journal)**
Chamlagain, B. (Reviewer)
2018
40. **Journal of food science and technology Nepal (Journal)**
Chamlagain, B. (Reviewer)
2018
41. **Antonie van Leeuwenhoek (Journal)**
Chamlagain, B. (Reviewer)
2017

Editorial work

Frontiers in nutrition (Journal)
Chamlagain, B. (Member of editorial board)
2021 → 2022

Conferences

1. **7th International Vitamin Conference 2023, 20-22 September Copenhagen**
Chamlagain, B. (Speaker: Presenter)
20 Sept 2023 → 22 Sept 2023
2. **6th International Vitamin Conference 2021 22-24 September Copenhagen**
Chamlagain, B. (Speaker: Presenter)
22 Sept 2021 → 24 Sept 2021
3. **4th International Vitamin Conference (25-27 May 2016), Copenhagen, Denmark**
Chamlagain, B. (Speaker: Presenter)
25 May 2016 → 27 May 2016
4. **EURO FOOD CHEM XVIII**
Chamlagain, B. (Poster Presentation)
13 Oct 2015 → 16 Oct 2015
5. **The 32nd Nordic Cereal Congress: Future Food Security – New Opportunities for Nordic Crops**
Chamlagain, B. (Speaker: Presenter)
7 Sept 2015 → 9 Sept 2015
6. **3rd International Vitamin Conference (12-15 May 2014, Washington, DC, USA)**
Chamlagain, B. (Poster Presentation)
12 May 2014 → 15 May 2014
7. **V Symposium on Sourdough: Cereal Fermentation for Future Foods 2012, 10-12 October 2012, Helsinki, Finland**
Chamlagain, B. (Poster Presentation)
10 Oct 2012 → 12 Oct 2012
8. **2nd International Vitamin Conference, 23-25 May 2012, Copenhagen, Denmark**
Chamlagain, B. (Poster Presentation)
23 May 2012 → 25 May 2012

Prizes

1. **"Best Doctoral Dissertation Award" by The Finnish Society of Food Science and Technology (ETS)**
Chamlagain, B. (Recipient), 21 Mar 2017
2. **"Best Doctoral Thesis Award" by Doctoral Programme in Food Chain and Health**
Chamlagain, B. (Recipient), 15 Nov 2017

Projects

1. **Leg4Life: Palkokasveilla kohti kestäväää ruokajärjestelmää ja terveyttä**
Jouppila, K. (Project manager), Pajari, A.-M. (Project manager), Simojoki, A. (Project manager), Vanhatalo, A. (Project manager), Ahrends, H. E. (Participant), Alitalo, J. J. J. (Participant), Bäck, S. (Participant), Chamlagain, B. (Participant), Ferdous, Z. (Participant), Hashim, M. A. M. A. (Participant), Honkanen, A. (Participant), Immonen, H. M. A. (Participant), Itkonen, S. (Participant), Karanko, I. M. W. (Participant), Kemppainen, M. S. (Participant), Kemppinen, L. K. (Participant), Kemppinen, A. (Participant), Koivula, A. P. A. (Participant), Korpinen, K. Y. E. (Participant), Kostiaainen, H. E. (Participant), Kumpulainen, R. M. K. (Participant), Kuosmanen, S. (Participant), Lamminen, M. (Participant), Le Rouzic, C. M. S. (Participant), Lundberg, M. A. (Participant), Mäkelä, A. M. (Participant), Nieminen, F. H. (Participant), Nikander, V. (Participant), Oja-Lipasti, R. E. (Participant), Pellinen, T. M. (Participant), Pietarinen, J. I. (Participant), Pietilä, T. K. M. (Participant), Rahikkala, O. S. E. (Participant), Rummukainen, N. J. (Participant), Räisänen, S. E. (Participant), Silfverhuth, J. S. M. (Participant), Toivokoski, L. A. (Participant) & Toivonen, V. E. (Participant)
Academy of Finland, Suomen Akatemia Projektilaskutus
01/09/2022 → 31/08/2025
2. **B12WEGAIN: Natural vitamin B12 fortification of future foods by bioprocessing and controlled cell-lysis of *Propionibacterium freudenreichii***
Varmanen, P. (Project manager), Piironen, V. (Principal Investigator), Sillanpää, L. A. (Participant), Loivamaa, I. (Participant), Savijoki, K. (Participant), Chamlagain, B. (Participant) & Edelmann, M. (Participant)
01/01/2021 → 31/12/2023
3. **B-GELS: Water-in-oleogel emulsions as vitamin B12 delivery and protective systems for plant-based products (Faculty of Agriculture and Forestry Proof of Concept Grant, University of Helsinki)**
Valoppi, F. (Co-Principal Investigator) & Chamlagain, B. (Co-Principal Investigator)
01/09/2020 → 31/12/2020

4. **Leg4Life: Legumes for sustainable food system and healthy life**
Pajari, A.-M. (Principal Investigator), Piironen, V. (Co-Principal Investigator), Vanhatalo, A. (Participant), Simojoki, A. (Participant), Jouppila, K. (Participant), Kariluoto, S. (Participant), Päivärinta, E. (Participant), Konttinen, H. (Participant), Hyytiäinen, K. (Participant), Lombardini (former Lombardini-Riipinen), C. (Participant), Lamminen, M. (Participant), Alakukku, L. (Participant), Chamlagain, B. (Participant), Coda, R. (Participant), Ertbjerg, P. (Participant), Edelmann, M. (Participant), Halmemies-Beauchet-Filleau, A. (Participant), Itkonen, S. (Participant), Katina, K. (Participant), Knaapila, A. (Participant), Kokkonen, T. (Participant), Kuoppala, K. (Participant), Lampi, A.-M. (Participant), Mäkelä, P. (Participant), Nurmi, V. (Participant), Ramos-Diaz, J. M. (Participant), Salonen, A. (Participant), Sandell, M. (Participant), Sihvonen, M. (Participant), Sontag-Strohm, T. (Participant), Stoddard, F. (Participant), Tenkanen, M. (Participant) & Varmanen, P. (Project manager)
01/06/2019 → 31/08/2025

5. **Molecular basis for natural vitamin B12 fortification of emerging new foods by utilization of *Propionibacterium freudenreichii***
Piironen, V. (Principal Investigator), Loivamaa, I. (Participant), Edelmann, M. (Participant), Chamlagain, B. (Participant), Savijoki, K. (Participant), Varmanen, P. (Project manager), Sillanpää, L. A. (Participant) & Zhang, R. (Participant)
01/09/2019 → 31/08/2023

6. **BIOB12: Vitamin B12-bioenriched wheat bran ingredients for food applications (BIOB12)**
Piironen, V. (Project manager), Chamlagain, B. (Participant), Edelmann, M. (Participant), Varmanen, P. (Participant) & Katina, K. (Participant)
01/07/2018 → 30/06/2019

7. **BIOFORCE: Bio-enriched bran ingredients - in situ synthesis of vitamin B12 and folate with propionibacteria and lactic acid bacteria**
Piironen, V. (Project manager), Varmanen, P. (Principal Investigator), Chamlagain, B. (Participant), Edelmann, M. (Participant) & Katina, K. (Principal Investigator)
01/03/2017 → 31/03/2018

8. **Natural Fortification of Foods: Microbial in situ Synthesis of Vitamin B12 and Folate in Cereal Matrix**
Piironen, V. (Project manager), Varmanen, P. (Principal Investigator), Chamlagain, B. (Participant), Deptula, P. (Participant), Edelmann, M. (Participant), Kariluoto, S. (Participant), Ollilainen, V. (Participant), Nyman, T. (Principal Investigator), Korhola, M. (Participant), Lampi, A.-M. (Participant) & Salovaara, H. (Principal Investigator)
01/09/2012 → 31/08/2016

9. **FOLAFIBRE-Aqueous processing of oats and barley...**
Piironen, V. (Other), Lampi, A.-M. (Participant), Kariluoto, S. (Participant), Edelmann, M. (Participant), Nyström, L. (Participant), Pokela, L. (Other), Chamlagain, B. (Other) & Koivumäki, T. (Participant)
01/01/2007 → 31/12/2010