

REFERENCE

- Abdel-Mobdy, A. E., Khattab, M. S., Mahmoud, E. A., Mohamed, E. R., & Abdel-Rahim, E. A. (2021). Semi-modified okara whey diet increased insulin secretion in diabetic rats fed a basal or high fat diet. *Food Science and Biotechnology*, 30(1), 107–116. <https://doi.org/10.1007/s10068-020-00842-3>
- Adriawan, I. ., Andrie, M., Susilowati, R., Pramono, S., & Endro Nugroho, A. (2014). HOMA-IR INDEX EVALUATION ON ANTIDIABETES MELLITUS EFFECT OF *Andrographis paniculata* (Burm. f.) Nees PURIFIED EXTRACT AND ANDROGRAPHOLIDE EVALUASI EFEK ANTI-DIABETES MELITUS EKSTRAK TERPURIFIKASI *Andrographis paniculata* (Burm. f.) Nees DAN ANDROGRAFOLID DE. *Traditional Medicine Journal*, 19(1), 2014.
- Afrin Zinia, S., Rahim, A., Latif Jony, M. A., Ara Begum, A., & Rahman Mazumder, M. A. (2019). The Roles of Okara Powder on the Processing and Nutrient Content of Roti and Paratha. *International Journal of Agriculture & Environmental Science*, 6(2), 18–23. <https://doi.org/10.14445/23942568/ijaes-v6i2p104>
- Ahn, S. H., Oh, S. C., Choi, I. gyu, Han, G. seong, Jeong, H. seob, Kim, K. woo, Yoon, Y. ho, & Yang, I. (2010). Environmentally friendly wood preservatives formulated with enzymatic-hydrolyzed okara, copper and/or boron salts. *Journal of Hazardous Materials*, 178(1–3), 604–611. <https://doi.org/10.1016/j.jhazmat.2010.01.128>
- Al-Awar, A., Kupai, K., Veszeka, M., Szucs, G., Attieh, Z., Murlasits, Z., Török, S., Pósa, A., & Varga, C. (2016). Experimental Diabetes Mellitus in Different Animal Models. *Journal of Diabetes Research*, 2016. <https://doi.org/10.1155/2016/9051426>
- Alam, N., Amin, R., Khan, A., Ara, I., Shim, M. J., Lee, M. W., & Lee, T. S. (2008). *Nutritional Analysis of Cultivated Mushrooms in Bangladesh* -. 36(4), 228–

232.

- Alemayehu, D., Desse, G., Abegaz, K., Desalegn, B. B., & Getahun, D. (2016). Proximate, Mineral Composition and Sensory Acceptability of Home Made Noodles from Stinging Nettle (*Urtica simensis*) Leaves and Wheat Flour Blends. *International Journal of Food Science and Nutrition Engineering*, 6(3), 55–61. <https://doi.org/10.5923/j.food.20160603.02>
- Álvarez-Nava, F., Bastidas, D., Racines-Orbe, M., & Guarderas, J. (2020). Insulin Sensitivity and Pancreatic β -Cell Function in Ecuadorian Women With Turner Syndrome. *Frontiers in Endocrinology*, 11, 482. <https://doi.org/10.3389/FENDO.2020.00482/BIBTEX>
- Anahita, A., Asmah, R., & Fauziah, O. (2014). Protective effect of pomegranate on histopathology of liver and kidney on generated oxidative stress diabetic induced rats. *Malaysian Journal of Microscopy*, 10(1), 150–158. <https://doi.org/10.4172/2157-7099.1000294>
- Anderson, J. W., Baird, P., Davis, R. H., Ferreri, S., Knudtson, M., Koraym, A., Waters, V., & Williams, C. L. (2009). Health benefits of dietary fiber. *Nutrition Reviews*, 67(4), 188–205. <https://doi.org/10.1111/j.1753-4887.2009.00189.x>
- Atkinson, M. A., & Eisenbarth, G. S. (2001). Type 1 diabetes: New perspectives on disease pathogenesis and treatment. *Lancet*, 358(9277), 221–229. [https://doi.org/10.1016/S0140-6736\(01\)05415-0](https://doi.org/10.1016/S0140-6736(01)05415-0)
- Atlas, I. D. F. D. (1955). International Diabetes Federation. In *The Lancet* (Vol. 266, Issue 6881). [https://doi.org/10.1016/S0140-6736\(55\)92135-8](https://doi.org/10.1016/S0140-6736(55)92135-8)
- Bahne, E., Hansen, M., Brønden, A., Sonne, D. P., Vilsbøll, T., & Knop, F. K. (2016). Involvement of glucagon-like peptide-1 in the glucose-lowering effect of metformin. *Diabetes, Obesity and Metabolism*, 18(10), 955–961. <https://doi.org/10.1111/DOM.12697>
- Baky, M. H., Salah, M., Ezzelarab, N., Shao, P., Elshahed, M. S., & Farag, M. A.

- (2022). Insoluble dietary fibers: structure, metabolism, interactions with human microbiome, and role in gut homeostasis. *Https://Doi.Org/10.1080/10408398.2022.2119931*.
<https://doi.org/10.1080/10408398.2022.2119931>
- Barham, D., & Trinder, P. (1972). An improved colour reagent for the determination of blood glucose by the oxidase system. *The Analyst*, 97(1151), 142–145. <https://doi.org/10.1039/an9729700142>
- Bergman, M., Jagannathan, R., Buysschaert, M., Pareek, M., Olsen, M. H., Nilsson, P. M., Medina, J. L., Roth, J., Chetrit, A., Groop, L., & Dankner, R. (2018). Lessons learned from the 1-hour post-load glucose level during OGTT: Current screening recommendations for dysglycaemia should be revised. *Diabetes/Metabolism Research and Reviews*, 34(5), e2992. <https://doi.org/10.1002/DMRR.2992>
- Bergman, M., Manco, M., Sesti, G., Dankner, R., Pareek, M., Jagannathan, R., Chetrit, A., Abdul-Ghani, M., Buysschaert, M., Olsen, M. H., Nilsson, P. M., Medina, J. L., Roth, J., Groop, L., del Prato, S., Raz, I., & Ceriello, A. (2018). Petition to replace current OGTT criteria for diagnosing prediabetes with the 1-hour post-load plasma glucose ≥ 155 mg/dl (8.6 mmol/L). *Diabetes Research and Clinical Practice*, 146, 18–33. <https://doi.org/10.1016/J.DIABRES.2018.09.017>
- Boucher, J., Kleinridders, A., & Kahn, C. R. (2014). Insulin Receptor Signaling in Normal. *Cold Spring Harb Perspect Biol* 2014, 6, a009191.
- Burhans, M. S., Hagman, D. K., Kuzma, J. N., Schmidt, K. A., & Kratz, M. (2018). Contribution of adipose tissue inflammation to the development of type 2 diabetes mellitus. *Comprehensive Physiology*, 9(1), 1. <https://doi.org/10.1002/CPHY.C170040>
- Cai, Y., Huang, L., Tao, X., Su, J., Chen, B., Zhao, M., Zhao, Q., & Van der Meeren, P. (2020). Carboxymethyl cellulose/okara protein influencing microstructure, rheological properties and stability of O/W emulsions. In

Journal of the Science of Food and Agriculture (Vol. 101, Issue 9).
<https://doi.org/10.1002/jsfa.10998>

Campderrós, M. E. (2017). Effect of Okara Flour Addition on the Physical and Sensory Quality of Wheat Bread. *MOJ Food Processing & Technology*, 4(6), 184–190. <https://doi.org/10.15406/mojfpt.2017.04.00111>

Canaan, J. M. M., Brasil, G. S. A. P., de Barros, N. R., Mussagy, C. U., Guerra, N. B., & Herculano, R. D. (2022). Soybean processing wastes and their potential in the generation of high value added products. *Food Chemistry*, 373, 131476. <https://doi.org/10.1016/J.FOODCHEM.2021.131476>

Capuano, E. (2017). The behavior of dietary fiber in the gastrointestinal tract determines its physiological effect. *Https://Doi.Org/10.1080/10408398.2016.1180501*, 57(16), 3543–3564. <https://doi.org/10.1080/10408398.2016.1180501>

Cassidy, Y. M., McSorley, E. M., & Allsopp, P. J. (2018). Effect of soluble dietary fibre on postprandial blood glucose response and its potential as a functional food ingredient. *Journal of Functional Foods*, 46, 423–439. <https://doi.org/10.1016/J.JFF.2018.05.019>

Chand, T., & Barman, A. (2012). He obtained his MSc in Organic Chemistry from Hemwati Nandan Bahuguna University, Garhwal, in 1998. He had undergone one-year Post Graduate Diploma in Pulp and Paper Technology from Forest Research Institute (F.R.I.), Dehradun, in 2001. He obtained his PhD in Organic Chemistry from Kumaun University. *Nutrition and Public Health*, 4, 101–118. <https://doi.org/10.1504/IJFSNPH.2011.044528>

Chen, C., Cohrs, C. M., Stertmann, J., Bozsak, R., & Speier, S. (2017). Human beta cell mass and function in diabetes: Recent advances in knowledge and technologies to understand disease pathogenesis. *Molecular Metabolism*, 6(9), 943–957. <https://doi.org/10.1016/J.MOLMET.2017.06.019>

Chen, T. C., Benjamin, D. I., Kuo, T., Lee, R. A., Li, M. L., Mar, D. J., Costello,

- D. E., Nomura, D. K., & Wang, J. C. (2017). The glucocorticoid-Angptl4-ceramide axis induces insulin resistance through PP2A and PKCz. *Science Signaling*, 10(489).
https://doi.org/10.1126/SCISIGNAL.AAI7905/SUPPL_FILE/AAI7905_SM.PDF
- Chourpiliadis, C., & Mohiuddin, S. S. (2022). Biochemistry, Gluconeogenesis. *StatPearls*. <https://www.ncbi.nlm.nih.gov/books/NBK544346/>
- Colletti, A., Attrovio, A., Boffa, L., Mantegna, S., & Cravotto, G. (2020a). Valorisation of by-products from soybean (*Glycine max* (L.) Merr.) processing. *Molecules*, 25(9), 1–33.
<https://doi.org/10.3390/molecules25092129>
- Colletti, A., Attrovio, A., Boffa, L., Mantegna, S., & Cravotto, G. (2020b). Valorisation of By-Products from Soybean (*Glycine max* (L.) Merr.) Processing. *Molecules* 2020, Vol. 25, Page 2129, 25(9), 2129.
<https://doi.org/10.3390/MOLECULES25092129>
- Davidson, M. B. (2020). Metformin Should Not Be Used to Treat Prediabetes. *Diabetes Care*, 43(9), 1983–1987. <https://doi.org/10.2337/DC19-2221>
- DeFronzo, R. A. (2004). Pathogenesis of type 2 diabetes mellitus. *Medical Clinics of North America*, 88(4), 787–835.
<https://doi.org/10.1016/j.mcna.2004.04.013>
- Duru, K. C., Kovaleva, E. G., Danilova, I. G., van der Bijl, P., & Belousova, A. V. (2018). The potential beneficial role of isoflavones in type 2 diabetes mellitus. *Nutrition Research*, 59, 1–15.
<https://doi.org/10.1016/J.NUTRES.2018.06.005>
- Duru, K., Kovaleva, E., Danilova, I., van der Bijl, P., & Belousova, A. (2018). *The potential beneficial role of isoflavones in type 2 diabetes mellitus ScienceDirect*. <https://doi.org/10.1016/j.nutres.2018.06.005>
- Eddyono, F., & Subroto, B. (2014). Purchase Behavior of Noodles: A Case Study

of Effort Primary Food Diversification in Indonesia. *International Journal of Science and Technology*, 3(10), 655–662.

Eizirik, D. L., Pasquali, L., & Cnop, M. (2020). Pancreatic β -cells in type 1 and type 2 diabetes mellitus: different pathways to failure. *Nature Reviews Endocrinology* 2020 16:7, 16(7), 349–362. <https://doi.org/10.1038/s41574-020-0355-7>

Elleuch, M., Bedigian, D., Roiseux, O., Besbes, S., Blecker, C., & Attia, H. (2011). Dietary fibre and fibre-rich by-products of food processing: Characterisation, technological functionality and commercial applications: A review. *Food Chemistry*, 124(2), 411–421. <https://doi.org/10.1016/J.FOODCHEM.2010.06.077>

Faisal, M., Gani, A., Mulana, F., & Daimon, H. (2016). Treatment and utilization of industrial tofu waste in Indonesia. *Asian Journal of Chemistry*, 28(3), 501–507. <https://doi.org/10.14233/ajchem.2016.19372>

Farida, E., Nuraida, L., Giriwono, P. E., & Jenie, B. S. L. (2020). Lactobacillus rhamnosus Reduces Blood Glucose Level through Downregulation of Gluconeogenesis Gene Expression in Streptozotocin-Induced Diabetic Rats. *International Journal of Food Science*, 2020. <https://doi.org/10.1155/2020/6108575>

Farrand, C., Charlton, K., Crino, M., Santos, J., Rodriguez-Fernandez, R., Ni Mhurchu, C., & Webster, J. (2017). Know Your Noodles! Assessing Variations in Sodium Content of Instant Noodles across Countries. *Nutrients* 2017, Vol. 9, Page 612, 9(6), 612. <https://doi.org/10.3390/NU9060612>

Feder, D., & Fonseca, F. L. A. (2017). The Mechanism of Fiber Effects on Insulin Resistance. In *Dietary Fiber for the Prevention of Cardiovascular Disease: Fiber's Interaction between Gut Microflora, Sugar Metabolism, Weight Control and Cardiovascular Health*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-805130-6.00002-1>

- Feng, J. Y., Wang, R., Thakur, K., Ni, Z. J., Zhu, Y. Y., Hu, F., Zhang, J. G., & Wei, Z. J. (2021). Evolution of okara from waste to value added food ingredient: An account of its bio-valorization for improved nutritional and functional effects. *Trends in Food Science & Technology*, 116, 669–680. <https://doi.org/10.1016/J.TIFS.2021.08.011>
- Figuerola, F., Hurtado, M. L., Estévez, A. M., Chiffelle, I., & Asenjo, F. (2005). Fibre concentrates from apple pomace and citrus peel as potential fibre sources for food enrichment. *Food Chemistry*, 91(3), 395–401. <https://doi.org/10.1016/j.foodchem.2004.04.036>
- Forouhi, N. G., & Wareham, N. J. (2019). Epidemiology of diabetes. *Medicine*, 47(1), 22–27. <https://doi.org/10.1016/J.MPMED.2018.10.004>
- Giri, B., Dey, S., Das, T., Sarkar, M., Banerjee, J., & Dash, S. K. (2018). Chronic hyperglycemia mediated physiological alteration and metabolic distortion leads to organ dysfunction, infection, cancer progression and other pathophysiological consequences: An update on glucose toxicity. *Biomedicine & Pharmacotherapy*, 107, 306–328. <https://doi.org/10.1016/J.BIOPHA.2018.07.157>
- Gowd, V., Xie, L., Zheng, X., & Chen, W. (2019). Dietary fibers as emerging nutritional factors against diabetes: focus on the involvement of gut microbiota. *Https://Doi.Org/10.1080/07388551.2019.1576025*, 39(4), 524–540. <https://doi.org/10.1080/07388551.2019.1576025>
- Goyal, R., Jialal, I., & Castano, M. (2022). Diabetes Mellitus Type 2 (Nursing). *StatPearls*. <https://www.ncbi.nlm.nih.gov/books/NBK568737/>
- Grizotto, R. K., Rufi, C. R. G., Yamada, E. A., & Vicente, E. (2010a). Evaluation of the quality of a molded sweet biscuit enriched with okara flour. *Ciencia e Tecnologia de Alimentos*, 30(SUPPL. 1), 270–275. <https://doi.org/10.1590/s0101-20612010000500041>
- Grizotto, R. K., Rufi, C. R. G., Yamada, E. A., & Vicente, E. (2010b). Evaluation

of the quality of a molded sweet biscuit enriched with okara flour. *Food Science and Technology*, 30(SUPPL. 1), 270–275.
<https://doi.org/10.1590/S0101-20612010000500041>

Guimarães, R. M., Ida, E. I., Falcão, H. G., Rezende, T. A. M. de, Silva, J. de S., Alves, C. C. F., Silva, M. A. P. da, & Egea, M. B. (2020). Evaluating technological quality of okara flours obtained by different drying processes. *LWT*, 123, 109062. <https://doi.org/10.1016/J.LWT.2020.109062>

Gupta, R., & Sharma, S. (2012). Effect of germinated <i>Glycine max</i> seeds on glycemic control in STZ+NAD induced type 2 diabetic models: a preliminary study. *Journal of Experimental and Integrative Medicine*, 2(2), 155. <https://doi.org/10.5455/jeim.020112.or.021>

Gupta, S., Lee, J. J. L., & Chen, W. N. (2018). Analysis of Improved Nutritional Composition of Potential Functional Food (Okara) after Probiotic Solid-State Fermentation. *Journal of Agricultural and Food Chemistry*, 66(21), 5373–5381. <https://doi.org/10.1021/acs.jafc.8b00971>

He, Y., Wang, B., Wen, L., Wang, F., Yu, H., Chen, D., Su, X., & Zhang, C. (2022). Effects of dietary fiber on human health. *Food Science and Human Wellness*, 11(1), 1–10. <https://doi.org/10.1016/J.FSHW.2021.07.001>

Hidayat, B., Ramadani, R. V., Rudijanto, A., Soewondo, P., Suastika, K., & Siu Ng, J. Y. (2022). Direct Medical Cost of Type 2 Diabetes Mellitus and Its Associated Complications in Indonesia. *Value in Health Regional Issues*, 28, 82–89. <https://doi.org/10.1016/J.VHRI.2021.04.006>

Hu, X., Gao, J., Zhang, Q., Fu, Y., Li, K., Zhu, S., & Li, D. (2013). Soy fiber improves weight loss and lipid profile in overweight and obese adults: A randomized controlled trial. *Molecular Nutrition and Food Research*, 57(12), 2147–2154. <https://doi.org/10.1002/mnfr.201300159>

Huq, S., Das, P. C., Islam, M. A., Jubayer, M. F., Ranganathan, T. V., & Mazumder, M. A. R. (2021). Nutritional, textural, and sensory quality of oil fried donut

enriched with extracted dietary fiber and okara flour. *Journal of Food Processing and Preservation*, 45(3), e15310.
<https://doi.org/10.1111/JFPP.15310>

Ibrahim, G. M., Ahmed, O. M., Abbas, N. H., & El Fateh, M. M. (2018). Evaluation of the anti-diabetic effects of epicatechin and/or gallic acid in STZ/NA-induced diabetic Wister rats. *Research Journal of Applied Biotechnology*, 4(1), 87–104. <https://doi.org/10.21608/RJAB.2018.57527>

Ichikawa, N., Ng, L. S., Makino, S., Goh, L. L., Lim, Y. J., Ferdinandus, Sasaki, H., Shibata, S., & Lee, C. L. K. (2022). Solid-State Fermented Okara with *Aspergillus* spp. Improves Lipid Metabolism and High-Fat Diet Induced Obesity. *Metabolites* 2022, Vol. 12, Page 198, 12(3), 198.
<https://doi.org/10.3390/METABO12030198>

Isanga, J., & Zhang, G. N. (2008). Soybean bioactive components and their implications to health - A review. *Food Reviews International*, 24(2), 252–276. <https://doi.org/10.1080/87559120801926351>

Jankowiak, L., Trifunovic, O., Boom, R. M., & Van Der Goot, A. J. (2014). The potential of crude okara for isoflavone production. *Journal of Food Engineering*, 124, 166–172. <https://doi.org/10.1016/j.jfoodeng.2013.10.011>

Jenkins, D. J. A., Marchie, A., Augustin, L. S. A., Ros, E., & Kendall, C. W. C. (2004). Viscous dietary fibre and metabolic effects. *Clinical Nutrition Supplements*, 1(2), 39–49. <https://doi.org/10.1016/J.CLNU.2004.09.007>

Kamble, D. B., & Rani, S. (2020a). Bioactive components, in vitro digestibility, microstructure and application of soybean residue (okara): a review. *Legume Science*, 2(1), e32. <https://doi.org/10.1002/LEG3.32>

Kamble, D. B., & Rani, S. (2020b). Bioactive components, in vitro digestibility, microstructure and application of soybean residue (okara): a review. *Legume Science*, 2(1), e32. <https://doi.org/10.1002/LEG3.32>

Kamble, D. B., Singh, R., Rani, S., & Pratap, D. (2019). Physicochemical

properties, in vitro digestibility and structural attributes of okara-enriched functional pasta. *Journal of Food Processing and Preservation*, 43(12), 1–9. <https://doi.org/10.1111/jfpp.14232>

Kesehatan, F., & Zulkarnain, M. (2016). *Correlation Between Hypoxia Inducible Factor-1 α and Vesicular Endothelial Growth Factor in Male Wistar Rat Brain Tissue After Anaerobic Exercise Article Komposisi Asam Lemak Minyak Kelapa Murni (Virgin Coconut View project human Adipose Tissue-derived Mesenchymal Stem Cells (CM-hATMSCs) View project Rostika Flora Wahyu Widowati*. <https://doi.org/10.3923/tmr.2016.35.41>

Khodabandehloo, H., Gorgani-Firuzjaee, S., Panahi, G., & Meshkani, R. (2016). Molecular and cellular mechanisms linking inflammation to insulin resistance and β -cell dysfunction. *Translational Research*, 167(1), 228–256. <https://doi.org/10.1016/J.TRSL.2015.08.011>

Kim, H. S., Yu, O. K., Byun, M. S., & Cha, Y. S. (2016). Okara, a soybean by-product, prevents high fat diet-induced obesity and improves serum lipid profiles in C57BL/6J mice. *Food Science and Biotechnology* 2016 25:2, 25(2), 607–613. <https://doi.org/10.1007/S10068-016-0085-8>

Kohajdová, Z., Karovičová, J., Magala, M., & Kuchtová, V. (2014). Effect of apple pomace powder addition on farinographic properties of wheat dough and biscuits quality. *Chemical Papers*, 68(8), 1059–1065. <https://doi.org/10.2478/s11696-014-0567-1>

Koubala, B. B., Kansci, G., Fifen, A. N. P., Ngoufack, A. I., & Dadjeu, Y. C. M. (2014). Effect of the Various Processed Food of the Far North Cameroon on the Glycemic Index. *Food and Nutrition Sciences*, 05(09), 779–786. <https://doi.org/10.4236/fns.2014.59088>

Kuen, N. H., Hamid, M. A., Mamat, H., Akanda, J. H., & Ahmad, F. (2017). *Effect of Chickpea and Okara Composite Flours on the Quality of Instant Noodles*. 179–190. <https://doi.org/10.2991/ICONHOMECS-17.2018.43>

- Kuryłowicz, A. (2020). The Role of Isoflavones in Type 2 Diabetes Prevention and Treatment—A Narrative Review. *International Journal of Molecular Sciences* 2021, Vol. 22, Page 218, 22(1), 218. <https://doi.org/10.3390/IJMS22010218>
- Kusumo, M. P., & Kusumawati, W. (2022). *Barriers to Understanding Health Education in Patients with Diabetes Mellitus (DM) in Yogyakarta : Qualitative Study*. 11(1), 1–9.
- Lebesi, D. M., & Tzia, C. (2011). Effect of the Addition of Different Dietary Fiber and Edible Cereal Bran Sources on the Baking and Sensory Characteristics of Cupcakes. *Food and Bioprocess Technology*, 4(5), 710–722. <https://doi.org/10.1007/s11947-009-0181-3>
- Li, B, Qiao, M., International, F. L.-F. R., & 2012, undefined. (2012). Composition, nutrition, and utilization of okara (soybean residue). *Taylor & Francis*, 28(3), 231–252. <https://doi.org/10.1080/87559129.2011.595023>
- Li, Bo, Qiao, M., & Lu, F. (2012a). Composition, Nutrition, and Utilization of Okara (Soybean Residue). *Food Reviews International*, 28(3), 231–252. <https://doi.org/10.1080/87559129.2011.595023>
- Li, Bo, Qiao, M., & Lu, F. (2012b). Composition, Nutrition, and Utilization of Okara (Soybean Residue). *Food Reviews International*, 28(3), 231–252. <https://doi.org/10.1080/87559129.2011.595023>
- Li, S., Zhu, D., Li, K., Yang, Y., ... Z. L.-I. S., & 2013, undefined. (n.d.). Soybean curd residue: Composition, utilization, and related limiting factors. *Downloads.Hindawi.Com*. Retrieved July 31, 2022, from <https://downloads.hindawi.com/archive/2013/423590.pdf>
- Liu, Y., Yi, S., Ye, T., Leng, Y., Alomgir Hossen, M., Sameen, D. E., Dai, J., Li, S., & Qin, W. (2021). Effects of ultrasonic treatment and homogenization on physicochemical properties of okara dietary fibers for 3D printing cookies. *Ultrasonics Sonochemistry*, 77, 105693. <https://doi.org/10.1016/J.ULTSONCH.2021.105693>

- Lu, F, Cui, Z., Liu, Y., Technology, B. L.-A. J. of F. S. and, & 2013, undefined. (n.d.). The effect of okara on the qualities of noodle and steamed bread. *Citeseer*. Retrieved September 22, 2022, from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1038.382&rep=rep1&type=pdf>
- Lu, Fei, Cui, Z., Liu, Y., & Li, B. (2013). The effect of okara on the qualities of noodle and steamed bread. *Advance Journal of Food Science and Technology*, 5(7), 960–968. <https://doi.org/10.19026/ajfst.5.3191>
- Lu, Fei, Liu, Y., & Li, B. (2013a). Okara dietary fiber and hypoglycemic effect of okara foods. *Bioactive Carbohydrates and Dietary Fibre*, 2(2), 126–132. <https://doi.org/10.1016/j.bcdf.2013.10.002>
- Lu, Fei, Liu, Y., & Li, B. (2013b). Okara dietary fiber and hypoglycemic effect of okara foods. *Bioactive Carbohydrates and Dietary Fibre*, 2(2), 126–132. <https://doi.org/10.1016/J.BCDF.2013.10.002>
- Luo, L., & Liu, M. (2016). Adipose tissue in control of metabolism. *Journal of Endocrinology*, 231(3), R77–R99. <https://doi.org/10.1530/JOE-16-0211>
- Lytrivi, M., Castell, A. L., Poitout, V., & Cnop, M. (2020). Recent Insights Into Mechanisms of β -Cell Lipo- and Glucolipotoxicity in Type 2 Diabetes. *Journal of Molecular Biology*, 432(5), 1514–1534. <https://doi.org/10.1016/J.JMB.2019.09.016>
- M., Z. U., A., H., & Kida, F. (2018). Chemical composition, functional and organoleptic properties of complementary foods formulated from millet, soybean and African locust bean fruit pulp flour blends. *African Journal of Food Science*, 12(6), 126–130. <https://doi.org/10.5897/AJFS2018.1692>
- Maheshwari, G., Sowrirajan, S., & Joseph, B. (2019). β -Glucan, a dietary fiber in effective prevention of lifestyle diseases – An insight. *Bioactive Carbohydrates and Dietary Fibre*, 19, 100187. <https://doi.org/10.1016/J.BCDF.2019.100187>

- Masoodi, F. A., Sharma, B., & Chauhan, G. S. (2002). Use of apple pomace as a source of dietary fiber in cakes. *Plant Foods for Human Nutrition*, 57(2), 121–128. <https://doi.org/10.1023/A:1015264032164>
- Mateos-Aparicio, I., Mateos-Peinado, C., Jiménez-Escrig, A., & Rupérez, P. (2010). Multifunctional antioxidant activity of polysaccharide fractions from the soybean byproduct okara. *Carbohydrate Polymers*, 82(2), 245–250. <https://doi.org/10.1016/j.carbpol.2010.04.020>
- Mateos-Aparicio, Inmaculada, Redondo-Cuenca, A., Villanueva-Suárez, M. J., Zapata-Revilla, M. A., & Tenorio-Sanz, M. D. (2010). Pea pod, broad bean pod and okara, potential sources of functional compounds. *LWT - Food Science and Technology*, 43(9), 1467–1470. <https://doi.org/10.1016/j.lwt.2010.05.008>
- Matsumoto, K., Watanabe, Y., & Yokoyama, S. I. (2007). Okara, soybean residue, prevents obesity in a diet-induced murine obesity model. *Bioscience, Biotechnology and Biochemistry*, 71(3), 720–727. <https://doi.org/10.1271/bbb.60563>
- Mbaeyi-Nwaoha, I. E., & Uchendu, N. O. (2016). Production and evaluation of breakfast cereals from blends of acha and fermented soybean paste (okara). *Journal of Food Science and Technology*, 53(1), 50–70. <https://doi.org/10.1007/S13197-015-2032-8/TABLES/12>
- medicine, T. S.-E. biology and, & 2012, undefined. (2012). Streptozotocin–nicotinamide-induced diabetes in the rat. Characteristics of the experimental model. *Journals.Sagepub.Com*, 237(5), 481–490. <https://doi.org/10.1258/ebm.2012.011372>
- Mohammed, A., Koorbanally, N. A., & Islam, M. S. (2015). Ethyl acetate fraction of Aframomum melegueta fruit ameliorates pancreatic β -cell dysfunction and major diabetes-related parameters in a type 2 diabetes model of rats. *Journal of Ethnopharmacology*, 175, 518–527. <https://doi.org/10.1016/J.JEP.2015.10.011>

- Mok, W. K., Tan, Y. X., Lee, J., Kim, J., & Chen, W. N. (2019). A metabolomic approach to understand the solid-state fermentation of okara using *Bacillus subtilis* WX-17 for enhanced nutritional profile. *AMB Express*, 9(1). <https://doi.org/10.1186/s13568-019-0786-5>
- Momin, M. A., Jubayer, M. F., Begum, A. A., Nupur, A. H., Ranganathan, T. V., & Mazumder, M. A. R. (2020a). Substituting wheat flour with okara flour in biscuit production. *Foods and Raw Materials*, 8(2), 422–428. <https://doi.org/10.21603/2308-4057-2020-2-422-428>
- Momin, M. A., Jubayer, M. F., Begum, A. A., Nupur, A. H., Ranganathan, T. V., & Mazumder, M. A. R. (2020b). Substituting wheat flour with okara flour in biscuit production. *Foods and Raw Materials*, 8(2), 422–428. <https://doi.org/10.21603/2308-4057-2020-2-422-428>
- Muhlshoh, A., Wasita, B., & Patriado Nuhriawangsa, A. M. (2019). Antidiabetic effect of *Centella asiatica* extract (whole plant) in streptozotocin nicotinamide-induced diabetic rats. *Jurnal Gizi Dan Dietetik Indonesia (Indonesian Journal of Nutrition and Dietetics)*, 6(1), 14. [https://doi.org/10.21927/ijnd.2018.6\(1\).14-22](https://doi.org/10.21927/ijnd.2018.6(1).14-22)
- Muliterno, M. M., Rodrigues, D., de Lima, F. S., Ida, E. I., & Kurozawa, L. E. (2017). Conversion/degradation of isoflavones and color alterations during the drying of okara. *LWT - Food Science and Technology*, 75, 512–519. <https://doi.org/10.1016/j.lwt.2016.09.031>
- Na Nakornpanom, N., Hongsprabhas, P., & Hongsprabhas, P. (2010). Effect of soy residue (okara) on in vitro protein digestibility and oil release in high-calorie emulsion stabilized by heated mixed proteins. *Food Research International*, 43(1), 26–32. <https://doi.org/10.1016/j.foodres.2009.08.002>
- Nestel, P., Fujii, A., & Zhang, L. (2007). An isoflavone metabolite reduces arterial stiffness and blood pressure in overweight men and postmenopausal women. *Atherosclerosis*, 192(1), 184–189. <https://doi.org/10.1016/J.ATHEROSCLEROSIS.2006.04.033>

- Nesti, D. R., & Baidlowi, A. (2017). Profil Glukosa Darah, Lipid dan Visualisasi Pulau Langerhans sebagai Imunoreaktor Insulin dan Glukagon pada Pankreas Tikus (*rattus norvegicus*) Obesitas Menggunakan Teknik Immunohistokimia. *Jurnal Nasional Teknologi Terapan (JNTT)*, 1(1), 24. <https://doi.org/10.22146/jntt.34083>
- Nicoletti, M. (2012). Nutraceuticals and botanicals: Overview and perspectives. *International Journal of Food Sciences and Nutrition*, 63(SUPPL. 1), 2–6. <https://doi.org/10.3109/09637486.2011.628012>
- Nogoy, F. M., Jung, Y. J., Kang, K. K., & Cho, Y. G. (2019). Physico-chemical characterization and transcriptome analysis of 5-methyltryptophan resistant lines in rice. *PLoS ONE*, 14(9), 1–20. <https://doi.org/10.1371/journal.pone.0222262>
- Nurus Sakinah, E., Kalimantan No, J., & Tegalboto, K. (2017). The role of Cholecalciferol in the Improvement of Insulin Resistance in Diabetic Mice Model. *Journal of Agromedicine and Medical Sciences*, 3(3), 24–29. <https://doi.org/10.19184/AMS.V3I3.6146>
- O’Keefe, S. J. (2019). The association between dietary fibre deficiency and high-income lifestyle-associated diseases: Burkitt’s hypothesis revisited. *The Lancet Gastroenterology & Hepatology*, 4(12), 984–996. [https://doi.org/10.1016/S2468-1253\(19\)30257-2](https://doi.org/10.1016/S2468-1253(19)30257-2)
- O’Toole, D. K. (1999). Characteristics and use of okara, the soybean residue from soy milk production - A review. *Journal of Agricultural and Food Chemistry*, 47(2), 363–371. <https://doi.org/10.1021/jf980754l>
- Official methods of analysis of AOAC International. (1995). *Official Methods of Analysis of AOAC International*. .
- Okita, K., Iwahashi, H., Kozawa, J., Okauchi, Y., Funahashi, T., Imagawa, A., & Shimomura, I. (2013). Homeostasis model assessment of insulin resistance for evaluating insulin sensitivity in patients with type 2 diabetes on insulin

therapy. *Endocrine Journal*, 60(3), 283–290.
<https://doi.org/10.1507/endocrj.EJ12-0320>

Olatunde, G. O., Henshaw, F. O., Idowu, M. A., & Tomlins, K. (2016). Quality attributes of sweet potato flour as influenced by variety, pretreatment and drying method. *Food Science and Nutrition*, 4(4), 623–635.
<https://doi.org/10.1002/FSN3.325>

Omeire, G. C., Umeji, O. F., & Obasi, N. E. (2014). Acceptability of Noodles Produced from Blends of Wheat, Acha and Soybean Composite Flours. *Nigerian Food Journal*, 32(1), 31–37. [https://doi.org/10.1016/S0189-7241\(15\)30093-X](https://doi.org/10.1016/S0189-7241(15)30093-X)

Ostermann-Porcel, M. V., Quiroga-Panelo, N., Rinaldoni, A. N., & Campderrós, M. E. (2017). Incorporation of okara into gluten-free cookies with high quality and nutritional value. *Journal of Food Quality*, 2017.
<https://doi.org/10.1155/2017/4071585>

Ostermann Porcel, M. V, Campderrós, M. E., & Rinaldoni, A. N. (2030). *MOJ Food Processing & Technology Effect of Okara Flour Addition on the Physical and Sensory Quality of Wheat Bread*.
<https://doi.org/10.15406/mojfpt.2017.04.00111>

Oza, M. J., & Kulkarni, Y. A. (2018). Biochanin A improves insulin sensitivity and controls hyperglycemia in type 2 diabetes. *Biomedicine & Pharmacotherapy*, 107, 1119–1127. <https://doi.org/10.1016/J.BIOPHA.2018.08.073>

Pan, W. C., Liu, Y. M., & Shiau, S. Y. (2018). Effect of okara and vital gluten on physico-chemical properties of noodle. *Czech Journal of Food Sciences*, 36(4), 301–306. <https://doi.org/10.17221/329/2017-CJFS>

Patologi Klinik, M., Boy Kurniawan, L., Nurulita, A., Bahrn, U., Rachmayanti, R., Parwati, I., Rostini, T., & Rachmayati, S. (2015). Adiponektin High Molecular Weight Dan Kekakuan Vaskular Di Penyakit Diabetes Melitus Tipe 2 Terkait Gabungan Glimepiride Metformin Dosis Tetap. ..., 21(2).

<https://indonesianjournalofclinicalpathology.org/index.php/patologi/article/download/1089/810>

Pramitasari, R., Ivana, I., & . Y. (2019). Development of Snack Bar from Black Soybean and Black Rice for Breastfeeding Mothers. *International Journal of Engineering & Technology*, 7(4.14), 288.
<https://doi.org/10.14419/ijet.v7i4.14.27583>

Qaid, M. M., Abdelrahman, M. M., & Qaid Completed Bachelor, M. M. (2016). Role of insulin and other related hormones in energy metabolism—A review. *Cogent Food and Agriculture*, 2(1).
<https://doi.org/10.1080/23311932.2016.1267691>

Quartina Pudjiastuti, A., Mekse Korri Arisena, G., & Keswari Krisnandika, A. A. (2021). Rice Import Development in Indonesia. *SOCA: Jurnal Sosial, Ekonomi Pertanian*, 15(2), 390.
<https://doi.org/10.24843/soca.2021.v15.i02.p14>

Quintana, G., Gerbino, E., & Gómez-Zavaglia, A. (2017). Okara: A nutritionally valuable by-product able to stabilize lactobacillus plantarum during freeze-drying, spray-drying, and storage. *Frontiers in Microbiology*, 8(APR), 1–9.
<https://doi.org/10.3389/fmicb.2017.00641>

Rahman, M. M., Mat, K., Ishigaki, G., & Akashi, R. (2021). A review of okara (soybean curd residue) utilization as animal feed: Nutritive value and animal performance aspects. *Animal Science Journal*, 92(1), e13594.
<https://doi.org/10.1111/ASJ.13594>

Rajput, S. A., Ashraff, S., & Siddiqui, M. (2022). Diet and Management of Type II Diabetes Mellitus in the United Kingdom: A Narrative Review. *Diabetology*, 3(1), 72–78. <https://doi.org/10.3390/diabetology3010006>

Redondo-Cuenca, A., Villanueva-Suárez, M. J., & Mateos-Aparicio, I. (2008). Soybean seeds and its by-product okara as sources of dietary fibre. Measurement by AOAC and Englyst methods. *Food Chemistry*, 108(3), 1099–

1105. <https://doi.org/10.1016/j.foodchem.2007.11.061>

Reeves, P. G., Nielsen, F. H., & Fahey, G. C. (1993). AIN-93 Purified Diets for Laboratory Rodents: Final Report of the American Institute of Nutrition Ad Hoc Writing Committee on the Reformulation of the AIN-76A Rodent Diet. *The Journal of Nutrition*, 123(11), 1939–1951. <https://doi.org/10.1093/JN/123.11.1939>

Rehman, K., Akash, M. S. H., & Alina, Z. (2018). Leptin: A new therapeutic target for treatment of diabetes mellitus. *Journal of Cellular Biochemistry*, 119(7), 5016–5027. <https://doi.org/10.1002/JCB.26580>

Reshmi, S. K., Sudha, M. L., & Shashirekha, M. N. (2020). Noodles fortified with Citrus maxima (pomelo) fruit segments suiting the diabetic population. *Bioactive Carbohydrates and Dietary Fibre*, 22(July 2019), 100213. <https://doi.org/10.1016/j.bcdf.2020.100213>

Rines, A. K., Sharabi, K., Tavares, C. D. J., & Puigserver, P. (2016). Targeting hepatic glucose metabolism in the treatment of type 2 diabetes. *Nature Reviews Drug Discovery* 2016 15:11, 15(11), 786–804. <https://doi.org/10.1038/nrd.2016.151>

Röder, P. V., Wu, B., Liu, Y., & Han, W. (2016). Pancreatic regulation of glucose homeostasis. *Experimental & Molecular Medicine* 2016 48:3, 48(3), e219–e219. <https://doi.org/10.1038/emm.2016.6>

Sadek, K. M., Lebda, M. A., Nasr, S. M., & Shoukry, M. (2017). Spirulina platensis prevents hyperglycemia in rats by modulating gluconeogenesis and apoptosis via modification of oxidative stress and MAPK-pathways. *Biomedicine & Pharmacotherapy*, 92, 1085–1094. <https://doi.org/10.1016/J.BIOPHA.2017.06.023>

Sahyoun, N. R., Anderson, A. L., Tylavsky, F. A., Jung, S. L., Sellmeyer, D. E., & Harris, T. B. (2008). Dietary glycemic index and glycemic load and the risk of type 2 diabetes in older adults. *American Journal of Clinical Nutrition*, 87(1),

126–131. <https://doi.org/10.1093/ajcn/87.1.126>

Salehi, F. (2017). Rheological and physical properties and quality of the new formulation of apple cake with wild sage seed gum (*Salvia macrosiphon*). *Journal of Food Measurement and Characterization*, 11(4), 2006–2012. <https://doi.org/10.1007/s11694-017-9583-5>

Schweizer, T. F. (2003). Dietary fibre analysis. *Proceedings of the Nutrition Society*, 62(1), 3–9. <https://doi.org/10.1079/PNS2002204>

Shen, R. L., Cai, F. L., Dong, J. L., & Hu, X. Z. (2011). Hypoglycemic effects and biochemical mechanisms of oat products on streptozotocin-induced diabetic mice. *Journal of Agricultural and Food Chemistry*, 59(16), 8895–8900. https://doi.org/10.1021/JF200678Q/ASSET/IMAGES/LARGE/JF-2011-00678Q_0002.JPEG

Siahaan, J. M., Ilyas, S., Lindarto, D., & Nainggolan, M. (2020). The Effect of Ethanol and Ethyl Acetate Fraction of Chayote fruit (*Sechium edule* Jacq. Swartz) on the Oxidative Stress and Insulin Resistance of Male White Rat Model Type 2 Diabetes Mellitus. *Open Access Macedonian Journal of Medical Sciences*, 8(A), 962–969. <https://doi.org/10.3889/oamjms.2020.4517>

Sieri, S., Agnoli, C., Pala, V., Grioni, S., Brighenti, F., Pellegrini, N., Masala, G., Palli, D., Mattiello, A., Panico, S., Ricceri, F., Fasanelli, F., Frasca, G., Tumino, R., & Krogh, V. (2017). Dietary glycemic index, glycemic load, and cancer risk: Results from the EPIC-Italy study. *Scientific Reports*, 7(1), 1–8. <https://doi.org/10.1038/s41598-017-09498-2>

Sikander, M., Malik, A., Sikander, M., & Khan, G. (2017). *instant noodles : Are they really good for health ? A review Instant Noodles : Are they Really Good for Health ? A Review . July.*

Singh, P., & Krishnaswamy, K. (2022). Sustainable zero-waste processing system for soybeans and soy by-product valorization. *Trends in Food Science & Technology*, 128, 331–344. <https://doi.org/10.1016/J.TIFS.2022.08.015>

- Subamia, N. P. D. C., Nocianitri, K. A., & Permana, I. D. G. M. (2020). Pemanfaatan Tepung Ampas Tahu Dalam Pembuatan Snack Bar Untuk Penderita Diabetes Mellitus. *Jurnal Media Ilmiah Teknologi Pangan*, 7(1), 27–38.
- Sutjahjo, A. (2018). Adiponektin High Molecular Weight Dan Kekakuan Vaskular Di Penyakit Diabetes Melitus Tipe 2 Terkait Gabungan Glimepiride Metformin Dosis Tetap. *Indonesian Journal of Clinical Pathology and Medical Laboratory*, 21(2), 120. <https://doi.org/10.24293/ijcpml.v21i2.1089>
- Svendsen, B., & Holst, J. J. (2016). Regulation of gut hormone secretion. Studies using isolated perfused intestines. *Peptides*, 77, 47–53. <https://doi.org/10.1016/J.PEPTIDES.2015.08.001>
- Swallah, M. S., Fan, H., Wang, S., Yu, H., & Piao, C. (2021). Prebiotic Impacts of Soybean Residue (Okara) on Eubiosis/Dysbiosis Condition of the Gut and the Possible Effects on Liver and Kidney Functions. *Molecules* 2021, Vol. 26, Page 326, 26(2), 326. <https://doi.org/10.3390/MOLECULES26020326>
- Syamaladevi, R. M., Tang, J., Villa-Rojas, R., Sablani, S., Carter, B., & Campbell, G. (2016). Influence of Water Activity on Thermal Resistance of Microorganisms in Low-Moisture Foods: A Review. *Comprehensive Reviews in Food Science and Food Safety*, 15(2), 353–370. <https://doi.org/10.1111/1541-4337.12190>
- Tabák, A. G., Herder, C., Rathmann, W., Brunner, E. J., & Kivimäki, M. (2012). Prediabetes: A high-risk state for diabetes development. *The Lancet*, 379(9833), 2279–2290. [https://doi.org/10.1016/S0140-6736\(12\)60283-9](https://doi.org/10.1016/S0140-6736(12)60283-9)
- Tapía, M. S., Alzamora, S. M., & Chirife, J. (2020). Effects of Water Activity (a_w) on Microbial Stability as a Hurdle in Food Preservation. *Water Activity in Foods: Fundamentals and Applications*, 323–355. <https://doi.org/10.1002/9781118765982.CH14>
- Télessy, I. G. (2019). *iMedPub Journals New Vistas of Pharmaconutrition Abstract*

The Concise History of Pharmaconutrition. December.
<https://doi.org/10.4172/2472.1921.100072>

Tripathi, B. K., & Srivastava, A. K. (2006). Diabetes mellitus: Complications and therapeutics. *Medical Science Monitor*, 12(7), 130–147.

Tur, J. A., & Bibiloni, M. M. (2015). Functional Foods. In *Encyclopedia of Food and Health* (1st ed., Issue 2). Elsevier Ltd. <https://doi.org/10.1016/B978-0-12-384947-2.00340-8>

Turhan, S., Temiz, H., & Sagir, I. (2007). Utilization of wet okara in low-fat beef patties. *Journal of Muscle Foods*, 18(2), 226–235.
<https://doi.org/10.1111/j.1745-4573.2007.00081.x>

Uusitupa, M., Khan, T. A., Viguieliouk, E., Kahleova, H., Rivellesse, A. A., Hermansen, K., Pfeiffer, A., Thanopoulou, A., Salas-Salvadó, J., Schwab, U., & Sievenpiper, J. L. (2019). Prevention of type 2 diabetes by lifestyle changes: A systematic review and meta-analysis. *Nutrients*, 11(11), 1–22.
<https://doi.org/10.3390/nu11112611>

van der Riet, W. B., Wight, A. W., Cilliers, J. J. L., & Datel, J. M. (1989). Food chemical investigation of tofu and its byproduct okara. *Food Chemistry*, 34(3), 193–202. [https://doi.org/10.1016/0308-8146\(89\)90140-4](https://doi.org/10.1016/0308-8146(89)90140-4)

Vong, W. C., & Liu, S. Q. (2016). Biovalorisation of okara (soybean residue) for food and nutrition. *Trends in Food Science and Technology*, 52, 139–147.
<https://doi.org/10.1016/j.tifs.2016.04.011>

Wahjuningsih, S. B., Haslina, Untari, S., & Wijanarka, A. (2018). Hypoglycemic effect of analog rice made from modified cassava flour (Mocaf), arrowroot flour and kidney bean flour on STZ-NA induced diabetic rats. *Asian Journal of Clinical Nutrition*, 10(1), 8–15. <https://doi.org/10.3923/ajcn.2018.8.15>

Wan Rosli, W. I., Nurhanan, A. R., & Aishah, M. S. (2012). Effect of partial replacement of wheat flour with oyster mushroom {pleurotus sajor-caju} powder on nutritional composition and sensory properties of butter biscuit.

Sains Malaysiana, 41(12), 1565–1570.

- Wang, H., Lu, Y., Yan, Y., Tian, S., Zheng, D., Leng, D., Wang, C., Jiao, J., Wang, Z., & Bai, Y. (2020). Promising Treatment for Type 2 Diabetes: Fecal Microbiota Transplantation Reverses Insulin Resistance and Impaired Islets. *Frontiers in Cellular and Infection Microbiology*, 9, 455. <https://doi.org/10.3389/FCIMB.2019.00455/BIBTEX>
- Wang, L., Wang, L., Zhang, N., Li, M., & Li, Z. (2019). Glucose metabolic effects of oat noodles with different processing in type 2 diabetic mice. *Journal of Cereal Science*, 88(January), 125–131. <https://doi.org/10.1016/j.jcs.2019.05.020>
- Wen, S., Liu, C., Li, Y., Pan, J., Nguyen, T., & Zhou, L. (2021). Psoriasis exacerbates the state of insulin resistance in patients with type 2 diabetes. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 14, 2389–2397. <https://doi.org/10.2147/DMSO.S312420>
- Whelton, S. P., Hyre, A. D., Pedersen, B., Yi, Y., Whelton, P. K., & He, J. (2005). Effect of dietary fiber intake on blood pressure: A meta-analysis of randomized, controlled clinical trials. *Journal of Hypertension*, 23(3), 475–481. <https://doi.org/10.1097/01.hjh.0000160199.51158.cf>
- Wichchukit, S., & O'Mahony, M. (2022). The 9-point hedonic and unstructured line hedonic scales: An alternative analysis with more relevant effect sizes for preference. *Food Quality and Preference*, 99, 104575. <https://doi.org/10.1016/J.FOODQUAL.2022.104575>
- Wickramarathna, G. L., & Arampath, P. C. (2003). Utilization of Okara in Bread Making. *J. Sci. (Bio.Sci.)*, 31, 29–33.
- Wójtowicz, A., & Mościcki, L. (2014). Influence of legume type and addition level on quality characteristics, texture and microstructure of enriched precooked pasta. *LWT - Food Science and Technology*, 59(2), 1175–1185. <https://doi.org/10.1016/J.LWT.2014.06.010>

- Wolosowicz, M., Lukaszuk, B., & Chabowski, A. (2020). The causes of insulin resistance in type 1 diabetes mellitus: Is there a place for quaternary prevention? *International Journal of Environmental Research and Public Health*, 17(22), 1–13. <https://doi.org/10.3390/ijerph17228651>
- Xia, Y., Song, J., Zhong, F., Halim, J., & O'Mahony, M. (2020). The 9-point hedonic scale: Using R-Index Preference Measurement to compute effect size and eliminate artifactual ties. *Food Research International*, 133, 109140. <https://doi.org/10.1016/J.FOODRES.2020.109140>
- Yao, C., Hao, R., Pan, S., & Wang, Y. (2012). Functional Foods Based on Traditional Chinese Medicine. *Nutrition, Well-Being and Health*, August. <https://doi.org/10.5772/27643>
- Zaccardi, F., Webb, D. R., Yates, T., & Davies, M. J. (2016). Pathophysiology of type 1 and type 2 diabetes mellitus: a 90-year perspective. *Postgraduate Medical Journal*, 92(1084), 63–69. <https://doi.org/10.1136/POSTGRADMEDJ-2015-133281>
- Zhang, H., Sun, S., & Ai, L. (2022). Physical barrier effects of dietary fibers on lowering starch digestibility. *Current Opinion in Food Science*, 48, 100940. <https://doi.org/10.1016/J.COFS.2022.100940>



UNIVERSITAS
GADJAH MADA

Okara Based Noodles as a Potential Functional Food for Diabetes Mellitus

Kaisun Nesa Lesa, Yunika Mayangsari, S.Si., M.Biotech., Ph.D.; Dr. Dwi Larasatie Nur Fibri, STP., M.Sc

Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>