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DAFTAR PUSTAKA

Abdel-Rahman, M.A., Tashiro, Y. and Sonomoto, K. 2011. Lactic acid production from lignocellulose-derived sugars using lactic acid bacteria: Overview and limits. Journal of Biotechnology, 156 (4), 286–301.

Abebe, B. 2022. The Dietary Use of Pigeon Pea for Human and Animal Diets. Scientific World Journal, 202 (12), 213–224.

Abouelela, M.E. and Helmy, Y.A. 2024. Next-Generation Probiotics as Novel Therapeutics for Improving Human Health: Current Trends and Future Perspectives. Microorganisms, 12 (3), 91–117.

Agbai, J.U., Njoku, O.I., Nancy, P.I., Eberechukwu, L.M. and Chamberlin, J.E. 2023. Effect of ethanolic leaf extract of Mucuna pruriens (velvet bean) on the pancreas and pituitary gland of alloxan-induced diabetic rats. World Journal of Advanced Research and Reviews, 19 (3), 30–39.

Agustina, W. and Andriana, Y. 2010. Karakterisasi Produk Yoghurt Susu Nabati Kacang Hijau (Phaseolus radiatus L.). Journal of the Science of Food and Agriculture, 12 (2), 32–36.

Ahmed, S., Singh, S., Singh, V., Roberts, K.D., Zaidi, A. and Rodriguez-Palacios, A. 2022. The Weissella Genus: Clinically Treatable Bacteria with Antimicrobial/Probiotic Effects on Inflammation and Cancer. Microorganisms, 10 (12), 23–28.

Aiello, A., Pizzolongo, F., De Luca, L., Blaiotta, G., Aponte, M., Addeo, F. and Romano, R. 2023. Production of butyric acid by different strains of Lactobacillus plantarum (Lactiplantibacillus plantarum). International Dairy Journal, 140 (23), 113–120.

Ajdžanović, V., Medigović, I., Živanović, J., Šošić-Jurjević, B., Trifunović, S., Tanić, N. and Milošević, V. 2014. IMMUNO-Histomorphometric and - fluorescent characteristics of gh cells after treatment with genistein or daidzein in an animal model of andropause. Acta Veterinaria, 64 (1), 34–39.

Akoma, O., Elekwa, U.O., Afodunrinbi, A.T. and Onyeukwu, G.C. 2000. Yogurt from Coconut and Tigernuts. Journal of Food Technology in Africa, 5 (4), 132–133.

Akyun. 2017. Analisis Senyawa Isoflavon Daidzin dan Daidzein pada Yoghurt Kacang Gude (Cajanus cajan). Prosiding Seminar Nasional SIMBIOSIS II, PGRI Madiun, Madiun, 402–409.

Albuquerque, R.C.V., Silva, C.E.D.F., Carneiro, W.D.S., Andreola, K., Da Gama, B.M.V., Silva, A.E.D., Correia, R., et al. 2024. Incorporation of Cyanobacteria and Microalgae in Yogurt: Formulation Challenges and Nutritional, Rheological, Sensory, and Functional Implications. Applied Microbiology, 4 (4), 1493–1514.

Aleman, R.S., Marcia, J., Page, R., Kazemzadeh Pournaki, S., Martín-Vertedor, D., Manrique-Fernández, V., Montero-Fernández, I., et al. 2023. Effects of Yogurt with Carao (Cassia grandis) on Intestinal Barrier Dysfunction, α-glycosidase Activity, Lipase Activity, Hypoglycemic Effect, and Antioxidant Activity. Fermentation, 9 (6), 1–25.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Al-Ishaq, R.K., Abotaleb, M., Kubatka, P., Kajo, K. and Büsselberg, D. 2019. Flavonoids and their anti-diabetic effects: Cellular mechanisms and effects to improve blood sugar levels. Biomolecules, 9 (9), 1–35.

Amelia, R., Philip, K., Pratama, Y.E. and Purwati, E. 2021. Characterization and probiotic potential of lactic acid bacteria isolated from dadiah sampled in West Sumatra. Food Science and Technology (Brazil), 41 (15), 25–31.

Antony, P., Baby, B., Aleissaee, H.M. and Vijayan, R. 2022. A Molecular Modeling Investigation of the Therapeutic Potential of Marine Compounds as DPP-4 Inhibitors. Marine Drugs, 20 (12), 1–14.

AOAC. 2005. Association of Official Analytical Chemist, Washington DC (US), 18th edition. Official Methods of Analysis of AOAC International.

Arena, M.P., Caggianiello, G., Russo, P., Albenzio, M., Massa, S., Fiocco, D., Capozzi, V., et al. 2015. Functional starters for functional yogurt. Foods, 4 (1), 221-237.

Argyri, A.A., Zoumpopoulou, G., Karatzas, K.A.G., Tsakalidou, E., Nychas, G.J.E., Panagou, E.Z. and Tassou, C.C. 2013. Selection of potential probiotic lactic acid bacteria from fermented olives by in vitro tests. Food Microbiology, 33 (2), 15–23.

Arora, T. and Tremaroli, V. 2021. Therapeutic Potential of Butyrate for Treatment of Type 2 Diabetes. Frontiers in Endocrinology, 12 (76), 1–10.

Asarat, M., Vasiljevic, T., Ravikumar, M., Apostolopoulos, V. and Donkor, O. 2016. Extraction and Purification of Short-chain Fatty Acids from Fermented Reconstituted Skim Milk Supplemented with Inulin. Food Analytical Methods, 9 (11), 34–41.

Asemi, Z., Zare, Z., Shakeri, H., Sabihi, S.S. and Esmaillzadeh, A. 2013. Effect of multispecies probiotic supplements on metabolic profiles, hs-CRP, and oxidative stress in patients with type 2 diabetes. Annals of Nutrition and Metabolism, 63 (1–2), 1–14.

Assamoi, A.A., Krabi, E.R., Ehon, A.F., N'guessan, G.A., Niamké, L.S. and Thonart, P. 2016. Isolation and screening of Weissella strains for their potential use as starter during attiéké production. BASE, 21 (5), 19–26.

Audu, S.S. and Aremu, M.O. 2011. Effect of processing on chemical composition of red kidney bean (Phaseolus vulgaris L.) flour. Pakistan Journal of Nutrition, 10 (11), 1069–1075.

Ayesha, I.E., Monson, N.R., Klair, N., Patel, U., Saxena, A., Patel, D. and Venugopal, S. 2023. Probiotics and Their Role in the Management of Type 2 Diabetes Mellitus (Short-Term Versus Long-Term Effect): A Systematic Review and Meta-Analysis. Cureus, 15 (10), 1–14.

Ayivi, R.D., Gyawali, R., Krastanov, A., Aljaloud, S.O., Worku, M., Tahergorabi, R., Silva, R.C. da, et al. 2020. Lactic Acid Bacteria: Food Safety and Human Health Applications. Dairy, 1 (3), 202–232.

Bahram, M., Anslan, S., Hildebrand, F., Bork, P. and Tedersoo, L. 2019. Newly designed 16S rRNA metabarcoding primers amplify diverse and novel archaeal taxa from the environment. Environmental Microbiology Reports, 11 (4), 487–494.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ballogou, V.Y., Dossou, J. and de Souza, C.A. 2011. Controlled Drying Effect on the Quality of Sorghum Malts Used for the Chakpalo Production in Benin. Food and Nutrition Sciences, 2 (2), 106–113.

Balogun, M.A., Ahmed, R.N., Akintayo, O.A., Aruna, T.E., Omovbude, M.O. and Shittu, T. 2021. Microbial, chemical and sensory evaluation of pigeon pea condiment from wild and controlled fermentation. Ceylon Journal of Science, 50 (3), 25–31.

Ban, Q., Cheng, J., Sun, X., Jiang, Y., Zhao, S., Song, X. and Guo, M. 2020. Effects of a synbiotic yogurt using monk fruit extract as sweetener on glucose regulation and gut microbiota in rats with type 2 diabetes mellitus. Journal of Dairy Science, 103 (4), 2956–2968.

Bayraktar, H. and Önal, S. 2019. Cross-linked α-galactosidase aggregates: optimization, characterization and application in the hydrolysis of raffinose-type oligosaccharides in soymilk. Journal of the Science of Food and Agriculture, 99 (10), 137–156.

Beermann, C. and Hartung, J. 2013. Physiological properties of milk ingredients released by fermentation. Food and Function, 4 (2), 185–199.

Begbulem, C.O., Ene, A.C., Nwanpka, P., Chikezie, P.C. and Igwe, C.U. 2017. Effect of wood charcoal powder on rate of microbial production of lactic acid in dehulled and undehulled *Vigna unguiculata* pastes. Journal of Nutrition & Food Science, 7 (587),2.

Beltrame, T.P. and Rodrigues, E. 2007. Feijão guandu (Cajanus cajan (L.) Millsp.) na restauração de florestas tropicais. Semina Ciênc. Agrar., 28 (1), 19–28.

Berger, J.P., SinhaRoy, R., Pocai, A., Kelly, T.M., Scapin, G., Gao, Y., Pryor, K.A.D., et al. 2018. A comparative study of the binding properties, dipeptidyl peptidase-4 (DPP-4) inhibitory activity and glucose-lowering efficacy of the DPP-4 inhibitors alogliptin, linagliptin, saxagliptin, sitagliptin and vildagliptin in mice. Endocrinology, Diabetes & Metabolism, 1 (1), 1–18.

Bevilacqua, A.E. and Califano, A.N. 1989. Determination of Organic Acids in Dairy Products by High Performance Liquid Chromatography. Journal of Food Science, 54 (4), 411–419.

Bharti, S.K., Krishnan, S., Kumar, A., Rajak, K.K., Murari, K., Bharti, B.K. and Gupta, A.K. 2013. Antidiabetic activity and molecular docking of fructooligosaccharides produced by Aureobasidium pullulans in poloxamer-407-induced T2DM rats. Food Chemistry, 136 (2), 813–821.

Bhavadharini, B., Dehghan, M., Mente, A., Rangarajan, S., Sheridan, P., Mohan, V., Iqbal, R., et al. 2020. Association of dairy consumption with metabolic syndrome, hypertension and diabetes in 147,812 individuals from 21 countries. BMJ Open Diabetes Research & Care, 8 (1), 1–18.

Birch, C.S. and Bonwick, G.A. 2019. Ensuring the future of functional foods. International Journal of Food Science and Technology, 54(5), 1467–1485.

Borkar, S., Dholariya, P.K. and Borah, A. 2021. Functional foods, their components and relevant health benefits: A review. *The Pharma Innovation*, 10(5), 204–210.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Brahmi, F., Mateos-Aparicio, I., Garcia-Alonso, A., Abaci, N., Saoudi, S., Smail-Benazzouz, L., Guemghar-Haddadi, H., et al. 2022. Optimization of Conventional Extraction Parameters for Recovering Phenolic Compounds from Potato (Solanum tuberosum L.) Peels and Their Application as an Antioxidant in Yogurt Formulation. Antioxidants, 11 (7), 1–21.

Brand-Williams, W., Cuvelier, M.E. and Berset, C. 1995. Use of a free radical method to evaluate antioxidant activity. LWT - Food Science and Technology, 28 (1), 25–30.

Brehm-Stecher, B.F. and Johnson, E.A. 2003. Sensitization of Staphylococcus aureus and Escherichia coli to antibiotics by the sesquiterpenoids nerolidol, farnesol, bisabolol, and apritone. Antimicrobial Agents and Chemotherapy, 47 (10), 3357–3360.

Bruzantin, F.P., Daniel, J.L.P., da Silva, P.P.M. and Spoto, M.H.F. 2016. Physicochemical and sensory characteristics of fat-free goat milk yogurt with added stabilizers and skim milk powder fortification. Journal of Dairy Science, 99 (5), 3316–3324.

BSN, B.S.N. 2009. SNI Yoghurt (SNI 2981:2009). Dewan Standardisasi Nasional, 1183–1196.

Buettner, R., Schölmerich, J. and Bollheimer, L.C. 2007. High-fat diets: modeling the metabolic disorders of human obesity in rodents. *Obesity*, 15(4), 798–808.

Di Cagno, R., Coda, R., De Angelis, M. and Gobbetti, M. 2013. Exploitation of vegetables and fruits through lactic acid fermentation. Food Microbiology, 33 (1), 1–10.

Di Cagno, R., Mazzacane, F., Rizzello, C.G., Vincentini, O., Silano, M., Giuliani, G., De Angeli, M., et al. 2010. Synthesis of isoflavone aglycones and equol in soy milks fermented by food-related lactic acid bacteria and their effect on human intestinal caco-2 cells. Journal of Agricultural and Food Chemistry, 58 (19), 4151-4159.

Cai, Z., Guo, Y., Zheng, Q., Liu, Z., Zhong, G., Zeng, L., Huang, M., et al. 2024. Screening of a potential probiotic Lactiplantibacillus plantarum NUC08 and its synergistic effects with yogurt starter. Journal of Dairy Science, 107 (5), 511-523.

Campana, R., Van Hemert, S. and Baffone, W. 2017. Strain-specific probiotic properties of lactic acid bacteria and their interference with human intestinal pathogens invasion. Gut Pathogens, 9 (1), 315-320.

Canbulat, Z. and Ozcan, T. 2015. Effects of Short-Chain and Long-Chain Inulin on the Quality of Probiotic Yogurt Containing Lactobacillus rhamnosus. Journal of Food Processing and Preservation, 39 (6), 1251–1260.

Cattivelli, A., Conte, A., Martini, S. and Tagliazucchi, D. 2022. Cooking and In Vitro Digestion Modulate the Anti-Diabetic Properties of Red-Skinned Onion and Dark Purple Eggplant Phenolic Compounds. Foods (Basel, Switzerland), 11 (5), 689–697.

Chang, S.Y., Kim, D.H. and Han, M.J. 2010. Physicochemical and sensory characteristics of soy yogurt fermented with Bifidobacterium breve K-110, Streptococcus thermophilus 3781, or Lactobacillus acidophilus Q509011. Food Science and Biotechnology, 19 (1), 415-427.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Chang, Y.H., Jeong, C.H., Cheng, W.N., Choi, Y., Shin, D.M., Lee, S. and Han, S.G. 2021. Quality characteristics of yogurts fermented with short-chain fatty acid-producing probiotics and their effects on mucin production and probiotic adhesion onto human colon epithelial cells. Journal of Dairy Science, 104 (7), 7415–7425.

Chen, G.L., Chen, S.G., Xiao, Y. and Fu, N.L. 2018. Antioxidant capacities and total phenolic contents of 30 flowers. Industrial Crops and Products, 111 (1), 430–445.

Chen, L., Chen, N., He, Q., Sun, Q. and Zeng, W.C. 2021. Preparation of a functional yogurt with Ligustrum robustum (Rxob.) Blume and its action mechanism. Journal of Food Science, 86 (3), 1114–1123.

Chen, L., L., R., V., P., Li, L. and Wang, W. 2013. Value-Added Products from Soybean: Removal of Anti-Nutritional Factors via Bioprocessing. Soybean - Bio-Active Compounds, InTech, 17 (50), 612-623.

Chen, X., Singh, M., Bhargava, K. and Ramanathan, R. 2018. Yogurt Fortification with Chickpea (Cicer arietinum) Flour: Physicochemical and Sensory Effects. JAOCS, Journal of the American Oil Chemists' Society, 95 (8), 4-16.

Chen, Y.C., Hsieh, S.L. and Hu, C.Y. 2020. Effects of red-bean tempeh with various strains of rhizopus on gaba content and cortisol level in zebrafish. Microorganisms, 8 (9), 1–12.

Chetachukwu, A.S., Thongraung, C. and Yupanqui, C.T. 2018. Effect of short-chain inulin on the rheological and sensory characteristics of reduced fat set coconut milk yoghurt. Journal of Texture Studies, 49 (4), 5-25.

Chien, S., Wang, J., Wan, R., Mo, Y., Zhang, Q. and Sherwood, L.C. 2010. Creating a long-term diabetic rabbit model. Experimental Diabetes Research, 2010 (12), 289–296.

Choi, C.W., Choi, Y.H., Cha, M.R., Yoo, D.S., Kim, Y.S., Yon, G.H., Hong, K.S., et al. 2010. Yeast α-glucosidase inhibition by isoflavones from plants of leguminosae as an in vitro alternative to acarbose. Journal of Agricultural and Food Chemistry, 58 (18), 9988–9993.

Chondrou, T., Adamidi, N., Lygouras, D., Hirota, S.A., Androutsos, O. and Svolos, V. 2024. Dietary Phytic Acid, Dephytinization, and Phytase Supplementation Alter Trace Element Bioavailability—A Narrative Review of Human Interventions. Nutrients, 16 (23), 4069.

Chou, L.S. and Weimer, B. 1999. Isolation and characterization of acid- and bile-tolerant isolates from strains of Lactobacillus acidophilus. Journal of Dairy Science, 82 (1), 23–31.

Cichońska, P. and Ziarno, M. 2022. Legumes and legume-based beverages fermented with lactic acid bacteria as a potential carrier of probiotics and prebiotics. Microorganisms, 10 (1), 34-39.

Cirunay, A.R.T., Mopera, L.E., Sumague, M.J.V. and Bautista, J.A.N. 2021. In vitro fermentation and prebiotic potential of pigeon pea (Cajanus cajan (L.) Millsp.) flour. Food Research, 5 (1), 1–8.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Citta, A., Folda, A., Scalcon, V., Scutari, G., Bindoli, A., Bellamio, M., Feller, E., et al. 2017. Oxidative changes in lipids, proteins, and antioxidants in yogurt during the shelf life. Food Science & Nutrition, 5 (6), 1079–1087.

Codex. 2003. Codex Standards for Fermented Milks. In General Standard for the Labelling of Prepackaged Foods, Vol. 243, 1–7.

Considine, T., Patel, H.A., Anema, S.G., Singh, H. and Creamer, L.K. 2007. Interactions of milk proteins during heat and high hydrostatic pressure treatments - A Review. Innovative Food Science and Emerging Technologies, 8 (1), 12-25.

Craig, W.J. and Brothers, C.J. 2021. Nutritional content and health profile of non-dairy plant-based yogurt alternatives. Nutrients, 13 (11), 1–13.

De Coster, W., D'Hert, S., Schultz, D.T., Cruts, M. and Van Broeckhoven, C. 2018. NanoPack: visualizing and processing long-read sequencing data. Bioinformatics (Oxford, England), 34 (15), 2666–2669.

de Almeida Júnior, W.L.G., Ferrari, Í. da S., de Souza, J.V., da Silva, C.D.A., da Costa, M.M. and Dias, F.S. 2015. Characterization and evaluation of lactic acid bacteria isolated from goat milk. Food Control, 53 (7), 96–105.

Damian, C. and Olteanu, A. 2014. Influence of dietary fiber from pea on some quality characteristics of yoghurts. Journal of Agroalimentary Processes and Technologies, 20 (2), 156–0.

Daniel, N., Nachbar, R.T., Tran, T.T.T., Ouellette, A., Varin, T.V., Cotillard, A., Quinquis, L., et al. 2022. Gut microbiota and fermentation-derived branched chain hydroxy acids mediate health benefits of yogurt consumption in obese mice. Nature Communications, 13 (1), 1–12.

Das, S., Mishra, B.K. and Hati, S. 2021. Impact of Lactobacillus cultures on production of B-vitamins, organic acids and biotransformation of soy isoflavones. Acta Alimentaria, 50 (1), 1–12.

Das, S., Sharangi, A.B., Egbuna, C., Jeevanandam, J., Ezzat, S.M., Adetunji, C.O., Tijjani, H., et al. 2020. Health Benefits of Isoflavones Found Exclusively in Plants of the Fabaceae Family. Functional Foods and Nutraceuticals, 1–18.

Das, S. and Tamang, J.P. 2023. Metagenomics and metabolomics of Toddy, an Indian fermented date palm beverage. Food Research International, 172 (1), 113–205.

Davani-Davari, D., Negahdaripour, M., Karimzadeh, I., Seifan, M., Mohkam, M., Masoumi, S.J., Berenjian, A., et al. 2019. Prebiotics: Definition, types, sources, mechanisms, and clinical applications. Foods, 8 (3), 1–27.

da Silva, N., Taniwaki, M.H., Junqueira, V.C.A., Silveira, N., Okazaki, M.M. and Romeiro Gomes, R.A.2012. Microbiological Examination Methods of Food and Water: A Laboratory Manual, CRC Press, London.

Deacon, C.F. 2019. Physiology and Pharmacology of DPP-4 in Glucose Homeostasis and the Treatment of Type 2 Diabetes. Frontiers in Endocrinology, 10 (80), 1–23.

Deacon, C.F. 2020. Dipeptidyl peptidase 4 inhibitors in the treatment of type 2 diabetes mellitus. Nature Reviews. Endocrinology, 16 (11), 642–653.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

DeFrain, J.M., Hippen, A.R., Kalscheur, K.F. and Schingoethe, D.J. 2006. Feeding lactose to increase ruminal butyrate and the metabolic status of transition dairy cows. Journal of Dairy Science, 89 (1), 1–6.

Delikanli, B. and Ozcan, T. 2017. Improving the Textural Properties of Yogurt Fortified with Milk Proteins. Journal of Food Processing and Preservation, 41 (5), 131–139.

Demarinis, C., Verni, M., Pinto, L., Rizzello, C.G. and Baruzzi, F. 2022. Use of Selected Lactic Acid Bacteria for the Fermentation of Legume-Based Water Extracts. Foods, 11 (21), 3346-3351.

Desniar, I., Rusmana, S.A., and Mubarik, N.R. 2013. Antimicrobial compounds produced by the former lactic acid bacteria Bekasam. J. Akuatika, 3, 135–145.

Dicko, M.H., Gruppen, H., Traore, A.S., Van Berkel, W.J.H. and Voragen, A.G.J. 2005. Evaluation of the effect of germination on phenolic compounds and antioxidant activities in sorghum varieties. Journal of Agricultural and Food Chemistry, 53 (7), 3357–3360.

Diether, N.E. and Willing, B.P. 2019. Microbial fermentation of dietary protein: An important factor in diet–microbe–host interaction. Microorganisms, 7 (1), 1–10.

De Jesús Cenobio-Galindo, A., Díaz-Monroy, G., Medina-Pérez, G., Jesús Franco-Fernández, M., Ludeña-Urquizo, F.E., Vieyra-Alberto, R. and Campos-Montiel, R.G. 2019. Multiple Emulsions with Extracts of Cactus Pear Added in A Yogurt: Antioxidant Activity, In Vitro Simulated Digestion and Shelf Life. Foods, 8 (10), 1–12.

de Morais Souto, B., Florentino Barbosa, M., Marinsek Sales, R.M., Conessa Moura, S., de Rezende Bastos Araújo, A. and Ferraz Quirino, B. 2023. The potential of β-glucosidases for aroma and flavor improvement in the food industry, The Microbe, 1(3), 1–16.

Drenjančević, I., Kralik, G., Kralik, Z., Mihalj, M., Stupin, A., Novak, S. and Grčević, M. 2017. The effect of dietary intake of Omega-3 polyunsaturated fatty acids on cardiovascular health: revealing potentials of functional food. *Superfood and Functional Food*, InTech, 207–232.

Donkor, O.N. 2007. Influence of Probiotic Organisms on Release of Bioactive Compounds in Yoghurt and Soy Yoghurt. Victoria University Australia, Victoria University, Australia.

Doyon, M. and Labrecque, J.A. 2008. Functional foods: A conceptual definition. British Food Journal, 110 (11), 341–351.

dos Santos, K.M.O., de Oliveira, I.C., Lopes, M.A.C., Cruz, A.P.G., Buriti, F.C.A. and Cabral, L.M. 2017. Addition of grape pomace extract to probiotic fermented goat milk: the effect on phenolic content, probiotic viability and sensory acceptability, Journal of the Science of Food and Agriculture, 97(4), 1108–1115.

Du, L., Ro, K.S., Zhang, Y., Tang, Y.J., Li, W., Xie, J. and Wei, D. 2022. Effects of lactiplantibacillus plantarum X7021 on physicochemical properties, purines, isoflavones and volatile compounds of fermented soymilk. Process Biochemistry, 113, 1–8.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Dunne, C., O'Mahony, L., Murphy, L., Thornton, G., Morrissey, D., O'Halloran, S., Feeney, M., et al. 2001. In vitro selection criteria for probiotic bacteria of human origin: Correlation with in vivo findings. American Journal of Clinical Nutrition, 73 (2 SUPPL.), 386–392.

Ebrahimi-Mousavi, S., Alavian, S.M., Sohrabpour, A.A., Dashti, F., Djafarian, K. and Esmaillzadeh, A. 2022. The effect of daily consumption of probiotic yogurt on liver enzymes, steatosis and fibrosis in patients with nonalcoholic fatty liver disease (NAFLD): study protocol for a randomized clinical trial. BMC Gastroenterology, 22 (1), 1–16.

Ejtahed, H.S., Mohtadi-Nia, J., Homayouni-Rad, A., Niafar, M., Asghari-Jafarabadi, M. and Mofid, V. 2012. Probiotic yogurt improves antioxidant status in type 2 diabetic patients. Nutrition, 28 (5), 539–543.

Eka Yulianti, L., Setiaboma, W., Nurrachma Hakim, A., Widowati, E., Afifah, N. and Ekafitri, R. 2022. The effect of beans types and soaking time on the characteristics of Indonesian traditional food 'Instant Bose'. Food Science and Technology (Brazil), 42, 1–10.

Ekafitri, R. and Isworo, R. 2014. The Utilization of Beans as Protein Source for Emergency Food. Pangan, 23 (2), 21–24.

Elizaquível, P., Sánchez, G., Salvador, A., Fiszman, S., Dueñas, M.T., López, P., Fernández de Palencia, P., et al. 2011. Evaluation of yogurt and various beverages as carriers of lactic acid bacteria producing 2-branched (1,3)-β-d-glucan. Journal of Dairy Science, 94 (7), 3271–3278.

El Hage, R., Hernandez-Sanabria, E., Calatayud Arroyo, M., Props, R. and Van De Wiele, T. 2019. Propionate-producing consortium restores antibiotic-induced dysbiosis in a dynamic in vitro model of the human intestinal microbial ecosystem. Frontiers in Microbiology, 10 (2), 1–16.

El Kahlout, K.E.M., El Quqa, I.M., El Hindi, M.W. and El Bashiti, T.A. 2018. Isolation, Biochemical Characterization and DNA Identification of Yogurt Starters Streptococcus thermophilus & Lactobacillus delbrueckii ssp. bulgaricus in Gaza Strip. Advances in Microbiology, 8 (12), 1005–1020.

Engevik, A.C., Kaji, I. and Goldenring, J.R. 2020. The physiology of the gastric parietal cell. Physiological Reviews, 100 (2), 1–23.

Erhardt, M.M., Oliveira, W. de C., Fröder, H., Marques, P.H., Oliveira, M.B.P.P. and Richards, N.S.P. dos S. 2023. Lactic Bacteria in Artisanal Cheese: Characterization through Metagenomics. Fermentation, 9 (1), 41–53.

Evivie, S.E., Huo, G.C., Igene, J.O. and Bian, X. 2017. Some current applications, limitations and future perspectives of lactic acid bacteria as probiotics. Food and Nutrition Research, 61 (1), 1–15.

Fadahunsi, I.F., Busari, N.K. and Fadahunsi, O.S. 2020. Effect of cultural conditions on the growth and linamarase production by a local species of Lactobacillus fermentum isolated from cassava effluent. Bulletin of the National Research Centre, 44 (1), 1–14.

Fahrurrozi, Rahayu, E.P., Nugroho, I.B. and Lisdiyanti, P. 2019. Lactic acid bacteria (LAB) isolated from fermented cocoa beans prevent the growth of model food-contaminating bacteria. AIP Conference Proceedings, 2099, AIP Publishing, 1–6.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Fall, N.G., Diop, M.B., T.L.S., Thiaw, O.T. and Thonart, P. 2018. Characterization of Bacteriocin-Like Producing Lactic Acid Bacteria (LAB) Isolated From the Crude and Traditionally Fermented Fish Meat (Guedj) In Senegal. International Journal of Fisheries and Aquaculture Research (IJFAR), 4 (3), 26–35.

Fan, J., Johnson, M.H., Lila, M.A., Yousef, G. and De Mejia, E.G. 2013. Berry and Citrus Phenolic Compounds Inhibit Dipeptidyl Peptidase IV: Implications in Diabetes Management. Evidence-Based Complementary and Alternative Medicine: ECAM, 2013, 1–13.

Fang, R.S., Dong, Y.C., Chen, F. and Chen, Q.H. 2015. Bacterial Diversity Analysis during the Fermentation Processing of Traditional Chinese Yellow Rice Wine Revealed by 16S rDNA 454 Pyrosequencing. Journal of Food Science, 80 (10), 2265–2271.

Farag, M.A., Saleh, H.A., El Ahmady, S. and Elmassry, M.M. 2022. Dissecting Yogurt: The Impact of Milk Types, Probiotics, and Selected Additives on Yogurt Quality. Food Reviews International, 38 (1), 634–650.

Farinde, Obatolu, V.A., Oyarekua, M.A., Adeniran, H.A. and Olanipekun. 2010. Physical and microbial properties of fruit flavoured fermented cowmilk and soy milk (yoghurt-like) under different temperature of storage. African Journal of Food Science and Technology, 1 (5), 120–127.

Fatima, S.M. and Hekmat, S. 2020. Microbial and Sensory Analysis of Soy and Cow Milk-Based Yogurt as a Probiotic Matrix for Lactobacillus rhamnosus GR-1. Fermentation, 6 (3), 74–79.

Fazilah, N.F., Ariff, A.B., Khayat, M.E., Rios-Solis, L. and Halim, M. 2018. Influence of probiotics, prebiotics, synbiotics and bioactive phytochemicals on the formulation of functional yogurt. Journal of Functional Foods, 48, 1–10.

Feng, X.M., Eriksson, A.R.B. and Schnürer, J. 2005. Growth of lactic acid bacteria and Rhizopus oligosporus during barley tempeh fermentation. International Journal of Food Microbiology, 104 (3), 249–256.

Fernandes, J., Kumbhar, R. and Kulkarni, R. 2021. Bacteriocins from Lactic Acid Bacteria: A Natural Strategy for Inhibiting Unwanted Bacteria. Resonance, 26 (3), 387–398.

Fernandez, M.A. and Marette, A. 2017. Potential Health Benefits of Combining Yogurt and Fruits Based on Their Probiotic and Prebiotic Properties. Advances in Nutrition (Bethesda, Md.), 8 (1), 155–164.

Ferrando, V., Quiberoni, A., Reinhemer, J. and Suárez, V. 2015. Resistance of functional Lactobacillus plantarum strains against food stress conditions. Food Microbiology, 48 (5), 1–8.

Foretz, M., Guigas, B., Bertrand, L., Pollak, M. and Viollet, B. 2014. Metformin: From mechanisms of action to therapies. *Cell Metabolism*, 20(6), 953–966.

Foyer, C.H., Lam, H.M., Nguyen, H.T., Siddique, K.H.M., Varshney, R.K., Colmer, T.D., Cowling, W., et al. 2016. Neglecting legumes has compromised human health and sustainable food production. Nature Plants, 2 (8), 51–59.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Freitas, C.S., Alves da Silva, G., Perrone, D., Vericimo, M.A., Baião, D.S., Pereira, P.R., Paschoalin, M.F. and Del Aguila, E.M. 2018. Recovery of antimicrobials and bioaccessible isoflavones and phenolics from soybean (*Glycine max*) meal by aqueous extraction. *Molecules*, 24 (1), 74.

Fusco, V., Quero, G.M., Cho, G.S., Kabisch, J., Meske, D., Neve, H., Bockelmann, W., et al. 2015. The genus Weissella: Taxonomy, ecology and biotechnological potential. Frontiers in Microbiology, 6 (3), 1–13.

Gad, A.S. and El-Salam, M.H.A. 2010. The antioxidant properties of skim milk supplemented with rosemary and green tea extracts in response to pasteurisation, homogenisation and the addition of salts. *International Journal of Dairy Technology*, 63 (3), 349–355.

Galicia-Garcia, U., Benito-Vicente, A., Jebari, S., Larrea-Sebal, A., Siddiqi, H., Uribe, K.B., Ostolaza, H., et al. 2020. Pathophysiology of type 2 diabetes mellitus. International Journal of Molecular Sciences, 21 (17), 62–75.

Garcia-Armisen, T., Papalexandratou, Z., Hendryckx, H., Camu, N., Vrancken, G., De Vuyst, L. and Cornelis, P. 2010. Diversity of the total bacterial community associated with Ghanaian and Brazilian cocoa bean fermentation samples as revealed by a 16 S rRNA gene clone library. Applied Microbiology and Biotechnology, 87 (6), 2281–2292.

Garczewska-Murzyn, A., Smoczyński, M., Kotowska, N. and Kiełczewska, K. 2022. Effect of buttermilk and skimmed milk powder on the properties of low-fat yoghurt. Journal of Food Science and Technology, 59 (6), 1–10.

Garro, M.S., Aguirre, L. and Savoy De Giori, G. 2006. Biological activity of Bifidobacterium longum in response to environmental pH. Applied Microbiology and Biotechnology, 70 (5), 1–8.

Garro, M.S., Font de Valdez, G. and Savoy de Giori, G. 2004. α-Galactosidase Assay in Fermented Soymilk Products. Environmental Microbiology, 7 (2), 121–124.

Ghasempour, Z., Moghaddas Kia, E., Golbandi, S. and Ehsani, A. 2019. Effects of mixed starters on quality attributes of probiotic yogurt using statistical design approach. Nutrition & Food Science, 49 (1), 158–169.

Gibson, G.R., Hutkins, R., Sanders, M.E., Prescott, S.L., Reimer, R.A., Salminen, S.J., Scott, K., Stanton, C., Swanson, K.S., Cani, P.D., Verbeke, K. and Reid, G. 2017. The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of prebiotics. Nature Reviews Gastroenterology & Hepatology, 14(8), 491–502.

Gineikienė, J., Kiudyte, J. and Degutis, M. 2017. Functional, organic or conventional? Food choices of health conscious and skeptical consumers. *Baltic Journal of Management*, 12(2), 139–152.

Gomezulu, A.D. and Mongi, R.J. 2022. Protein Content and Anti-nutritional Factors in Pigeon Pea and Effect of Its Protein Isolate on Physical Properties and Consumer Preference of Beef Sausages. Applied Food Research, 2 (1), 1–15.

Gonzalez-Garcia, R.A., McCubbin, T., Wille, A., Plan, M., Nielsen, L.K. and Marcellin, E. 2017. Awakening sleeping beauty: Production of propionic acid

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

in Escherichia coli through the sbm operon requires the activity of a methylmalonyl-CoA epimerase. Microbial Cell Factories, 16 (1), 1–12.

Grajek, W., Olejnik, A. and Sip, A. 2005. Probiotics, prebiotics and antioxidants as functional foods. Acta Biochimica Polonica, 52 (3), 665–671.

Granato, D., Barba, F.J., Bursać Kovačević, D., Lorenzo, J.M., Cruz, A.G. and Putnik, P. 2020. Functional Foods: Product Development, Technological Trends, Efficacy Testing, and Safety. Annual Review of Food Science and Technology, 11 (1), 93–118.

Greis, M., Sainio, T., Katina, K., Nolden, A.A., Kinchla, A.J., Seppä, L. and Partanen, R. 2022. Physicochemical Properties and Mouthfeel in Commercial Plant-Based Yogurts. Foods, 11 (7), 1–15.

Gulcin, İ. and Alwasel, S.H. 2023. DPPH Radical Scavenging Assay. Processes, 11 (8), 2248–2257.

Gulitz, A., Stadie, J., Wenning, M., Ehrmann, M.A. and Vogel, R.F. 2011. The microbial diversity of water kefir. International Journal of Food Microbiology, 151 (3), 284–288.

Gullón, B., Gullón, P., Tavaria, F., Pintado, M., Gomes, A.M., Alonso, J.L. and Parajó, J.C. 2014. Structural features and assessment of prebiotic activity of refined arabinoxylooligosaccharides from wheat bran. Journal of Functional Foods, 6 (1), 438–449.

Gupta, M., Raut, R., Manandhar, S., Chaudhary, A., Shrestha, U., Dangol, S., Sudarshan, G.C., et al. 2023. Identification and characterization of probiotics isolated from indigenous chicken (Gallus domesticus) of Nepal. PLoS ONE, 18 (1), 1–12.

Guruh, Karyantina, M. and Suhartatik, N. 2017. Karakteristik Yoghurt Susu Wijen (Sesamun indicum) Dengan Penambahan Ekstrak Buah Bit (Beta vulgaris). Jurnal Teknologi Dan Industri Pangan, 2 (1), 39–45.

Gustaw, W., Kordowska-Wiater, M. and Kozioł, J. 2011. The influence of selected prebiotics on the growth of lactic acid bacteria for bio-yoghurt production. Acta Scientiarum Polonorum, Technologia Alimentaria, 10 (4), 1–8.

Guyomarc'h, F., Francius, G., Parayre, S., Madec, M.N. and Deutsch, S.M. 2020. Surface properties associated with the production of polysaccharides in the food bacteria Propionibacterium freudenreichii. Food Microbiology, 92 (10), 3579-3582.

Hadiutomo 1993. Mikrobiologi dasar dalam praktek teknik dan prosedur dasar laboratorium. Gramedia, Jakarta.

Hafiizha, A., Kayaputri, I.L., Tensiska, T. and Amalia, N.R. 2020. The Effect of Skim Milk Concentration on Sensory Quality and pH of Probiotic Yoghurt Added with Red Dragon Fruit (Hylocereus polyrhizus). Jurnal Ilmu Dan Teknologi Hasil Ternak, 15 (1), 1–10.

Haji, A., Teka, T.A., Yirga Bereka, T., Negasa Andersa, K., Desalegn Nekera, K., Geleta Abdi, G., Lema Abelti, A., et al. 2024. Nutritional Composition, Bioactive Compounds, Food Applications, and Health Benefits of Pigeon Pea (Cajanus cajan L. Millsp.): A Review. Legume Science, 6 (2), 233-239.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Hamed, A.-A. 2021. Isolation, Characterization and Identification of Lactic Acid Bacteria as Probiotic. Annals of Agricultural Science, Moshtohor, 59 (2), 1–10.

Han, H.S., Jeon, H. and Kang, S.C. 2018. Phellopterin isolated from Angelica dahurica reduces blood glucose level in diabetic mice. Heliyon, 4 (3), 1–14.

Hao, Y. and Sun, B. 2020. Analysis of bacterial diversity and biogenic amines content during fermentation of farmhouse sauce from Northeast China. Food Control, 108 (70), 106861–106878.

Hariri, N. and Thibault, L. 2010. High-fat diet-induced obesity in animal models. Nutrition Research Reviews, 23(2), 270–299.

Hartini, P., Purwanto, H., Juliyarsi, I., Y. and Purwati, E. 2019. Probiotic Potential of Lactic Acid Bacteria Lactobacillus fermentum NBRC 15885 Isolation from Tempoyak in Padang Pariaman District, West Sumatera (Indonesia) to Acid Conditions, Bile Salts and Antimicrobial Activity. International Research Journal Of Pharmacy, 10 (3), 1–10.

Hasan, M., Arpitha, S.R., Das, C., Laishram, R., Sasi, M., Kumar, S., Maheshwari, C., et al. 2023. Research trends and approaches for the nutritional and bio-functionality enhancement of fermented soymilk. Journal of Functional Foods, 107 (21), 1–12.

Haug, W. and Lantzsch, H.-J. 1983. Sensitive method for the rapid determination of phytate in cereals and cereal products. Journal of the Science of Food and Agriculture, 34 (12), 1423–1426.

Haven, M.Ø. and Jørgensen, H. 2013. Adsorption of β-glucosidases in two commercial preparations onto pretreated biomass and lignin. Biotechnology for Biofuels, 6 (1), 1–10.

He, J., Zhang, P., Shen, L., Niu, L., Tan, Y., Chen, L., Zhao, Y., et al. 2020. Short-chain fatty acids and their association with signalling pathways in inflammation, glucose and lipid metabolism. International Journal of Molecular Sciences, 21 (17), 1–16.

He, L. 2020. Metformin and systematic metabolism. Trends in Pharmacological Sciences, 41 (11), 868–881.

Helal, A., Cattivelli, A., Conte, A. and Tagliazucchi, D. 2022. In Vitro Bioaccessibility and Antioxidant Activity of Phenolic Compounds in Coffee-Fortified Yogurt. Molecules, 27 (20), 43–68.

Hidalgo-Fuentes, B., de Jesús-José, E., Cabrera-Hidalgo, A. de J., Sandoval-Castilla, O., Espinosa-Solares, T., González-Reza, R.M., Zambrano-Zaragoza, M.L., et al. 2024. Plant-Based Fermented Beverages: Nutritional Composition, Sensory Properties, and Health Benefits. Foods, 13 (6), 1–15.

Hidayati, D., Soetjipto, S. and Catur Adi, A. 2021. Characteristic and Isoflavone Level of Soymilk Fermented by Single and Mixed Culture of Lactobacillus plantarum and Yoghurt Starter. Journal of Food and Nutrition Research, 9 (1), 1–10.

Hill, C., Guarner, F., Reid, G., Gibson, G.R., Merenstein, D.J., Pot, B., Morelli, L., et al. 2014. Expert consensus document: The international scientific association for probiotics and prebiotics consensus statement on the scope and

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

appropriate use of the term probiotic. Nature Reviews Gastroenterology and Hepatology, 11 (8), 506–514.

Hong, S.H., Lee, I., Kim, S.J. and Imm, J.Y. 2012. Improved functionality of soft soybean curd containing monascus fermented soybean ethanol extract. Food Science and Biotechnology, 21 (3), 701–707.

Hossain, A., Rahman, M.E., Faruqe, M.O., Saif, A., Suhi, S., Zaman, R., Hirad, A.H., et al. 2024. Characterization of Plant-Derived Natural Inhibitors of Dipeptidyl Peptidase-4 as Potential Antidiabetic Agents: A Computational Study. Pharmaceutics, 16 (4), 1–15.

Howlett, J. 2008. Functional Foods from Science to Health and Claims, ILSI Europe Concise Monograph Series, ILSI, Belgium.

Hsiao, Y.T. and Wang, C.Y. 2020. Microbial shelf-life, starch physicochemical properties, and *in vitro* digestibility of pigeon pea milk altered by high pressure processing. *Molecules*, 25 (11), 2516.

Huang, Y., Wu, Y., Li, Y., Nie, Z., Wang, S., Wang, Z., Ma, D., et al. 2023. The Plant-Derived Lactic Acid Bacteria Increases the Cell Death of Human Colon Cancer Cell via Modulating the Apoptosis and Ferroptosis. Preprints, 15 (5), 1–12.

Huebner, J., Wehling, R.L., & Hutkins, R.W. 2007. Functional activity of commercial prebiotics. International Dairy Journal, 17(7), 770–775

Hunter, R.W., Hughey, C.C., Lantier, L., Sundelin, E.I., Peggie, M., Zeqiraj, E., Sicheri, F., et al. 2018. Metformin reduces liver glucose production by inhibition of fructose-1-6-bisphosphatase. Nature Medicine, 24 (9), 1395–1406.

Ibrahim, A., Fridayanti, A., Delvia Laboratorium Penelitian dan Pengembangan FARMAKA TROPIS Fakultas Farmasi Universitas Mulawarman, F. and Timur, K. 2015. Isolasi dan Identifikasi Bakteri Asam Laktat (BAL) dari Buah Mangga (Mangifera indica L.). Jurnal Ilmiah Manuntung: Sains Farmasi Dan Kesehatan, 1 (2), 159–163.

Ibrahim, S.A., Ayivi, R.D., Zimmerman, T., Siddiqui, S.A., Altemimi, A.B., Fidan, H., Esatbeyoglu, T., et al. 2021. Lactic acid bacteria as antimicrobial agents: Food safety and microbial food spoilage prevention. Foods, 10 (12), 1–13.

Ighodaro, O.M., Adeosun, A.M., Asejeje, F.O., Soetan, G.O. and Kassim, O.O. 2018. Time course effects of 5,5-dihydroxyl pyrimidine-2,4,6-trione (alloxan) as a diabetogenic agent in animal model. Alexandria Journal of Medicine, 54 (4), 705–710.

Illeghems, K., de Vuyst, L., Papalexandratou, Z. and Weckx, S. 2012. Phylogenetic Analysis of a Spontaneous Cocoa Bean Fermentation Metagenome Reveals New Insights into Its Bacterial and Fungal Community Diversity. PLOS ONE, 7 (5), 308–340.

Islam, S., Miah, M.A.S., Islam, M.F., Tisa, K.J., Bhuiyan, M.H.R., Bhuiyan, M.N.I., Afrin, S., et al. 2024. Fermentation with lactic acid bacteria enhances the bioavailability of bioactive compounds of whole wheat flour. Applied Food Research, 4 (2), 1006–1010.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ismail, Y.S., Yulvizar, C. and Mazhitov, B. 2018. Characterization of lactic acid bacteria from local cows milk kefir. IOP Conference Series: Earth and Environmental Science, 130, 1–10.

Istrate, D., & Crisan, L. 2023. Dipeptidyl Peptidase-4 inhibitors in type 2 diabetes mellitus management: Pharmacophore virtual screening, molecular docking, pharmacokinetic evaluations, and conceptual DFT analysis. Processes, 11(11), 3100.

Jaeger, S.R., Dupas de Matos, A., Frempomaa Oduro, A. and Hort, J. 2024. Sensory characteristics of plant-based milk alternatives: Product characterisation by consumers and drivers of liking. Food Research International, 180 (6), 1–12.

Jamalullail, N.A., Chan, Y.L., Tang, T.K., Tang, C.P., Lai, O.M. 2023. Nutritional, physicochemical stability, microbial survivability and sensorial evaluation of legume yogurts. *Journal of Microbiology, Biotechnology and Food Sciences*, 12(4), e5141–e5141.

Janda, J.M. and Abbott, S.L. 2021. The changing face of the family enterobacteriaceae (Order: Enterobacterales): New members, taxonomic issues, geographic expansion, and new diseases and disease syndromes. Clinical Microbiology Reviews, 34 (2), 10–128.

Jena, P.K., Trivedi, D., Thakore, K., Chaudhary, H., Giri, S.S. and Seshadri, S. 2013. Isolation and characterization of probiotic properties of lactobacilli isolated from rat fecal microbiota. Microbiology and Immunology, 57 (6), 407–416.

Jeyaraj, E.J., Lim, Y.Y. and Choo, W.S. 2021. Effect of Organic Solvents and Water Extraction on the Phytochemical Profile and Antioxidant Activity of Clitoria ternatea Flowers. ACS Food Science and Technology, 1 (9), 1567–1577.

Jia, L., Li, D., Feng, N., Shamoon, M., Sun, Z., Ding, L., Zhang, H., et al. 2017. Anti-diabetic Effects of Clostridium butyricum CGMCC0313.1 through Promoting the Growth of Gut Butyrate-producing Bacteria in Type 2 Diabetic Mice. Scientific Reports, 7 (1), 1–15.

John, R. and Singla, A. 2021. Functional foods: Components, health benefits, challenges, and major projects. DRC Sustainable Future, 2(1), 61–72.

Jurek, J.M. 2022. Health benefits of functional foods. Journal of Biomedical Research & Environmental Sciences, 3(12), 1307–1316.

Kalhotra, P., Chittepu, V.C.S.R., Osorio-Revilla, G. and Gallardo-Velázquez, T. 2019. Discovery of Galangin as a Potential DPP-4 Inhibitor That Improves Insulin-Stimulated Skeletal Muscle Glucose Uptake: A Combinational Therapy for Diabetes. International Journal of Molecular Sciences, 20 (5), 35–39.

Kano, M., Takayanagi, T., Harada, K., Sawada, S. and Ishikawa, F. 2006. Bioavailability of isoflavones after ingestion of soy beverages in healthy adults. Journal of Nutrition, 136 (9), 2291–2297.

Kant, R., Blom, J., Palva, A., Siezen, R.J. and de Vos, W.M. 2011. Comparative genomics of Lactobacillus. Microbial Biotechnology, 4 (3), 1–10.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Karam, M.C., Gaiani, C., Hosri, C., Burgain, J. and Scher, J. 2013. Effect of dairy powders fortification on yogurt textural and sensorial properties: A review. Journal of Dairy Research, 80 (4), 400–409.

Katrolia, P., Liu, X., Li, J. and Kopparapu, N.K. 2019. Enhanced elimination of non-digestible oligosaccharides from soy milk by immobilized α-galactosidase: A comparative analysis. Journal of Food Biochemistry, 43 (11), 130–135.

Katz, S.E. and Pollan, M. 2012. The Art of Fermentation: An in-Depth Exploration of Essential Concepts and Processes from around the World, Chelsea Green Publishing.

Kayacan Çakmakoğlu, S., Dere, S., Bekiroğlu, H., Bozkurt, F., Karasu, S., Dertli, E., Türker, M., et al. 2024. Production of bioactive peptides during yogurt fermentation, their extraction and functional characterization. Food Bioscience, 61 (1), 1–21.

Khisti, U., Bastawde, K.B. and Gokhale, D.V. 2011. Hyper-production of beta-glucosidase and beta-xylosidase by Aspergillus niger NCIM 1207 in xylan-containing media. BioResources, 6 (2), 2066–2076.

Kim, B.R., Kim, H.Y., Choi, I., Kim, J.B., Jin, C.H. and Han, A.R. 2018. DPP-IV Inhibitory Potentials of Flavonol Glycosides Isolated from the Seeds of Lens culinaris: In Vitro and Molecular Docking Analyses. Molecules (Basel, Switzerland), 23 (8), 8–15.

Kim, D., Song, L., Breitwieser, F.P. and Salzberg, S.L. 2016. Centrifuge: rapid and sensitive classification of metagenomic sequences. Genome Research, 26 (12), 1721–1729.

Kim, E., Yang, S.M., Jung, D.H. and Kim, H.Y. 2023. Differentiation between Weissella cibaria and Weissella confusaUsing Machine-Learning-Combined MALDI-TOF MS. International Journal of Molecular Sciences, 24 (13), 1–12.

Kim, E., Yang, S.M., Lim, B., Park, S.H., Rackerby, B. and Kim, H.Y. 2020. Design of PCR assays to specifically detect and identify 37 Lactobacillus species in a single 96 well plate. BMC Microbiology, 20 (1), 1–15.

Kitum, V.C., Kinyanjui, P.K., Mathara, J.M. and Sila, D.N. 2020. Effect of Lb. plantarum BFE 5092 Fermentation on Antinutrient and Oligosaccharide Composition of Whole Red Haricot Bean (Phaseolus vulgaris L). International Journal of Food Science, 202 (70), 8876–8894.

Klaenhammer, T., Altermann, E., Arigoni, F., Bolotin, A., Breidt, F., Broadbent, J., Cano, R., et al. 2002. Discovering lactic acid bacteria by genomics. Antonie van Leeuwenhoek, International Journal of General and Molecular Microbiology, 82 (1), 1–4.

Kong, X., Xiao, Z., Du, M., Wang, K., Yu, W., Chen, Y., Liu, Z., et al. 2022. Physicochemical, Textural, and Sensorial Properties of Soy Yogurt as Affected by Addition of Low Acyl Gellan Gum. Gels, 8 (7), 1–15.

König, H., Unden, G. and Fröhlich, J. 2017. Biology of Microorganisms on Grapes, in Must and in Wine. Biology of Microorganisms on Grapes, in Must and in Wine.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Koriyama, T., Sato, Y., Iijima, K. and Kasai, M. 2017. Influences of Soaking Temperature and Storage Conditions on Hardening of Soybeans (Glycine max) and Red Kidney Beans (Phaseolus vulgaris). Journal of Food Science, 82 (7), 1546–1556.

Kouris-Blazos, A. and Belski, R. 2016. Health benefits of legumes and pulses with a focus on Australian sweet lupins. Asia Pacific Journal of Clinical Nutrition, 25 (1), 23–31.

Kozuka, M., Yamane, T., Nakano, Y., Nakagaki, T., Ohkubo, I. and Ariga, H. 2015. Identification and characterization of a dipeptidyl peptidase IV inhibitor from aronia juice. Biochemical and Biophysical Research Communications, 465 (3), 433–436.

Krishnan, H.B., Natarajan, S.S., Oehrle, N.W., Garrett, W.M. and Darwish, O. 2017. Proteomic Analysis of Pigeonpea (Cajanus cajan) Seeds Reveals the Accumulation of Numerous Stress-Related Proteins. Journal of Agricultural and Food Chemistry, 65 (23), 4572–4581.

Krisnaningsih, A.T., Radiati, L.E., Purwadi, Evanuarini, H. and Rosyidi, D. 2019. The effect of incubation time to the physicochemical and microbial properties of yoghurt with local taro (Colocasia esculenta (L.) schott) starch as stabilizer. Current Research in Nutrition and Food Science, 7 (2), 23–31.

Krisnawati, A. 2005. Prospek Serta Pencandraan Sifat Kualitatif dan Kuantitatif Kacang Gude (Cajanus cajan L. Millsp.). Buletin Palawija, 13 (9), 4–12.

Kulling, S.E., Honig, D.M. and Metzler, M. 2001. Oxidative metabolism of the soy isoflavones daidzein and genistein in humans in vitro and in vivo. Journal of Agricultural and Food Chemistry, 49 (6), 3024–3333.

Kwon, D.Y., Daily, J.W., Kim, H.J. and Park, S. 2010. Antidiabetic effects of fermented soybean products on type 2 diabetes. Nutrition Research, 30 (1), 15–22.

Lahtinen, S.J., Gueimonde, M., Ouwehand, A.C., Reinikainen, J.P. and Salminen, S.J. 2006. Comparison of four methods to enumerate probiotic bifidobacteria in a fermented food product. Food Microbiology, 23 (6), 571–577.

Lasker, S., Rahman, M.M., Parvez, F., Zamila, M., Miah, P., Nahar, K., Kabir, F., et al. 2019. High-fat diet-induced metabolic syndrome and oxidative stress in obese rats are ameliorated by yogurt supplementation. Scientific Reports, 9 (1), 1–15.

Leblanc, J.G., Laiño, J.E., del Valle, M.J., Vannini, V., van Sinderen, D., Taranto, M.P., de Valdez, G.F., et al. 2011. B-Group vitamin production by lactic acid bacteria - current knowledge and potential applications. Journal of Applied Microbiology, 111 (6), 1297–1309.

Lee, E.S., Lee, D.S., Pandeya, P.R., Kim, Y.C., Kang, D.G., Lee, H.S., Oh, B.C., et al. 2017. Sodium butyrate has context-dependent actions on dipeptidyl peptidase-4 and other metabolic parameters. The Korean Journal of Physiology & Pharmacology, 21 (5), 519–529.

Legowo, A.M., Kusrahayu and Mulyani, S. 2009. Ilmu Dan Teknologi Susu, Badan Penerbit Universitas Diponegoro, Semarang.

Leksono, B.Y., Cahyanto, M.N., Rahayu, E.S., Yanti, R. and Utami, T. 2022. Enhancement of Antioxidant Activities in Black Soy Milk through Isoflavone

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Aglycone Production during Indigenous Lactic Acid Bacteria Fermentation. Fermentation, 8 (7), 1–12.

Lenzen, S. 2008. The mechanisms of alloxan- and streptozotocin-induced diabetes. *Diabetologia*, 51(2), 216–226.

Leska, A., Nowak, A. and Motyl, I. 2022. Isolation and Some Basic Characteristics of Lactic Acid Bacteria from Honeybee (Apis mellifera L.) Environment—A Preliminary Study. Agriculture (Switzerland), 12 (10), 1–12.

Li, A., Zheng, J., Han, X., Yang, S., Cheng, S., Zhao, J., Zhou, W., et al. 2023. Advances in Low-Lactose/Lactose-Free Dairy Products and Their Production. Foods, 12 (13), 25–53.

Li, H., Yan, L., Wang, J., Zhang, Q., Zhou, Q., Sun, T., Chen, W., et al. 2012. Fermentation characteristics of six probiotic strains in soymilk. Annals of Microbiology, 62 (4), 1473–1483.

Li, L., Zhou, L., Liu, X., Gong, J. and Xiao, G. 2023. Physicochemical, microbiological, and sensory properties of low-lactose yogurt using Streptococcus thermophilus with high β-galactosidase activity. Journal of the Science of Food and Agriculture, 103 (15), 215-220.

Li, S., Xu, H., Cui, S., Wu, F., Zhang, Y., Su, M., Gong, Y., et al. 2016. Discovery and Rational Design of Natural-Product-Derived 2-Phenyl-3,4-dihydro-2H-benzo[f]chromen-3-amine Analogs as Novel and Potent Dipeptidyl Peptidase 4 (DPP-4) Inhibitors for the Treatment of Type 2 Diabetes. Journal of Medicinal Chemistry, 59 (14), 6772–6790.

Li, Z., Rui, J., Li, X., Li, J., Dong, L., Huang, Q., Huang, C. et al. 2017. Bacterial community succession and metabolite changes during doubanjiang-meju fermentation, a Chinese traditional fermented broad bean (Vicia faba L.) paste, Food Chemistry, 218, 1–9.

Liu, W., Pang, H., Zhang, H. and Cai, Y. 2014. Biodiversity of Lactic Acid Bacteria, Lactic Acid Bacteria: Fundamentals and Practice, Springer, Dordrecht, 24(4), 103–110.

Liu, Y., Yang, X., Gan, J., Chen, S., Xiao, Z.X. and Cao, Y. 2022. CB-DocK2: improved protein-ligand blind docking by integrating cavity detection, docking and homologous template fitting, Nucleic Acids Research, 50(1), 159–164.

Liu, M., Bayjanov, J.R., Renckens, B., Nauta, A. and Siezen, R.J. 2020. The impact of *Lactobacillus* and *Streptococcus*starter cultures on the volatile profile and sensory characteristics of yoghurt. *International Dairy Journal*, 104, 104655.

Locali-Pereira, A.R., Caruso, Í.P., Rabesona, H., Laurent, S., Meynier, A., Kermarrec, A., Birault, L. et al. 2024. Pre-treatment effects on the composition and functionalities of pigeon pea seed ingredients, Food Hydrocolloids, 152 (12), 1–8.

Lopes, M., Pierrepont, C., Duarte, C.M., Filipe, A., Medronho, B. and Sousa, I. 2020. Legume beverages from chickpea and lupin, as new milk alternatives, Foods, 9(10), 1–12.

Luna-Flores, C.H., Stowers, C.C., Cox, B.M., Nielsen, L.K. and Marcellin, E. 2018. Linking genotype and phenotype in an economically viable propionic acid biosynthesis process, Biotechnology for Biofuels, 11(1), 1–8.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Luo, S.H., Zhang, C., Guo, J.L., Yu, H.S., Yao, J. and Gong, D.C. 2014. Study on the fermentation conditions of β-glucosidase from Aspergillus niger, Advanced Materials Research, 103 (34), 133–140.

Luo, Y.Y., Guo, Y., Hu, X.Y., Liu, W.H., Liu, B.Q., Yang, J., Tu, Z.C. et al. 2023. Flavor improvement of fermented soybean foods by co-fermentation with Bacillus velezensis and Lactiplantibacillus plantarum, LWT, 186 (11), 115–120.

Ma, H., Wang, L., Yu, H., Wang, W., Wu, G., Qin, G., Tan, Z. et al. 2022. Protease-producing lactic acid bacteria with antibacterial properties and their potential use in soybean meal fermentation, Chemical and Biological Technologies in Agriculture, 9(1), 40–45.

Mahdian, E. and Tehrani, M.M. 2007. Evaluation the effect of milk total solids on the relationship between growth and activity of starter cultures and quality of concentrated yoghurt, J. Agric. & Environ. Sci, 2(5), 1–10.

Manab, A. 2008. Program Studi Teknologi Hasil Ternak Fakultas Peternakan Universitas Brawijaya, Jurnal Ilmu Dan Teknologi Hasil Ternak, 3(1), 1–10.

Mani-López, E., Palou, E. and López-Malo, A. 2014. Probiotic viability and storage stability of yogurts and fermented milks prepared with several mixtures of lactic acid bacteria, Journal of Dairy Science, 97(5), 2578–2590.

Marazza, J.A., Garro, M.S. and Savoy de Giori, G. 2009. Aglycone production by Lactobacillus rhamnosus CRL981 during soymilk fermentation, Food Microbiology, 26(3), 1–7.

Marco, M.L., Heeney, D., Binda, S., Cifelli, C.J., Cotter, P.D., Foligné, B., Gänzle, M. et al. 2017. Health benefits of fermented foods: microbiota and beyond, Current Opinion in Biotechnology, 44(4), 94–101.

Marlapati, L., Basha, R.F.S., Navarre, A., Kinchla, A.J. and Nolden, A.A. 2024. Comparison of physical and compositional attributes between commercial plant-based and dairy yogurts, Foods, 13(7), 1–12.

Marsh, A.J., O'Sullivan, O., Hill, C., Ross, R.P. and Cotter, P.D. 2013. Sequencing-based analysis of the bacterial and fungal composition of kefir grains and milks from multiple sources, PloS One, 8(7), 1–12.

Martín, R., Jiménez, E., Heilig, H., Fernández, L., Marín, M.L., Zoetendal, E.G. and Rodríguez, J.M. 2009. Isolation of bifidobacteria from breast milk and assessment of the bifidobacterial population by PCR-denaturing gradient gel electrophoresis and quantitative real-time PCR, Applied and Environmental Microbiology, 75(4), 965–969.

Maryam, S., Razak, R., Baits, M. and Salim, A.F. 2023. Analysis of vitamin C and antioxidant activity of Capsicum frutescens L. and Capsicum annuum L., Indonesian Journal of Pharmaceutical Science and Technology, 5(1), 57–64.

Maske, L.B., Murawski de Mello, A.F., da Silva Vale, A., Prado Martin, J.G., de Oliveira Soares, D.L., De Dea Lindner, J., Soccol, C.R. et al. 2024. Exploring diversity and functional traits of lactic acid bacteria in traditional vinegar fermentation: A review, International Journal of Food Microbiology, 412 (23), 1–9.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Masood, M.I., Qadir, M.I., Shirazi, J.H. and Khan, I.U. 2011. Beneficial effects of lactic acid bacteria on human beings, Critical Reviews in Microbiology, 37(1), 1–7.

Mastropasqua Talamo, M., Cauchy, T., Zinna, F., Pop, F. and Avarvari, N. 2023. Tuning the photophysical and chiroptical properties of [4]helicene-diketopyrrolopyrroles, Chirality, 35(11), 805–816.

Mathur, V., Alam, O., Siddiqui, N., Jha, M., Manaithiya, A., Bawa, S., Sharma, N. et al. 2023. Insight into structure activity relationship of DPP-4 inhibitors for development of antidiabetic agents, Molecules, 28 (15), 1–43.

Mbaveng, A.T., Zhao, Q. and Kuete, V. 2014. Harmful and protective effects of phenolic compounds from African medicinal plants, Toxicological Survey of African Medicinal Plants, 2 (1), 1–14.

Meduru, H., Wang, Y.T., Tsai, J.J.P. and Chen, Y.C. 2016. Finding a potential dipeptidyl peptidase-4 (DPP-4) inhibitor for type-2 diabetes treatment based on molecular docking, pharmacophore generation, and molecular dynamics simulation, International Journal of Molecular Sciences, 17(6), 920–931.

Mehta, A., Kumar, L., Serventi, L., Schlich, P. and Torrico, D.D. 2023. Exploring the textural dynamics of dairy and plant-based yoghurts: A comprehensive study, Food Research International, 171(32), 113–125.

Michlmayr, H. and Kneifel, W. 2014. β-Glucosidase activities of lactic acid bacteria: Mechanisms, impact on fermented food and human health, FEMS Microbiology Letters, 352(1), 1–9.

Miller, B., Mainali, R., Nagpal, R. and Yadav, H. 2021. A newly developed synbiotic yogurt prevents diabetes by improving the microbiome—intestine—pancreas axis, International Journal of Molecular Sciences, 22(4), 1–16.

Mishra, S., Kumar, S. and Acharya, S. 2022. Divergence for nutritional traits in cultivated and wild pigeonpea genotypes from India and Africa, Natural Resources Forum, 46(3), 1–8.

Miyamoto, J., Ando, Y., Yamano, M., Nishida, A., Murakami, K. and Kimura, I. 2025. Acidipropionibacterium acidipropionici, a propionate-producing bacterium, contributes to GPR41 signaling and metabolic regulation in high-fat diet-induced obesity in mice, Frontiers in Nutrition, 12, 1–9.

Mnisi, T.J., Matotoka, M.M. and Masoko, P. 2024. Antioxidant, antibacterial, and anti-biofilm activities of selected indigenous plant species against nosocomial bacterial pathogens, Letters in Applied Microbiology, 77(9), 80–85.

Molyneux, P. 2004. The use of the stable free radical diphenylpicryl-hydrazyl (DPPH) for estimating antioxidant activity, Songklanakarin Journal of Science and Technology, 26(4), 211–219.

Moneeb, A.H.M., Hammam, A.R.A., Ahmed, A.K.A., Ahmed, M.E. and Alsaleem, K.A. 2021. Effect of fat extraction methods on the fatty acids composition of bovine milk using gas chromatography, Food Science & Nutrition, 9(6), 2936–2942.

Monika, J., Singh, R., Pella, D., Fatima, G., Nagrenda, Y., Pavol, Z. and Fedačko, J. 2023. Effects of bioactive compounds in foods on metabolic diseases. Preprints.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Mora-Villalobos, J.A., Montero-Zamora, J., Barboza, N., Rojas-Garbanzo, C., Usaga, J., Redondo-Solano, M., Schroedter, L. et al. 2020. Multi-product lactic acid bacteria fermentations: A review, Fermentation, 6(1), 1–21.

Muangman. 2011. Crude proteins from pigeon pea (Cajanus cajan L.) possess potent SOD-like activity and genoprotective effect against H2O2 in TK6 cells, Journal of Medicinal Plants Research, 5(32), 6977–6986.

Mulaw, G., Sisay Tessema, T., Muleta, D. and Tesfaye, A. 2020. Erratum: In vitro evaluation of probiotic properties of lactic acid bacteria isolated from some traditionally fermented Ethiopian food products, International Journal of Microbiology, 2020, 1–6.

Munteanu-Ichim, R.A., Canja, C.M., Lupu, M., Bădărău, C.L. and Matei, F. 2024. Tradition and innovation in yoghurt from a functional perspective—A review, Fermentation, 10(7), 357–366.

Muradova, M., Proskura, A., Canon, F., Aleksandrova, I., Schwartz, M., Heydel, J.M., Baranenko, D. et al. 2023. Unlocking flavor potential using microbial β-glucosidases in food processing, Foods, 12(24), 1–10.

Musara, C. and Nyagura, M. 2017. Skimmed milk as a determinant of vitamin A deficiency, South African Journal of Clinical Nutrition, 30(1), 1–6.

Nakamura, Y., Kaihara, A., Yoshii, K., Tsumura, Y., Ishimitsu, S. and Tonogai, Y. 2001. Content and composition of isoflavonoids in mature or immature beans and bean sprouts consumed in Japan, Journal of Health Science, 47(4), 394–406.

Narsih, Agato and Revi Sesario. 2018. Penurunan Senyawa Antinutrisi pada Biji Jagung dengan Berbagai Metoda, Teknologi Pangan: Media Informasi Dan Komunikasi Ilmiah Teknologi Pertanian, 9(1), 1–9.

Nasri, H. and Rafieian-Kopaei, M. 2014. Metformin: Current knowledge, Journal of Research in Medical Sciences, 19(7), 658–664.

Needell, J.C., Ir, D., Robertson, C.E., Kroehl, M.E., Frank, D.N. and Zipris, D. 2017. Maternal treatment with short-chain fatty acids modulates the intestinal microbiota and immunity and ameliorates type 1 diabetes in the offspring, PloS One, 12(9), 1–18.

Nehra, S., Singh, S., Sangwan, S. and Rani, S. 2021. Antioxidant activity of pod coat extracts of pigeon pea (*Cajanus cajan* L.) and their efficacy in stabilization of soybean oil. *Journal of Antioxidant Activity*, 2 (2), 29–41.

Nur, N., Meryandini, A., Suhartono, M.T. and Suwanto, A. 2020. Lipolytic bacteria and the dynamics of flavor production in Indonesian tempeh, Biodiversitas, 21(8), 3818–3825.

Nuraida, L. 2015. A review: Health promoting lactic acid bacteria in traditional Indonesian fermented foods, Food Science and Human Wellness, 4(2), 29–36.

Nurdini, A.L., Nuraida, L., Suwanto, A. and Suliantari. 2015. Microbial growth dynamics during tempe fermentation in two different home industries, International Food Research Journal, 22(4), 1668–1673.

Nurmilah, S., Frediansyah, A., Cahyana, Y. and Utama, G.L. 2024. Biotransformation and health potential of isoflavones by microorganisms in

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Indonesian traditional fermented soy products: A review, Journal of Agriculture and Food Research, 18 (5), 101-115.

O'Connell, K.J., Motherway, M.O.C., O'Callaghan, J., Fitzgerald, G.F., Paul Ross, R., Ventura, M., Stanton, C. et al. 2013. Metabolism of four α-glycosidic linkage-containing oligosaccharides by Bifidobacterium breve UCC2003, Applied and Environmental Microbiology, 79(20), 6280–6292.

Oguntibeju, O.O. 2019. Type 2 diabetes mellitus, oxidative stress and inflammation: examining the links, International Journal of Physiology, Pathophysiology and Pharmacology, 11(3), 45–47.

Pacheco, F.C., Teixeira, E. de F., Pacheco, A.F.C., Paiva, P.H.C., Tribst, A.A.L. and Leite Júnior, B.R. de C. 2023. Impact of ultrasound-assisted fermentation on buffalo yogurt production: Effect on fermentation kinetic and on physicochemical, rheological, and structural characteristics, Applied Food Research, 3(2), 103-118.

Paik, H.-D., Jang, H.J., Jung, J., Yu, H.-S. and Lee, N.-K. 2018. Evaluation of the Quality of Yogurt Using Ginseng Extract Powder and Probiotic Lactobacillus plantarum NT181, Korean Journal for Food Science of Animal Resources, 38(6), 1160–1167.

Panbo, P., Tantapakul, C. and Payaka, A. 2024. The potentiality of isoflavones from Derris robusta (DC.) Benth. against α-glucosidase, Physical Chemistry Chemical Physics: PCCP, 26(39), 25533–25542.

Papadimitriou, K., Alegría, Á., Bron, P.A., de Angelis, M., Gobbetti, M., Kleerebezem, M., Lemos, J.A. et al. 2016. Stress Physiology of Lactic Acid Bacteria, Microbiology and Molecular Biology Reviews, 80(3), 1–12.

Papadopoulou, E., Rodriguez de Evgrafov, M.C., Kalea, A., Tsapekos, P. and Angelidaki, I. 2023. Adaptive laboratory evolution to hypersaline conditions of lactic acid bacteria isolated from seaweed, New Biotechnology, 75 (12) 2145–2152.

Pei, J., Liu, Z., Pan, D., Zhao, Y., Dang, Y. and Gao, X. 2022. Transport, Stability, and in Vivo Hypoglycemic Effect of a Broccoli-Derived DPP-IV Inhibitory Peptide VPLVM, Journal of Agricultural and Food Chemistry, 70 (16), 4934–4941.

Pellegrini, N., Re, R., Yang, M. and Rice-Evans, C. 1998. Screening of dietary carotenoids and carotenoid-rich fruit extracts for antioxidant activities applying 2,2'-azinobis(3-ethylenebenzothiazoline-6-sulfonic acid radical cation decolorization assay, Methods in Enzymology, 299 (12), 379–389.

Peng, H.T., Yang, C.Y. and Fang, T.J. 2018. Enhanced β-glucosidase activity of lactobacillus plantarum by a strategic ultrasound treatment for biotransformation of isoflavones in Okara, Food Science and Technology Research, 24 (5), 815-821.

Peng, Q., Jiang, S., Chen, J., Ma, C., Huo, D., Shao, Y. and Zhang, J. 2018. Unique microbial diversity and metabolic pathway features of fermented vegetables from Hainan, China, Frontiers in Microbiology, 9(3), 14–21.

Pereira, M.L.D.S., Souza, R.D.C.P.D., Medeiros, J.V.F.D., Brito, G.Q.D. and Schwarz, A. 2023. Determination of cyanide in whole seeds and brans of linseed (*Linum usitatissimum* Linn) by molecular

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

spectrophotometry. Brazilian Journal of Pharmaceutical Sciences, 59, e23059.

Petruláková, M. and Valík, L. 2015. Legumes as potential plants for probiotic strain Lactobacillus rhamnosus GG, Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 63(5), 231-239.

Pisol, B., Nuraida, L., Abdullah, N., Suliantari and Khalil, K.A. 2013. Isolation and Characterization of Lactic Acid Bacteria from Indonesian Soybean Tempe, International Proceedings of Chemical, Biological and Environmental Engineering, 32(1), 8–14.

Poulsen, R.C., Loots, D.T., Moughan, P.J. and Kruger, M.C. 2009. Ileal and faecal digestibility of daidzein and genistein and plasma bioavailability of these isoflavones and their bioactive metabolites in the ovariectomised rat, Molecular Nutrition and Food Research, 53(1), 27–35.

Poutzalis, S., Anastasiadou, A., Nasopoulou, C., Megalemou, K., Sioriki, E. and Zabetakis, I. 2016. Evaluation of the in vitro anti-atherogenic activities of goat milk and goat dairy products, Dairy Science and Technology, 96(3), 317–327.

Pramita, D.S., Handajani, S. and Rachmawati, D. 2008. The effect of heating technique to phytic acid content and antioxidant activity of velvet bean (Mucuna pruriens), butter bean (Phaseolus lunatus) and jack bean (Canavalia ensiformis), Biofarmasi Journal of Natural Product Biochemistry, 6(2), 32-37.

Prause, M., Pedersen, S.S., Tsonkova, V., Qiao, M. and Billestrup, N. 2021. Butyrate protects pancreatic beta cells from cytokine-induced dysfunction, International Journal of Molecular Sciences, 22(19) 38-36.

Prehatin, J., Karyantina, M. and Wulandari, Y.W. 2020. Karakteristik Yoghurt Kacang Gude (Cajanus cajan L.) dengan Variasi Ekstrak Umbi Bit (Beta vulgaris L.), Jurnal Teknologi Dan Industri Pangan, 5(1), 78–89.

Purwoko, T., Pawiroharsono, S. and Gandjar, I. 2001. Biotransformasi Isoflavon oleh Rhizopus oryzae UICC 524, Bio Smart, 3(2), 415-419.

Putri, G.R.A. and Chuzaemi, S. 2021. Level Penggunaan Aspergillus Oryzae pada Fermentasi Kulit Ubi Kayu (Manihot Utilissima) Terhadap Kandungan HCN, TDN dan pH, Jurnal Nutrisi Ternak Tropis, 4(1),12-18.

Qiu, S., Zeng, H., Yang, Z., Hung, W.L., Wang, B. and Yang, A. 2023. Dynamic metagenome-scale metabolic modeling of a yogurt bacterial community, Biotechnology and Bioengineering, 120 (8), 16-21.

Quek, A., Kassim, N.K., Ismail, A., Latif, M.A.M., Shaari, K., Tan, D.C. and Lim, P.C. 2020. Identification of Dipeptidyl Peptidase-4 and α-Amylase Inhibitors from Melicope glabra (Blume) T. G. Hartley (Rutaceae) Using Liquid Chromatography Tandem Mass Spectrometry, In Vitro and In Silico Methods, Molecules, 26(1), 1–16.

Radita, R., Suwanto, A., Kurosawa, N., Wahyudi, A.T. and Rusmana, I. 2018. Firmicutes is the predominant bacteria in tempeh, International Food Research Journal, 25(6), 2313–2320.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Rahayu, H.M. and Qurbaniah, M. 2019. Selection of Tempoyak Lactic Acid Bacteria As Candidate Strain for Yoghurt Starter Culture, Biosaintifika, 11(1), 167–169.

Rahayu, M. and Martsiningsih, M.A. 2019. PSP Yogurt Lowers Blood Glucose Levels, Improves Lipid Profile and Antioxidant Status In Diabetic Conditions, in Dr. Ade Gafar Abdullah, M.S., Dr. Budi Setiawan, M.S. and Furaida Khasanah, M.K. (Eds.), Proceedings of the 5th International Conference on Health Sciences (ICHS 2018), 205–209.

Rahman, S.S., Yasmin, N., Mizanur Rahman, A.T.M., Zaman, A., Rahman, M.H. and Abdur Rouf, S.M. 2017. Evaluation and optimization of effective-dose of alloxan for inducing type-2 diabetes mellitus in long evans rat, Indian Journal of Pharmaceutical Education and Research, 51(4), 1317–1322.

Rahman, U.U., Qasim, S., Zada, N.S., Ahmad, S., Shah, A.A., Badshah, M., Hasan, F., et al. 2023. Evaluation of agricultural wastes as a sustainable carbon source for the production of β-glucosidase from Bacillus stercoris, its purification and characterization, Pakistan Journal of Agricultural Sciences, 60(2), 23-28.

Rakhmanova, A., Khan, Z.A. and Shah, K. 2018. A mini review fermentation and preservation: role of Lactic Acid Bacteria, MOJ Food Processing & Technology, 6(5), 414–417.

Ram, H., Kumar, P., Purohit, A., Kashyap, P., Kumar, S., Kumar, S., Singh, G., et al. 2021. Improvements in HOMA indices and pancreatic endocrinal tissues in type 2-diabetic rats by DPP-4 inhibition and antioxidant potential of an ethanol fruit extract of Withania coagulans, Nutrition and Metabolism, 18(1), 1–7.

Ramadan, M.M., Elbandy, M.A., Fadel, M. and Ghanem, K.Z. 2014. Biotechnological production of volatile and non-volatile antioxidant compounds from fermented soy bean meal with Trichoderma sp., Research Journal of Pharmaceutical, Biological and Chemical Sciences, 5(6), 48–55.

Ramires, F.A., Bavaro, A.R., D'Antuono, I., Linsalata, V., D'Amico, L., Baruzzi, F., Pinto, L., Tarantini, A., Garbetta, A., Cardinali, A. and Bleve, G. 2023. Liquid submerged fermentation by selected microbial strains for onion skins valorization and its effects on polyphenols. *World Journal of Microbiology and Biotechnology*, 39 (10), 258.

Rashwan, A.K., Karim, N., Xu, Y., Cui, H., Fang, J., Cheng, K., Mo, J., et al. 2022. Chemical composition, quality attributes and antioxidant activity of stirred-type yogurt enriched with Melastoma dodecandrum Lour fruit powder, Food and Function, 13(3), 1579–1592.

Rehman, Z. ur, Salariya, A.M. and Zafar, S.I. 2001. Effect of processing on available carbohydrate content and starch digestibility of kidney beans (Phaseolus vulgaris L.), Food Chemistry, 73(3), 19-27.

Rena, G., Hardie, D.G. and Pearson, E.R. 2017. The mechanisms of action of metformin. Diabetologia, 60(9), 1577–1585.

Ren, S., Yuan, X., Liu, F., Fang, F., Iqbal, H.M.N., Zahran, S.A. and Bilal, M. 2022. Bacteriocin from Lacticaseibacillus rhamnosus sp. A5: Isolation, Purification,

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Characterization, and Antibacterial Evaluation for Sustainable Food Processing, Sustainability (Switzerland), 14(15), 28-36.

Retlich, S., Duval, V., Graefe-Mody, U., Jaehde, U. and Staab, A. 2010. Impact of target-mediated drug disposition on linagliptin pharmacokinetics and DPP-4 inhibition in type 2 diabetic patients, Journal of Clinical Pharmacology, 50(8), 873–885.

Rettedal, E.A., Altermann, E., Roy, N.C. and Dalziel, J.E. 2019. The effects of unfermented and fermented cow and sheep milk on the gut microbiota, Frontiers in Microbiology, 10(3), 1–12.

Riastawaty, D., Girsang, E., Fachrial, E., Ginting, C.N., Piska, F. and Nasution, A.N. 2023. The activity of α-glucosidase inhibition of *Pediococcus acidilactici* BAMA 4 isolated from "Naniura" traditional foods from North Sumatera, Indonesia. *The Open Biochemistry Journal*, 17 (1), 12-15

Riciputi, Y., Serrazanetti, D.I., Verardo, V., Vannini, L., Caboni, M.F. and Lanciotti, R. 2016. Effect of fermentation on the content of bioactive compounds in tofu-type products, Journal of Functional Foods, 27 (15), 215-223.

Riyanto, R.A., Fukusaki, E. and Putri, S.P. 2024. Metabolite profiling highlights the effect of microbial intervention in the soaking step of tempe, International Journal of Food Science and Technology, 59(10), 7414–7425.

Romulo, A. and Surya, R. 2021. Tempe: A traditional fermented food of Indonesia and its health benefits, International Journal of Gastronomy and Food Science, 26 (7), 313-319.

Ruiz de la Bastida, A., Peirotén, Á., Langa, S., Rodríguez-Mínguez, E., Curiel, J.A., Arqués, J.L. and Landete, J.M. 2023. Fermented soy beverages as vehicle of probiotic lactobacilli strains and source of bioactive isoflavones: A potential double functional effect, Heliyon, 9(4), 1–10.

Ruiz, R., Luciana, G., Mohamed, F., Bleckwedel, J., Medina, R., De Vuyst, L., Hebert, E.M., et al. 2019. Diversity and functional properties of lactic acid bacteria isolated from wild fruits and flowers present in northern Argentina, Frontiers in Microbiology, 10(5), 1091–1015.

Sabbagh, G., Kurdi, B., Khayata, W. and Lahdo, R. 2021. A Study on the Inhibitory Potential of Dpp-Iv Enzyme by Lobeline through In silico and In vivo Approaches, International Research Journal of Pure and Applied Chemistry, 22(3), 79–91.

Saboori, B., Shahidi, F., Hedayati, S. and Javadmanesh, A. 2022. Investigating the Probiotic Properties and Antimicrobial Activity of Lactic Acid Bacteria Isolated from an Iranian Fermented Dairy Product, Kashk, Foods, 11(23), 17-23.

Safitri, M.F. and Swarastuti, A. 2013. Kualitas kefir berdasarkan konsentrasi kefir grain, Jurnal Aplikasi Teknologi Pangan, 2(2), 24-29.

Sah, B.N.P., Vasiljevic, T., McKechnie, S. and Donkor, O.N. 2016. Antibacterial and antiproliferative peptides in synbiotic yogurt—release and stability during refrigerated storage. Journal of Dairy Science, 99 (6), 4233–4242.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Saitou, N. and Nei, M. 1987. The neighbor-joining method: a new method for reconstructing phylogenetic trees, Molecular Biology and Evolution, 4(4), 406–425.

Santamaría, L., Reverón, I., de Felipe, F.L., de las Rivas, B. and Muñoz, R. 2018. Unravelling the reduction pathway as an alternative metabolic route to hydroxycinnamate decarboxylation in Lactobacillus plantarum, Applied and Environmental Microbiology, 84(15), 31-37.

Sasaki, Y., Horiuchi, H., Kawashima, H., Mukai, T. and Yamamoto, Y. 2014. NADH oxidase of Streptococcus thermophilus 1131 is required for the effective yogurt fermentation with Lactobacillus delbrueckii subsp. bulgaricus 2038, Bioscience of Microbiota, Food and Health, 33(1), 1-17.

Savaiano, D.A. and Hutkins, R.W. 2021. Yogurt, cultured fermented milk, and health: A systematic review, Nutrition Reviews, 79(5), 79-85.

Saxena, K.B. and Sawargaonkar, S.L. 2015. Genetic Enhancement of Seed Proteins in Pigeonpea – Methodologies, Accomplishments, and Opportunities, International Journal of Scientific Research, 4(5), 3–7.

Schillinger, U. and Holzapfel, W.H. 2011. Handbook of Culture Media for Food and Water Microbiology, in J. E. L. Corry, G. D. W. Curtis, and R. M. Baird (Eds.), Handbook of Culture Media for Food and Water Microbiology, 3rd ed., The Royal Society of Chemistry, 25 (4), 174–192.

Schnapp, G., Klein, T., Hoevels, Y., Bakker, R.A. and Nar, H. 2016. Comparative analysis of binding kinetics and thermodynamics of dipeptidyl peptidase-4 inhibitors and their relationship to structure, Journal of Medicinal Chemistry, 59(16), 7466–7477.

Sekhon, J., Grewal, S.K., Singh, I. and Kaur, J. 2017. Evaluation of nutritional quality and antioxidant potential of pigeonpea genotypes, Journal of Food Science and Technology, 54(11), 35-41.

Seo, K. Il, Choi, M.S., Jung, U.J., Kim, H.J., Yeo, J., Jeon, S.M. and Lee, M.K. 2008. Effect of curcumin supplementation on blood glucose, plasma insulin, and glucose homeostasis related enzyme activities in diabetic db/db mice, Molecular Nutrition and Food Research, 52(9), 995–1004.

Shaikh, S., Ali, S., Lim, J.H., Chun, H.J., Ahmad, K., Ahmad, S.S., Hwang, Y.C., et al. 2022. Dipeptidyl peptidase-4 inhibitory potentials of Glycyrrhiza uralensis and its bioactive compounds licochalcone A and licochalcone B: An in silico and in vitro study, Frontiers in Molecular Biosciences, 9(2), 1–10.

Sharma. 2006. Pigeonpea (Cajanus cajan L. Millsp.), Agrobacterium Protocols, 343(52), 359–368.

Sharma, O.P. and Bhat, T.K. 2009. DPPH antioxidant assay revisited, Food Chemistry, 113(4), 1202–1205.

Sharma, R., Garg, P., Kumar, P., Bhatia, S.K. and Kulshrestha, S. 2020. Microbial fermentation and its role in quality improvement of fermented foods, Fermentation, 6(4), 51–59.

Sharma, S., Kandasamy, S., Kavitake, D. and Shetty, P.H. 2018. Probiotic characterization and antioxidant properties of Weissella confusa KR780676, isolated from an Indian fermented food, LWT, 97 (41), 185-189.

Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Shen, C.-H. 2019. Quantification and Analysis of Proteins, Diagnostic Molecular Biology, 211(34), 187–214.

Shukla, S. and Goyal, A. 2012. Development of efficient fermentation process at bioreactor level by taguchi's orthogonal array methodology for enhanced dextransucrase production from Weissella confusa CAB3, Advances in Microbiology, 2(3), 277–283.

Sica, M.G., Olivera, N.L., Brugnoni, L.I., Marucci, P.L., López Cazorla, A.C. and Cubitto, M.A. 2010. Isolation, identification and antimicrobial activity of lactic acid bacteria from the Bahía Blanca Estuary, Revista de Biologia Marina y Oceanografia, 45(3), 12-20.

Sidhu, M.K., Lyu, F., Sharkie, T.P., Ajlouni, S. and Ranadheera, C.S. 2020. Probiotic yogurt fortified with chickpea flour: Physico-chemical properties and probiotic survival during storage and simulated gastrointestinal transit, Foods, 9(9), 7-12.

Silva, Y.P., Bernardi, A. and Frozza, R.L. 2020. The Role of Short-Chain Fatty Acids From Gut Microbiota in Gut-Brain Communication, Frontiers in Endocrinology, 11(24), 1–14.

Simonetti, A., Perna, A., Grassi, G. and Gambacorta, E. 2021. In vitro phenols bioaccessibility and antioxidant activity of goat milk yogurt fortified with Rhus coriaria leaf powder, Journal of Food Science, 86(4), 1400–1409.

Singh, A.K., Yadav, D., Sharma, N. and Jin, J.O. 2021. Dipeptidyl Peptidase (DPP)-IV Inhibitors with Antioxidant Potential Isolated from Natural Sources: A Novel Approach for the Management of Diabetes, Pharmaceuticals, 14 (9), 586-591.

Singh, J. and Mandal, S. 2019. Evaluation of techno-functional attributes of starter culture for preparation of Greek-style yogurt, Indian Journal of Dairy Science, 72(1), 23–29.

Singh, A.K., Yadav, D., Jo, J.-O., et al. 2020. Quercetin and coumarin inhibit dipeptidyl peptidase-IV and exhibit antioxidant properties in silico, in vitro, and ex vivo. Journal of Biomolecular Structure and Dynamics, 38(11), 3558–3571.

Sionek, B., Szydłowska, A., Küçükgöz, K. and Kołożyn-Krajewska, D. 2023. Traditional and New Microorganisms in Lactic Acid Fermentation of Food, Fermentation, 9(12), 35-40.

Sirilun, S., Sivamaruthi, B.S., Kesika, P., Peerajan, S. and Chaiyasut, C. 2017. Lactic acid bacteria mediated fermented soybean as a potent nutraceutical candidate, Asian Pacific Journal of Tropical Biomedicine, 7(10), 930–936.

Skarlatos, L., Marinopoulou, A., Petridis, D. and Raphaelides, S.N. 2020. Texture assessment of set yoghurt using sensory and instrumental methods, International Dairy Journal, 104(23), 104–144.

Skovsø, S. 2014. Modeling type 2 diabetes in rats using high fat diet and streptozotocin. Journal of Diabetes Investigation, 5(4), 349–358.

Soetarto, SJ Nastiti, T Suharni and L Sembiring. 2009. Petunjuk Praktikum Mikrobiologi, UGM, Yogyakarta.

Song, W., Lagmay, V., Jeong, B.G., Jung, J. and Chun, J. 2022. Changes in physicochemical and functional properties of *Opuntia humifusa* during

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

fermentation with cellulolytic enzyme and lactic acid bacteria. *LWT*, 159, 113192.

Soni, S. and Dey, G. 2014. Perspectives on global fermented foods, British Food Journal, 116(11), 1767–1787.

Srinivasan, K., Ramarao, P. 2007. Animal models in type 2 diabetes research: an overview. Indian Journal of Medical Research, 125 (3), 451–472.

Steinkraus, K.H. 2002. Fermentations in world food processing, Comprehensive Reviews in Food Science and Food Safety, 1(1), 23–32.

Subroto. 2008. Real Food True Health Makanan Sehat Untuk Hidup Lebih Sehat, PT AgroMedia Pustaka, Jakarta.

Suharto, E.L.S., Arief, I.I. and Taufik, E. 2016. Quality and antioxidant activity of yogurt supplemented with roselle during cold storage, Media Peternakan, 39(2), 82–89.

Sullivan, G.M. and Artino, A.R. 2013. Analyzing and Interpreting Data From Likert-Type Scales, Journal of Graduate Medical Education, 5(4), 541–542.

Sumantri, I. 2004. Pemanfaatan Mangga Lewat Masak menjadi Fruitghurt dengan Mikroorganisma Lactobacillus bulgaricus, Prosiding Seminar Nasional Rekayasa Kimia Dan Proses, ISSN: 1411, UNDIP, Semarang, 25–29.

Sun, Q., Xiao, X., Kim, Y., Kim, D., Yoon, K.S., Clark, J.M. and Park, Y. 2016. Imidacloprid Promotes High Fat Diet-Induced Adiposity and Insulin Resistance in Male C57BL/6J Mice, Journal of Agricultural and Food Chemistry, 64(49), 9293–9306.

Sung, J.M., Kim, Y.B., Kum, J.S., Choi, Y.S., Seo, D.H., Choi, H.W. and Park, J.D. 2015. Effects of freeze-dried mulberry on antioxidant activities and fermented characteristics of yogurt during refrigerated storage, Korean Journal for Food Science of Animal Resources, 35(6), 807–814.

Šušković, J., Kos, B., Beganović, J., Pavunc, A.L., Habjanič, K. and Matoć, S. 2010. Antimicrobial activity - The most important property of probiotic and starter lactic acid bacteria, Food Technology and Biotechnology, 48(3), 923-931.

Suter. 2013. Pangan Fungsional dan Prospek Pengembangannya, Pentingnya Makanan Alamiah (Natural Food) Untuk Kesehatan Jangka Panjang, Politeknik Kesehatan Denpasar, Denpasar, 1–17.

Tabanelli, G., Pasini, F., Riciputi, Y., Vannini, L., Gozzi, G., Balestra, F., Caboni, M.F., et al. 2018. Fermented Nut-Based Vegan Food: Characterization of a Home made Product and Scale-Up to an Industrial Pilot-Scale Production, Journal of Food Science, 83(3), 711–722.

Tabasco, R., Paarup, T., Janer, C., Peláez, C. and Requena, T. 2007. Selective enumeration and identification of mixed cultures of Streptococcus thermophilus, Lactobacillus delbrueckii subsp. bulgaricus, L. acidophilus, L. paracasei subsp. paracasei and Bifidobacterium lactis in fermented milk, International Dairy Journal, 17(9), 42-48.

Tadesse, G., Ephraim, E. and M Ashenafi. 2005. Assessment of the antimicrobial activity of lactic acid bacteria isolated from Borde and Shamita, traditional Ethiopian fermented beverages, on some foodborne, Journal of Food Safety, 8(5), 13–20.

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Tamime, A.Y. and Robinson, R.K. 2007. Tamime and Robinson's Yoghurt: Science and Technology, 3rd ed., Woodhead Publishing Series in Food Science, Technology and Nutrition, England.

Tang, R. and Li, L. 2021. Modulation of Short-Chain Fatty Acids as Potential Therapy Method for Type 2 Diabetes Mellitus, Canadian Journal of Infectious Diseases and Medical Microbiology, 20 (13), 23-31.

Tang, Y., Zhang, B., Li, X., Chen, P.X., Zhang, H., Liu, R. and Tsao, R. 2016. Bound phenolics of quinoa seeds released by acid, alkaline, and enzymatic treatments and their antioxidant and α-glucosidase and pancreatic lipase inhibitory effects. *Journal of Agricultural and Food Chemistry*, 64 (8), 1712–1719.

Tangka, J., Barung, E.N., Lyrawati, D., Soeatmadji, D. and Nurdiana, N. 2022. DPP-IV Inhibitory Activity of the Ethanolic Extract of Red Gedi Leaves Abelmoschus manihot L. Medic, Open Access Macedonian Journal of Medical Sciences, 10(1), 207–217.

Tao, H., Zhang, Y., Zeng, X., Shulman, G.I. and Jin, S. 2014. Niclosamide ethanolamine improves blood glycemic control and reduces hepatic steatosis in mice, Nature Medicine, 20(11), 1263–1271.

Tari, C., Ustok, F.I. and Harsa, S. 2009. Optimization of the associative growth of novel yoghurt cultures in the production of biomass, β-galactosidase and lactic acid using response surface methodology, International Dairy Journal, 19(4), 12-17.

Tashiro, Y., Inokuchi, S., Poudel, P., Okugawa, Y., Miyamoto, H., Miayamoto, H. and Sakai, K. 2016. Novel pH control strategy for efficient production of optically active l-lactic acid from kitchen refuse using a mixed culture system, Bioresource Technology, 25 (9), 216.-221.

Teneva-Angelova, T., Hristova, I., Pavlov, A. and Beshkova, D. 2018. Lactic Acid Bacteria-From Nature Through Food to Health, Advances in Biotechnology for Food Industry, 14 (9), 29-36.

Thant, E.P., Surachat, K., Chusri, S., Romyasamit, C., Pomwised, R., Wonglapsuwan, M., Yaikhan, T., et al.2024. Exploring Weissella confusa W1 and W2 Strains Isolated from Khao-Mahk as Probiotic Candidates: From Phenotypic Traits to Genomic Insights, Antibiotics, 13(7), 604-607.

Thomas, D.D., Stockman, M.C., Yu, L., Meshulam, T., McCarthy, A.C., Ionson, A., Burritt, N., et al. 2019. Effects of medium chain triglycerides supplementation on insulin sensitivity and beta cell function: A feasibility study, PloS One, 14(12), 1–16.

Thompson, J.D., Higgins, D.G. and Gibson, T.J. 1994. CLUSTAL W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice, Nucleic Acids Research, 22(11), 4673–4680.

Tomasik, P.J. and Tomasik, P. 2003. Probiotics and Prebiotics, Cereal Chemistry, 80(2), 113–117.

Torres, A., Frias, J., Granito, M. and Vidal-Valverde, C. 2006. Fermented pigeon pea (Cajanus cajan) ingredients in pasta products. Journal of Agricultural and Food Chemistry, 54(18), 6685–6691.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Tosif, M.M., Najda, A., Bains, A., Krishna, T.C., Chawla, P., Dyduch-Siemińska, M., Klepacka, J., et al. 2021. A comprehensive review on the interaction of milk protein concentrates with plant-based polyphenolics, International Journal of Molecular Sciences, 22(24), 14-18.

Trachtenberg, T. and Martirosyan, D. 2024. Addressing vitamin D deficiency through nutritional strategies. Bioactive Compounds in Health and Disease, 7(6), 289–301.

Tsuda, H. and Shibata, E. 2017. Bioconversion of daidzin to daidzein by lactic acid bacteria in fermented soymilk, Food Science and Technology Research, 23(1), 157–161.

Tur, J.A. and Bibiloni, M.M. 2015. Functional Foods, Encyclopedia of Food and Health, Elsevier Inc., 157–161.

Ungar, Y., Osundahunsi, O.F. and Shimoni, E. 2003. Thermal stability of genistein and daidzein and its effect on their antioxidant activity, Journal of Agricultural and Food Chemistry, 51(15), 4394–4399.

Urdaneta, V. and Casadesús, J. 2017. Interactions between bacteria and bile salts in the gastrointestinal and hepatobiliary tracts, Frontiers in Medicine, 4(10), 418-426.

Utami, T., Cindarbhumi, A., Khuangga, M.C., Rahayu, E.S., Cahyanto, M.N., Nurfiyani, S. and Zulaichah, E. 2020. Preparation of indigenous lactic acid bacteria starter cultures for large scale production of fermented milk. *Digital Press Life Sciences*, 2, 10-15.

Valenzuela, H. and Smith, J. 2002. Cooperative Extension Service. College of Tropical Agriculture and Human Resources, Manoa.

Varady, K.A. and Jones, P.J.H. 2005. Combination diet and exercise interventions for the treatment of dyslipidemia: An effective preliminary strategy to lower cholesterol levels?, Journal of Nutrition, 135(8), 1829–1835.

Van der Maesen. 1980. Pigeonpea Genetic Resources, International Workshop on Pigeonpeas Volume 1, International Crops Research Institute for the Semi-Arid Tropics, Icrisat center, India, 5 (7), 9–14.

van Deuren, T., Blaak, E.E. and Canfora, E.E. 2022. Butyrate to combat obesity and obesity-associated metabolic disorders: Current status and future implications for therapeutic use. Obesity Reviews, 23 (10), 1–27.

Vo, T.L.T., Cai, X.M., Liao, J.W., Huang, L.G., Chen, C.L., Wu, C.H. and Song, T.Y. 2023. Safety Assessment and Hepatic–Renal Protection of Cajanus cajan (L.) Millsp. Root and Its Soy Isoflavone Contents, Nutrients, 15(18), 3963-3967.

Wang, A., Dorso, C., Kopcho, L., Locke, G., Langish, R., Harstad, E., Shipkova, P., et al. 2012. Potency, selectivity and prolonged binding of saxagliptin to DPP4: Maintenance of DPP4 inhibition by saxagliptin in vitro and ex vivo when compared to a rapidly-dissociating DPP4 inhibitor, BMC Pharmacology, 12(2), 1–12.

Wang, X., Wang, L., Wei, X., Xu, C., Cavender, G., Lin, W. and Sun, S. 2025. Invited review: Advances in yogurt development—Microbiological safety, quality, functionality, sensory evaluation, and consumer perceptions across

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

different dairy and plant-based alternative sources, Journal of Dairy Science, 108(1), 33–58.

Wang, Y., Wu, J., Lv, M., Shao, Z., Hungwe, M., Wang, J., Bai, X., et al. 2021. Metabolism Characteristics of Lactic Acid Bacteria and the Expanding Applications in Food Industry, Frontiers in Bioengineering and Biotechnology, 9 (5), 34-41.

Wang, Y.C., Yu, R.C., Yang, H.Y. and Chou, C.C. 2003. Sugar and acid contents in soymilk fermented with lactic acid bacteria alone or simultaneously with bifidobacteria, Food Microbiology, 20(3), 333–338.

Wei, H., Bu, R., Yang, Q., Jia, J., Li, T., Wang, Q. and Chen, Y. 2019. Exendin-4 Protects against Hyperglycemia-Induced Cardiomyocyte Pyroptosis via the AMPK-TXNIP Pathway, Journal of Diabetes Research, 201(89), 1–13.

Whon, T.W., Ahn, S.W., Yang, S., Kim, J.Y., Kim, Y.B., Kim, Y., Hong, J.M., et al. 2021. ODFM, an omics data resource from microorganisms associated with fermented foods, Scientific Data, 8(1), 6–14.

Wick, R.R., Judd, L.M. and Holt, K.E. 2019. Performance of neural network basecalling tools for Oxford Nanopore sequencing, Genome Biology, 20(1), 1–10.

Widjajaseputra, A.I., Widyastuti, T.E.W. and Trisnawati, C.Y. 2019. Potency of mung bean with different soaking times as protein source for breastfeeding women in Indonesia, Food Research, 3(5), 23-27.

Widodo. 2021. Bakteri asam laktat strain lokal: isolasi sampai aplikasi sebagai probiotik dan starter fermentasi susu, 1st ed., Gadjah Mada University Press.

Widodo. 2022. Peran Bioteknologi Dalam Pengembangan Genetik Bakteri Asam Laktat Sebagai Kultur Fermentasi Susu Dan Probiotik, Pidato Pengukuhan Jabatan Guru Besar Dalam Bidang Bioteknologi Hasil Ternak Pada Fakultas Peternakan. UGM, available at :https://ugm.ac.id/id/berita/22566-prof-widodo-dikukuhkan-sebagai-guru-besar-ugm.

Widodo, W., Kusumaningrum, H.R.P., Wihadmadyatami, H. and Wicaksana, A.L. 2023. Milk Fermented with Pediococcus acidilactici Strain BE Improves High Blood Glucose Levels and Pancreatic Beta-Cell Function in Diabetic Rats, Food Science of Animal Resources, 43(1), 170–183.

Widodo, W., Taufiq, T.T., Aryati, E., Kurniawati, A. and Asmara, W. 2012. Human Origin Lactobacillus casei Isolated from Indonesian Infants Demonstrating Potential Characteristics as Probiotics in vitro, Indonesian Journal of Biotechnology, 17(1), 79–89.

Widowati, S. S and Buckle, K.A. K. 1991. Sifat-Sifat Fisik dan Mikroskopis Pati Gude (Cajanus Cajan (L) Millsp), Agritech: Jurnal Fakultas Teknologi Pertanian UGM, Universitas Gadjah Mada, 11(2), 2–6.

Wijayanti, A.A. and Wikandari, P.R. 2023. Potency of fermented jicama extract cultured with Lactobacillus plantarum B1765 for producing short chain fatty acid, Jurnal Pijar Mipa, 18(5), 12-18.

Williams, K., Oo, T. and Martirosyan, D. 2023. Exploring the effectiveness of Lactobacillus probiotics in weight management: A literature review. Functional Food Science, 3(5), 45.

Winarno. 2002. Kimia Pangan Dan Gizi, 3, Gramedia, Jakarta.

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Xiao, X., Sun, Q., Kim, Y., Yang, S.H., Qi, W., Kim, D., Yoon, K.S., et al. 2018. Exposure to permethrin promotes high fat diet-induced weight gain and insulin resistance in male C57BL/6J mice, Food and Chemical Toxicology, 111(47), 405–416.

Yamamoto, E., Watanabe, R., Tooyama, E. and Kimura, K. 2021. Effect of fumaric acid on the growth of Lactobacillus delbrueckii ssp. bulgaricus during yogurt fermentation, Journal of Dairy Science, 104(9), 9617–9626.

Yan, Y., Wolkers-Rooijackers, J., Nout, M.J.R. and Han, B. 2013. Microbial diversity and dynamics of microbial communities during back-slop soaking of soybeans as determined by PCR-DGGE and molecular cloning, World Journal of Microbiology and Biotechnology, 29(10), 1969–1974.

Yan, T.H., Babji, A.S., Lim, S.J. and Sarbini, S.R. 2021. A systematic review of edible swiftlet's nest (ESN): Nutritional bioactive compounds, health benefits as functional food, and recent development as bioactive ESN glycopeptide hydrolysate. Trends in Food Science & Technology, 115, 117–132.

Yang, J., Wang, C., Guo, Q., Deng, W., Du, G. and Li, R. 2022. Isolation of the Thermostable β-Glucosidase-Secreting Strain Bacillus altitudinis JYY-02 and Its Application in the Production of Gardenia Blue, Microbiology Spectrum, 10(4), 27-36.

Yang, S., Yan, D., Zou, Y., Mu, D., Li, X., Shi, H., Luo, X., et al. 2021. Fermentation temperature affects yogurt quality: A metabolomics study, Food Bioscience, 42(6), 25-29.

Yang, Y., Shi, C.Y., Xie, J., Dai, J.H., He, S.L. and Tian, Y. 2020. Identification of Potential Dipeptidyl Peptidase (DPP)-IV Inhibitors among Moringa oleifera Phytochemicals by Virtual Screening, Molecular Docking Analysis, ADME/T-Based Prediction, and In Vitro Analyses, Molecules, 25(1), 301–315.

Yanuwardana, Basito and Muhammad, D.R.A. 2013. Kajian Karakteristik Fisikokimia Tepung Labu Kuning (Cucurbita moschata) Termodifikasi dengan Variasi Lama Perendaman dan Konsentrasi Asam Laktat, Jurnal Teknosains Pangan, 2(2), 414-419.

Yaribeygi, H., Sathyapalan, T. and Sahebkar, A. 2019. Molecular mechanisms by which GLP-1 RA and DPP-4i induce insulin sensitivity, Life Sciences, 234(6), 116–125.

Yarlina, V.P., Andoyo, R., Djali, M. and Lani, M.N. 2022. Metagenomic Analysis for Indigenous Microbial Diversity in Soaking Process of Making Tempeh Jack Beans (*Canavalia Ensiformis*), Current Research in Nutrition and Food Science, 10(2), 620–632.

Ye, Y., Li, P., Zhou, J., He, J. and Cai, J. 2022. The improvement of sensory and bioactive properties of yogurt with the introduction of Tartary buckwheat. *Foods*, 11 (12), 1774.

Yilmaz-Ersan, L. and Topcuoglu, E. 2022. Evaluation of instrumental and sensory measurements using multivariate analysis in probiotic yogurt enriched with almond milk, Journal of Food Science and Technology, 59(1), 133–143.

Yogeswara, I.B.A., Kusumawati, I.G.A.W., Nursini, N.W., Mariyatun, M., Rahayu, E.S. and Haltrich, D. 2023. Health-Promoting Role of Fermented Pigeon Pea

UNIVERSITAS GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

(Cajanus cajan L (Mill)) Milk Enriched with γ-aminobutyric Acid (GABA) Using Probiotic Lactiplantibacillus plantarum Dad-13, Fermentation, 9(7), 587–598.

Yoon, J.W., Ahn, S. Il, Jhoo, J.W. and Kim, G.Y. 2019. Antioxidant Activity of Yogurt Fermented at Low Temperature and Its Anti-inflammatory Effect on DSS-induced Colitis in Mice, Food Science of Animal Resources, Korean Society for Food Science of Animal Resources, 39(1), 162–176.

Yu, A.O., Goldman, E.A., Brooks, J.T., Golomb, B.L., Yim, I.S., Gotcheva, V., Angelov, A., et al. 2021. Strain diversity of plant-associated Lactiplantibacillus plantarum, Microbial Biotechnology, 14(5), 14-18.

Yu, M., Ma, J., Wang, X., Lu, M., Fu, X., Zhang, L., Shi, T., et al. 2022. Peanut sprout yogurt: Increased antioxidant activity and nutritional content and sensory evaluation by fuzzy mathematics, Journal of Food Processing and Preservation, 46(7), 15-23.

Yudianti, N.F., Yanti, R., Cahyanto, M.N., Rahayu, E.S. and Utami, T. 2020. Isolation and Characterization of Lactic Acid Bacteria from Legume Soaking Water of Tempeh Productions, Digital Press Life Sciences, 2(1), 1–7.

Yue, Y., Wang, S., Lv, X., Wang, C., Xu, B., Ping, L., Guo, J., et al. 2022. Analysis of the complete genome sequence of Lactobacillus delbrueckii ssp. bulgaricus with post-acidification capacity and its influence on yogurt in storage, Journal of Dairy Science, 105(2), 1058–1071.

Yuksekdag, Z., Cinar Acar, B., Aslim, B. and Tukenmez, U. 2018. β-Glucosidase activity and bioconversion of isoflavone glycosides to aglycones by potential probiotic bacteria, International Journal of Food Properties, 20.

Yuniastuti, A. 2014. Probiotik (Dalam Perspektif Kesehatan), UNNES Press, UNNES PRESS, Semarang.

Zainuddin, A., Wasito, E.B. and Puspaningsih, N.N.T. 2008. Pengujian In Vitro Xilooligosakarida sebagai Kandidat Prebiotik, Berkala Penelitian Hayati, 14(1), 101–111.

Zhang, M., Lv, X.Y., Li, J., Xu, Z.G., Chen, L. 2008. The characterization of high-fat diet and multiple low-dose streptozotocin induced type 2 diabetes rat model. Journal of Diabetes Research, 2008 (1), 704045.

Zhang, L., Pan, M., Li, T., Jin, Z., Liu, Z., Liu, Q., Liu, Y., et al. 2023. Study on Optimal Extraction and Hypoglycemic Effect of Quercetin, Evidence-Based Complementary and Alternative Medicine, 23(1), 1–14.

Zhang, S.S., Xu, Z.S., Qin, L.H. and Kong, J. 2020. Low-sugar yogurt making by the co-cultivation of Lactobacillus plantarum WCFS1 with yogurt starter cultures, Journal of Dairy Science, 103(4), 451-459.

Zhang, X., Tian, W., Xie, B. and Sun, Z. 2022. Insight into the Influence of Lactic Acid Bacteria Fermentation on the Variations in Flavor of Chickpea Milk, Foods, 11(16), 221-229.

Zhao, L.L., Wang, X.L., Tian, Q. and Mao, X.Y. 2016. Effect of casein to whey protein ratios on the protein interactions and coagulation properties of low-fat yogurt, Journal of Dairy Science, 99(10), 46-59.

Zheng, J., Wittouck, S., Salvetti, E., Franz, C.M.A.P., Harris, H.M.B., Mattarelli, P., O'toole, P.W., et al. 2020. A taxonomic note on the genus Lactobacillus:

UNIVERSITAS
GADJAH MADA
Isolasi, Identifikasi Dan Karakterisasi Bakteri Asam Laktat Dari Air Rendaman Kacang Gude (Cajanus Cajan L. Millps) dan Potensinya sebagai Starter Fermentasi Yoghurt Kacang Gude sebagai Antihiperglikemia
Yuni Sine, Prof. Widodo, S.P., M.Sc., Ph.D.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Description of 23 novel genera, emended description of the genus Lactobacillus beijerinck 1901, and union of Lactobacillaceae and Leuconostocaceae, International Journal of Systematic and Evolutionary Microbiology, 70(4), 217-221.

Zhou, N., Zhang, J.X., Fan, M.T., Wang, J., Guo, G. and Wei, X.Y. 2012. Antibiotic resistance of lactic acid bacteria isolated from Chinese yogurts, Journal of Dairy Science, 95(9), 312-319.

Zhou, Y., Drouin, P. and Lafrenière, C. 2016. Effect of temperature (5–25°C) on epiphytic lactic acid bacteria populations and fermentation of whole-plant corn silage, Journal of Applied Microbiology, 121(3), 657-667.

Zhu, L., Ying, N., Hao, L., Fu, A., Ding, Q., Cao, F., Ren, D., et al. 2024. Probiotic yogurt regulates gut microbiota homeostasis and alleviates hepatic steatosis and liver injury induced by high-fat diet in golden hamsters, Food Science & Nutrition, 12(4), 2488–2501.

Żyżyńska-Granica, B., Gierlikowska, B., Parzonko, A., Kiss, A.K. and Granica, S. 2020. The bioactivity of flavonoid glucuronides and free aglycones in the context of their absorption, II phase metabolism and deconjugation at the inflammation site, Food and Chemical Toxicology, 135 (110), 929-931.