

DAFTAR PUSTAKA

- Acevedo, B. A., Avanza, M. V., Cháves, M. G. dan Ronda, F. (2013). Gelation, thermal and pasting properties of pigeon pea (*Cajanus cajan* L.), dolichos bean (*Dolichos lablab* L.) and jack bean (*Canavalia ensiformis*) flours. *Journal of Food Engineering* 119(1): 65-71. <https://doi.org/10.1016/j.jfoodeng.2013.05.014>.
- Acevedo, B. A., Villanueva, M., Chaves, M. G., Avanza, M. V. dan Ronda, F. (2019). Starch enzymatic hydrolysis, structural, thermal and rheological properties of pigeon pea (*Cajanus cajan*) and dolichos bean (*Dolichos lab-lab*) legume starches. *International Journal of Food Science and Technology* 55(2): 712-719. <https://doi.org/10.1111/ijfs.14334>.
- Ačkar, D., Babić, J., Jozinović, A., Miličević, B., Jokić, S., Miličević, R., Rajič, M. dan Šubarić, D. (2015). Starch modification by organic acids and their derivatives: A review. *Molecules* 20(10):19554-19570. <https://doi.org/10.3390/molecules201019554>.
- Adejoh, I., Barnabas, A. dan Sarah, E. (2015). Co-administration of ethanol extract of moringa oleifera leaves and metformin reverses polydipsia, polyphagia and stabilizes body weight in alloxan-induced diabetic rats. *Global Journal of Research on Medical Plants and Indigenous Medicine* 4(9):193-202.
- Afzalpour, M. E., Yousefi, M. R., Eivari, S. H. A. dan Ilbeigi, S. (2016). Changes in blood insulin resistance, GLUT4 & AMPK after continuous and interval aerobic training in normal and diabetic rats. *Journal of Applied Pharmaceutical Science* 6(9): 076-081. <https://doi.org/10.7324/JAPS.2016.60911>.
- Aggarwal, D., Sabikhi, L., Lamba, H., Chaudhary, N. dan Kapila, R. (2017). Whole grains and resistant starch rich, reduced-calorie biscuit diet as a hypoglycaemic, hypolipidaemic and insulin stimulator in streptozotocin-induced diabetic rats. *International Journal of Food Science and Technology* 52(1): 118-126. <https://doi.org/10.1111/ijfs.13269>.
- Ai, Y. (2013). Structures, properties, and digestibility of resistant starch [Iowa State University]. In *Graduate Theses and Dissertations*. <http://lib.dr.iastate.edu/etd/13558>.
- Akubor, P. I. (2013). Effect of ascorbic acid and citric acid treatments on the functional and sensory properties of yam flour. *International Journal of Agricultural Policy and Research* 1(4):103-108.
- Alcázar-Alay, S. C. dan Meireles, M. A. A. (2015). Physicochemical properties, modifications and applications of starches from different botanical sources. *Food Science and Technology* 35(2):215-236. <https://doi.org/10.1590/1678-457X.6749>.

- Alimi, B. A. dan Workneh, T. S. (2018). Structural and physicochemical properties of heat moisture treated and citric acid modified acha and iburu starches. *Food Hydrocolloids* 81:449-455. <https://doi.org/10.1016/j.foodhyd.2018.03.027>.
- Al-Jameel, S.S. (2021). Association of diabetes and microbiota: An update. *Saudi Journal of Biological Sciences* 28(8): 4446-4454. <https://doi.org/10.1016/j.sjbs.2021.04.041>.
- Allain, C. C., Poon, L. S., Chan, C. S. G., Richmond, W. dan Fu, P. C. (1974). Enzymatic determination of total serum cholesterol. *Clinical Chemistry* 20(4): 470-475.
- Aman, A.M., Soewondo P., Soelistijo, S.A., Arsana, P.M., Wismandari, Zufry, H., Rosandi, R., Walewangko, O.C. dan Epriliawati, M. (2021). Panduan pengelolaan dislipidemia di Indonesia 2021. *Perkumpulan Endokrinologi Indonesia*.
- American Diabetes Association. (2017). Classification and diagnosis of diabetes. *Diabetes Care* 40(Suppl.1):11-24. <https://doi.org/10.2337/dc17-S005>.
- AOAC. (1995). *Official Methods of Analysis of AOAC International*. (16th ed.). AOAC International.
- Ariviani, S., Affandi, D. R., Listyaningsih, E., dan Handajani, S. (2018). The potential of pigeon pea (*Cajanus cajan*) beverage as an anti-diabetic functional drink. *IOP Conference Series: Earth and Environmental Science* 102(1):1-9. <https://doi.org/10.1088/1755-1315/102/1/012054>.
- Arora, B., Tandon, R., Attri, P. dan Bhatia, R. (2017). Chemical crosslinking:role in protein and peptide science. *Current Protein and Peptide Science* 18(9):946-955. DOI: 10.2174/1389203717666160724202806.
- Ashogbon, A.O., Akintayo, E.T., Abraham, O.O., Oluwafemi, A.D., Akinsola, A.F. dan Imanah, O.E. (2021). Developments in the isolation, composition, and physicochemical properties of legume starches, *Critical Reviews in Food Science and Nutrition* 61(17):1-22. DOI:10.1080/10408398.2020.1791048.
- Ashwar, B. A., Gani, A., Shah, A., Wani, I. A. dan Masoodi, F. A. (2016). Preparation, health benefits and applications of resistant starch - A review. *Starch /Stärke* 68:287-301. <https://doi.org/10.1002/star.201500064>.
- Babu, A. S., Parimalavalli, R., Jagannadham, K. dan Rao, J. S. (2015). Chemical and structural properties of sweet potato starch treated with organic and inorganic acid. *Journal of Food Science and Technology* 52(9): 5745-5753. <https://doi.org/10.1007/s13197-014-1650-x>.

- Barham, D. dan 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>.
- Bashir, K. dan Aggarwal, M. (2017). Physicochemical, thermal and functional properties of gamma irradiated chickpea starch. *International Journal of Biological Macromolecules* 97: 426-433. <https://doi.org/10.1016/j.ijbiomac.2017.01.025>.
- Bashir, K. dan Aggarwal, M. (2019). Physicochemical, structural and function properties of native and irradiated starch: a review. *Journal of Food Science and Technology* 56(2):513-523. <https://doi.org/10.1007/s13197-018-3530-2>.
- Baynest, H. W. (2015). Classification, pathophysiology, diagnosis and management of diabetes. *Journal of Diabetes and Metabolism* 6(5): 1-9. <https://doi.org/10.4172/2155-6156.1000541>.
- Beckles, D. M. dan Thitisaksakul, M. (2014). How environmental stress affects starch composition and functionality in cereal endosperm. *Starch /Stärke* 66(1-2): 58-71. <https://doi.org/10.1002/star.201300212>.
- Bhat, F. M. dan Riar, C. S. (2016). Effect of amylose, particle size & morphology on the functionality of starches of traditional rice cultivars. *International Journal of Biological Macromolecules* 92: 637-644. <https://doi.org/10.1016/j.ijbiomac.2016.07.078>.
- Birt, D. F., Boylston, T., Hendrich, S., Jane, J., Hollis, J., Li, L., McClelland, J., Moore, S., Phillips, G. J., Rowling, M., Schalinske, K., Scott, M. P. dan Whitley, E. M. (2013). Resistant Starch : promise for improving human health. *Advances in Nutrition* 4: 587-601. <https://doi.org/10.3945/an.113.004325>.
- Bischoff H. (1994). Pharmacology of a-glucosidase inhibition. *European Journal of Clinical Investigation* 24:3-10.
- Brown, M., Dainty, S., Strudwick, N., Mihai, A.D., Watson, J.N., Dendooven, R., Paton, A.W., Paton, J.C., Schröder, M. 2020. Endoplasmic reticulum stress causes insulin resistance by inhibiting delivery of newly synthesized insulin receptors to the cell surface. *Molecular Biology of the Cell* 31(23): 2495-2629. <https://doi.org/10.1091/mbc.E18-01-0013>.
- Byrne, C. S., Chambers, E. S., Morrison, D. J. dan Frost, G. (2015). The role of short chain fatty acids in appetite regulation and energy homeostasis. *International Journal of Obesity* 39(9): 1331-1338. <https://doi.org/10.1038/ijo.2015.84>.
- Cai, C. dan Wei, C. (2013). In situ observation of crystallinity disruption patterns during starch gelatinization. *Carbohydrate Polymers* 92(1): 469-478. <https://doi.org/10.1016/j.carbpol.2012.09.073>.

- Cai, J., Cai, C., Man, J., Zhou, W. dan Wei, C. (2014). Structural and functional properties of C-type starches. *Carbohydrate Polymers* 101(1): 289-300. <https://doi.org/10.1016/j.carbpol.2013.09.058>.
- Canfora, E. E., Jocken, J. W. dan Blaak, E. E. (2015). Short-chain fatty acids in control of body weight and insulin sensitivity. *Nature Reviews Endocrinology* 11(10): 577-591. <https://doi.org/10.1038/nrendo.2015.128>.
- Capuano, E. (2017). The behavior of dietary fiber in the gastrointestinal tract determines its physiological effect. *Critical Reviews in Food Science and Nutrition* 57 (16): 3543–3564. <https://doi.org/10.1080/10408398.2016.1180501>.
- Chen, B., Dang, L., Zhang, X., Fang, W., Hou, M., Liu, T. dan Wang, Z. (2017). Physicochemical properties and micro-structural characteristics in starch from kudzu root as affected by cross-linking. *Food Chemistry* 219: 93-101. <https://doi.org/10.1016/j.foodchem.2016.09.128>.
- Chen, Q., Yu, H., Wang, L., Ul Abidin, Z., Chen, Y., Wang, J., Zhou, W., Yang, X., Khan, R. U., Zhang, H. dan Chen, X. (2015). Recent progress in chemical modification of starch and its applications. *RSC Advances* 5(83): 67459-67474. <https://doi.org/10.1039/c5ra10849g>.
- Choi, W. H., Um, M. Y., Ahn, J., Jung, C. H. dan Ha, T. Y. (2014). Long-term intake of rice improves insulin sensitivity in mice fed a high-fat diet. *Nutrition* 30(7-8): 920-927. <https://doi.org/10.1016/j.nut.2013.12.021>.
- Cole, T. G., Klotzsh, S. G. dan McNamara, J. (1997). Measurement of triglycerida concentration. *Handbook of Lipoprotein Testing* (N. Rifai, G. R. Warnick, and M. H. Dominiczak (eds.)). AACC Press.
- Damat. (2013). Effect of butyrylated arrowroot starch to the digesta profile and molar ratio SCFA. *Journal of Food Research* 2(2): 144-149.
- Deetae, P., Shobsngob, S., Varayanond, W., Chinachoti, P., Naivikul, O. dan Varavinit, S. (2008). Preparation, pasting properties and freeze-thaw stability of dual modified crosslink-phosphorylated rice starch. *Carbohydrate Polymers* 73(2): 351-358. <https://doi.org/10.1016/j.carbpol.2007.12.004>.
- Dewi, A.M.P., Santoso, U., Pranoto, Y. dan Marseno, D.W. (2023). Optimizing reaction condition of octenyl succinic anhydride on heat-moisture-treated sago starch and its application for biodegradable film. *Food Science and Technology* 43 (e17523): 1-9. DOI: <https://doi.org/10.5327/fst.17523>.
- Diass, W. C. dan Estiasih, T. (2015). Pengaruh senyawa bioaktif umbi-umbian keluarga Dioscoreaceae terhadap kondisi profil lipid darah: Kajian pustaka. *Jurnal Pangan dan Agroindustri* 3(2): 424-430.

- DiNicolantonio, J.J., Bhutani, J. dan O'Keefe, J.H. (2015). Acarbose: safe and effective for lowering postprandial hyperglycaemia and improving cardiovascular outcomes. *Open Heart* 2(e000327): 1-14. doi:10.1136/openhrt-2015-000327
- Du, S. K., Jiang, H., Ai, Y. dan Jane, J. L. (2014). Physicochemical properties and digestibility of common bean (*Phaseolus vulgaris* L.) starches. *Carbohydrate Polymers* 108(1):200-205. <https://doi.org/10.1016/j.carbpol.2014.03.004>.
- Dupuis, J. H., Liu, Q. dan Yada, R. Y. (2014). Methodologies for increasing the resistant starch content of food starches: A Review. *Comprehensive Reviews in Food Science and Food Safety* 13(6): 1219-1234. <https://doi.org/10.1111/1541-4337.12104>.
- Eleazu, C. O., Eleazu, K. C. dan Iroaganachi, M. (2016). In vitro starch digestibility, α -amylase and α -glucosidase inhibitory capacities of raw and processed forms of three varieties of Livingstone potato (*Plectranthus esculentus*). *Innovative Food Science and Emerging Technologies* 37: 37-43. <https://doi.org/10.1016/j.ifset.2016.08.007>.
- El Halal, S. N. M., Colussi, R., Pinto, V. Z., Bartz, J., Radunz, M., Carreño, N. L. V., Dias, A. R. G. dan Zavareze, E. D. R. (2015). Structure , morphology and functionality of acetylated and oxidised barley starches. *Food Chemistry* 168:247-256. <https://doi.org/10.1016/j.foodchem.2014.07.046>.
- Englyst, H. N., Kingman, S. M. dan Cummings, J. H. (1992). Classification and measurement of nutritionally important starch fractions. *European Journal of Clinical Nutrition* 46(SUPPL. 2): S33-S50. <https://doi.org/10.1080/10942910903061828>.
- Erizon dan Karani, Y. (2020). HDL dan Aterosklerosis. *Jurnal Human care* 5(4): 1123-1131.
- Estrada-León, R. J., Moo-Huchin, V. M., Ríos-Soberanis, C. R., Betancur-Ancona, D., May-Hernández, L. H., Carrillo-Sánchez, F. A., Cervantes-Uc, J. M. dan Pérez-Pacheco, E. (2016). The effect of isolation method on properties of parota (*Enterolobium cyclocarpum*) starch. *Food Hydrocolloids* 57:1-9. <https://doi.org/10.1016/j.foodhyd.2016.01.008>.
- Fan, X., Zhang, S., Lin, L., Zhao, L., Liu, A. dan Wei, C. (2016). Properties of new starches from tubers of *Arisaema elephas*, *yunnanense* and *erubescens*. *Food Hydrocolloids* 61: 183-190. <https://doi.org/10.1016/j.foodhyd.2016.05.015>.
- Farradina, E.E.N., Isbandiyah dan Sargowo, D. (2012). Pengaruh pemberian ekstrak manggis (*Garcinia mangostana* Linn) sebagai penurun lipid pada tikus model dislipidemia. *Jurnal Kardiologi Indonesia* 33(3):160-165.
- Fauziyah, Y., Sunarti, S., Hanoum, I. F. dan Wahyuningsih, M. S. H. (2018). Ethanol extract of *Tithonia diversifolia* (Hemsley) a gray standardized

- ameliorates hyperglycemia, polyphagia, and weight loss in diabetic rats. *Molekul* 13(1):72-79. <https://doi.org/10.20884/1.jm.2018.13.1.417>.
- Freeman, A.M., Acevedo, L.A. dan Pennings, N. (2023). Insulin resistance. <https://www.ncbi.nlm.nih.gov/books/NBK507839/>. [24 Oktober 2023].
- Gani, A., Jan, A., Shah, A., Masoodi, F. A., Ahmad, M., Ashwar, B. A., Akhter, R. dan Wani, I. A. (2016). Physico-chemical, functional and structural properties of RS3/RS4 from kidney bean (*Phaseolus vulgaris*) cultivars. *International Journal of Biological Macromolecules* 87: 514-521. <https://doi.org/10.1016/j.ijbiomac.2016.03.017>.
- Gao, W., Liu, P., Wang, B., Kang, X., Zhu, J., Cui, B. dan El-Aty, A.M.A. (2021). Synthesis, physicochemical and emulsifying properties of C-3 octenyl succinic anhydride-modified corn starch. *Food Hydrocolloids* 120(10696): 1-7. <https://doi.org/10.1016/j.foodhyd.2021.106961>.
- García-Rosas, M., Bello-Pérez, A., Yee-Madeira, H., Ramos, G., Flores-Morales, A. dan Mora-Escobedo, R. (2009). Resistant starch content and structural changes in Maize (*Zea Mays*) tortillas during storage. *Starch/Staerke* 61(7): 414-421. <https://doi.org/10.1002/star.200800147>.
- Ghasemi, A., Khalifi, S. dan Jedi, S. (2014). Streptozotocin-nicotinamide-induced rat model of type 2 diabetes (review). *Acta Physiologica Hungarica* 101(4):408-420. <https://doi.org/10.1556/APhysiol.101.2014.4.2>.
- Goñi, I., Garcia-Alonso, A. dan Saura-Calixto, F. (1997). A starch hydrolysis procedure to estimate glycemic index. *Nutrition Research* 17(3):427-437.
- Goñi, I., García-Diz, L., Mañas, E. dan Saura-Calixto, F. (1996). Analysis of resistant starch: a method for foods and food products. *Food Chemistry* 56(4):445-449.
- Grace, N. C. F. dan Henry, C. J. (2020). The physicochemical characterization of unconventional starches and flours used in Asia. *Foods* 9(2): 1-12. <https://doi.org/10.3390/foods9020182>.
- Grant, R. W. dan Dixit, V. D. (2013). Mechanisms of disease: Inflammasome activation and the development of type 2 diabetes. *Frontiers in Immunology* 4: 1-10. <https://doi.org/10.3389/fimmu.2013.00050>.
- Gromova, L. V., Fetissov, S. O. dan Gruzdkov, A. A. (2021). Mechanisms of glucose absorption in the small intestine in health and metabolic diseases and their role in appetite regulation. *Nutrients* 13(7): 2-18. <https://doi.org/10.3390/nu13072474>.

- Guleria, P. dan Yadav, P.S. 2022. Effect of chemical treatments on the functional, morphological and rheological properties of starch isolated from pigeon pea (*Cajanus cajan*). *Current Research in Food Science* 5:1750–1759. <https://doi.org/10.1016/j.crfs.2022.10.001>.
- Gunaratne, A., Bentota, A., Cai, Y. Z., Collado, L. dan Corke, H. (2011). Functional, digestibility, and antioxidant properties of brown and polished rice flour from traditional and new-improved varieties grown in Sri Lanka. *Starch/Staerke* 63(8): 485-492. <https://doi.org/10.1002/star.201000105>.
- Gutierrez, R.M.P. dan Baez, E.G. (2014). Evaluation of antidiabetic, antioxidant and antiglycating activities of the *Eysenhardtia polystachya*. *Pharmacognosy Magazine* 10(38); S404-S418. DOI: 10.4103/0973-1296.133295.
- Gyawali, R. dan Ibrahim, S. A. (2016). Effects of hydrocolloids and processing conditions on acid whey production with reference to Greek yogurt. *Trends in Food Science and Technology* 56: 61-76. <https://doi.org/10.1016/j.tifs.2016.07.013>.
- Han, S., Zhang, R., Gao H., Yang, J., Zhang, W. dan Qin, L. (2019). Oat fiber inhibits atherosclerotic progression through improving lipid metabolism in ApoE^{-/-} mice. *Journal of Functional Foods* 56:14-20. <https://doi.org/10.1016/j.jff.2019.02.046>.
- Han, X. Z., Campanella, O. H., Mix, N. C. dan Hamaker, B. R. (2002). Consequence of starch damage on rheological properties of maize starch pastes. *Cereal Chemistry* 79(6): 897-901. <https://doi.org/10.1094/CCHEM.2002.79.6.897>.
- Harlianti, Wahyuni, S. dan Karimuna, L. (2019). Penilaian organoleptik dan karakteristik gelatinisasi tepung ubi kayu modifikasi hasil proses perendaman berbagai konsentrasi garam dan lama fermentasi. *Jurnal Sains dan Teknologi Pangan* 4(2):2041-2050.
- Hebeish, A., El-Rafie, M. H., EL-Sheikh, M. A. dan El-Naggar, M. E. (2014). Ultra-fine characteristics of starch nanoparticles prepared using native starch with and without surfactant. *Journal of Inorganic and Organometallic Polymers and Materials* 24(3):515-524. <https://doi.org/10.1007/s10904-013-0004-x>.
- Hirata, A., Maeda, N., Hiuge, A., Hibuse, T., Fujita, K., Okada, T., Kihara, S., Funahashi, T. dan Shimomura, I. (2009). Blockade of mineralocorticoid receptor reverses adipocyte dysfunction and insulin resistance in obese mice. *Cardiovascular Research* 84(1): 164-172. <https://doi.org/10.1093/cvr/cvp191>.
- Hlila, M. B., Mosbah, H., Majouli, K., Mssada, K., Jannet, H. Ben, Aouni, M. dan Selmi, B. (2015). α -Glucosidase inhibition by Tunisian *Scabiosa arenaria* Forssk. extracts. *International Journal of Biological Macromolecules* 77: 383-389. <https://doi.org/10.1016/j.ijbiomac.2015.03.035>.

- Hoja, J., Maurer, R. J. dan Sax, A. F. (2014). Adsorption of glucose, cellobiose, and cellotetraose onto cellulose model surfaces. *Journal of Physical Chemistry* 118(30): 9017-9027. <https://doi.org/10.1021/jp5025685>.
- Hoover, R., Hughes, T., Chung, H. J. dan Liu, Q. (2010). Composition, molecular structure, properties, and modification of pulse starches: A review. *Food Research International* 43(2): 399-413. <https://doi.org/10.1016/j.foodres.2009.09.001>.
- Hoover, R., Swamidas, G. dan Vasanthan, T. (1993). Studies on the physicochemical properties of native, defatted, and heat-moisture treated pigeon pea (*Cajanus cajan* L) starch. *Carbohydrate Research* 246(1): 185-203. [https://doi.org/10.1016/0008-6215\(93\)84032-2](https://doi.org/10.1016/0008-6215(93)84032-2).
- Huang, J., Shang, Z., Man, J., Liu, Q., Zhu, C. dan Wei, C. (2015). Comparison of molecular structures and functional properties of high-amylose starches from rice transgenic line and commercial maize. *Food Hydrocolloids* 46:172-179. <https://doi.org/10.1016/j.foodhyd.2014.12.019>.
- Huber, K. C. dan BeMiller, J. (2010). *Modified Starch: Chemistry and properties. Starches: characterization, properties and applications* (A.Bertolini (ed.)). CRC Press.
- Hurst, N. R., Kendig, D. M., Murthy, K. S. dan Grider, J. R. (2014). The short chain fatty acids, butyrate and propionate, have differential effects on the motility of the guinea pig colon. *Neurogastroenterology and Motility* 26(11): 1586-1596. <https://doi.org/10.1111/nmo.12425>.
- Ihedioha, J. I., Noel-Uneke, O. A. dan Ihedioha, T. E. (2013). Reference values for the serum lipid profile of albino rats (*Rattus norvegicus*) of varied ages and sexes. *Comparative Clinical Pathology* 22(1): 93-99. <https://doi.org/10.1007/s00580-011-1372-7>.
- International Diabetes Federation. (2021). *IDF Diabetes Atlas 10th edition*. <http://diabetesatlas.org/atlas/tenth-edition/>
- Irawan, C. (2018). Pengaruh konsentrasi adsorbat terhadap efektivitas penurunan logam Fe dengan menggunakan fly ash sebagai adsorben. *Seminastika*: 4-6.
- Jan, K. N., Panesar, P. S., Rana, J. C. dan Singh, S. (2017). Structural, thermal and rheological properties of starches isolated from Indian quinoa varieties. *International Journal of Biological Macromolecules* 102: 315-322. <https://doi.org/10.1016/j.ijbiomac.2017.04.027>.
- Joshi, M., Aldred, P., McKnight, S., Panozzo, J. F., Kasapis, S., Adhikari, R. dan Adhikari, B. (2013). Physicochemical and functional characteristics of lentil starch. *Carbohydrate Polymers* 92(2): 1484-1496. <https://doi.org/10.1016/j.carbpol.2012.10.035>.

- Joshi, N., Andhare, P., Marchawala, F., Bhattacharya, I. dan Upadhyay, D. (2021). A study on amylase: Review. *International Journal of Biology, Pharmacy and Allied Sciences* 10(4):333-340. <https://doi.org/10.31032/IJBPAS/2021/10.4.1037>.
- Juliano, B. O. (1971). A Simplified Assay for milled-rice amylose. *Cereal Science Today* 16(11): 334-340.
- Kapelko-Zeberska, M., Buksa, K., Szumny, A., Zieba, T. dan Gryszkin, A. (2016^a). Analysis of molecular structure of starch citrate obtained by a well-established method. *LWT - Food Science and Technology* 69: 334-341. <https://doi.org/10.1016/j.lwt.2016.01.066>.
- Kapelko-Żeberska, M., Zięba, T., Pietrzak, W. dan Gryszkin, A. (2016^b). Effect of citric acid esterification conditions on the properties of the obtained resistant starch. *International Journal of Food Science and Technology* 51(7): 1647-1654. <https://doi.org/10.1111/ijfs.13136>.
- Kaur, M. dan Sandhu, K. S. (2010). In vitro digestibility, structural and functional properties of starch from pigeon pea (*Cajanus cajan*) cultivars grown in India. *Food Research International* 43(1): 263-268. <https://doi.org/10.1016/j.foodres.2009.09.027>.
- Khosravi, M., Hosseini-Fard, S.R. dan Najafi, M. (2018). Circulating low density lipoprotein (LDL). *De Gruyter*:1-12. DOI: 10.1515/hmbci-2018-0024.
- Kim, J. Y., Lee, Y. K. dan Chang, Y. H. (2017). Structure and digestibility properties of resistant rice starch cross-linked with citric acid. *International Journal of Food Properties* 20: 2166-2177. <https://doi.org/10.1080/10942912.2017.1368551>.
- Kim, K. T., Rioux, L. E. dan Turgeon, S. L. (2014). Alpha-amylase and alpha-glucosidase inhibition is differentially modulated by fucoidan obtained from *Fucus vesiculosus* and *Ascophyllum nodosum*. *Phytochemistry* 98: 27-33. <https://doi.org/10.1016/j.phytochem.2013.12.003>.
- Kim, Y.Y., Woo, K. S. dan Chung, H. J. (2018). Starch characteristics of cowpea and mungbean cultivars grown in Korea. *Food Chemistry* 263: 104-111. <https://doi.org/10.1016/j.foodchem.2018.04.114>.
- Krisnawati, A. (2005). Prospek serta pencandraan sifat kualitatif dan kuantitatif kacang gude (*Cajanus cajan* L. Millsp.). *Buletin Palawija* 0(9): 1-10. <https://doi.org/10.21082/bulpalawija.v0n9.2005.p1-10>.
- Kumar, R. dan Khatkar, B. S. (2017). Thermal, pasting and morphological properties of starch granules of wheat (*Triticum aestivum* L.) varieties. *Journal of Food Science and Technology* 54(8): 2403-2410. <https://doi.org/10.1007/s13197-017-2681-x>.

- Kurniati, N., Ramdani, A.A., Efendi, R. dan Rahmawati, D. 2020. Analisis kesesuaian penggunaan lahan terhadap arahan fungsi kawasan. *Geography: Jurnal kajian, penelitian dan pengembangan pendidikan* 8(2):109-120.
- Kusumawardani, H.D., Marsono, Y., Murdiati, A. dan Samsudin, M. (2019). Potensi tepung pisang uter (*Musa acuminata*) sebagai pangan fungsional untuk menurunkan kolesterol. *Buletin Penelitian Kesehatan* 47(4): 275 - 282. <https://doi.org/10.22435/bpk.v47i4.1589>.
- Kusumawati, P., Triwitono, P., Anggrahini, S. dan Pranoto, Y. (2022). Autoclaving and alkaline hydrolysis effects on the particle size and Solubility of grouper (*Epinephelus* sp.) nano-calcium powder in in vitro gastrointestinal tract simulation. *Jurnal Ilmiah Perikanan Dan Kelautan* 14(2):176-202.
- Lahiri, D., Nag, M., Banerjee, R., Mukherjee, D., Garai, S., Sarkar, T., Dey, A., Sheikh, H.I., Pathak, S.K., Adinur, H.A., Pati, S. dan Ray, R.R. (2021). Amylases: Biofilm inducer or biofilm inhibitor? *Frontiers in Cellular and Infection Microbiology* 11: 1-13.
- Lee, S.H., Park, S.Y. dan Choi, C.S. (2022). Insulin resistance: from mechanisms to therapeutic strategies. *Diabetes & Metabolism Journal* 46:15-37. <https://doi.org/10.4093/dmj.2021.0280>.
- Lee, Y. K. dan Chang, Y. H. (2019). Structural and in vitro digestibility properties of esterified maca starch with citric acid and its application as an oil-in-water (O/W) pickering emulsion stabilizer. *International Journal of Biological Macromolecules* 134: 798-806. <https://doi.org/10.1016/j.ijbiomac.2019.05.081>.
- Lefnaoui, S., Moulai-Mostefa, N. (2015). Synthesis and evaluation of the structural and physicochemical properties of carboxymethyl pregelatinized starch as a pharmaceutical excipient. *Saudi Pharmaceutical Journal* 23(6): 698-711. doi: <http://dx.doi.org/10.1016/j.jsps.2015.01.021>
- Leroux-stewart, J., Rabasa-Lhoret, R. dan Chiasson, J. (2015). Alpha-Glucosidase inhibitors. In R. A. DeFronzo, E. Ferrannini, P. Zimmet, & K. G. M. M. Alberti (Eds.), *International Textbook of Diabetes Mellitus* (fourth, pp. 673-685). Jhon Wiley & Sons, Ltd.
- Lima, K. O., Biduski, B., da Silva, W. M. F., Ferreira, S. M., Montenegro, L. M. P., Dias, A. R. G. dan Bianchini, D. (2017). Incorporation of tetraethylorthosilicate (TEOS) in biodegradable films based on bean starch (*Phaseolus vulgaris*). *European Polymer Journal* 89: 162-173. <https://doi.org/10.1016/j.eurpolymj.2017.02.008>.

- Liu, C., Wang, S., Copeland, L. dan Wang, S. (2015). Physicochemical properties and in vitro digestibility of starches from field peas grown in China. *LWT - Food Science and Technology* 64(2): 829-836. <https://doi.org/10.1016/j.lwt.2015.06.060>.
- Lopes-Virella, M. F., Stone, P., Ellis, S. dan Colwell, J. A. (1977). Cholesterol determination in high-density lipoproteins separated by three different methods. *Clinical Chemistry* 23(5): 882-884.
- Ma, M., Wang, Y., Wang, M., Jane, J.L dan Du, S.K. (2017). Physicochemical properties and in vitro digestibility of legume starches. *Food Hydrocolloids* 63: 249-255. <https://doi.org/10.1016/j.foodhyd.2016.09.004>.
- Maaran, S., Hoover, R., Donner, E. dan Liu, Q. (2014). Composition, structure, morphology and physicochemical properties of lablab bean, navy bean, rice bean, tepary bean and velvet bean starches. *Food Chemistry* 152: 491-499. <https://doi.org/10.1016/j.foodchem.2013.12.014>.
- Maintang., Hanifa, A. P., dan Agustin, R. (2014). Potensi kacang gude sebagai komponen diversifikasi pangan. *Prosiding Seminar Hasil Penelitian Tanaman Aneka Kacang Dan Umbi* 917-924. http://balitkabi.litbang.pertanian.go.id/wp-content/uploads/2015/05/917-924_Maintang-1.pdf.
- Marsono, Y. (1998). Resistant starch: Pembentukan, metabolisme dan aspek gizinya. *Agritech* 18 (4):29-35.
- Marsono, Y. (2002). Efek hipoglisemik dan hipolipidemik kacang kapri (*Pisum sativum* LINN) dan kedelai (*Glycine max* MERR) pada tikus Sprague Dawley diabetik induksi alloksan hipoglikemik.pdf. *Agritech* 22(4): 137-143.
- Marsono, Y. (2016). The role and mechanism of resistant starch (RS) in reducing plasma glucose concentration. *Prosiding International Food Conference*. Universitas Katolik Widya Mandala Surabaya. 23-28.
- Marsono, Y., Wiyono, P. dan Noor, Z. (2002). Indeks glisemik kacang-kacangan. *Teknologi dan Industri Pangan* XIII(3):211-216.
- Matsumoto, K., Yasuyoshi, E., Nishi, K., Honda, Y., Nakaya, M. dan Kitamura, S. (2016). Resistant starch-rich wx/ae brown rice prevents insulin resistance and hypertriglyceridaemia in type 2 diabetic NSY mice. *Journal of Functional Foods* 23: 556-564. <https://doi.org/10.1016/j.jff.2016.01.046>.
- McNabney, S. M. dan Henagan, T. M. (2017). Short chain fatty acids in the colon and peripheral tissues: A focus on butyrate, colon cancer, obesity and insulin resistance. *Nutrients* 9(12): 1-28. <https://doi.org/10.3390/nu9121348>.

- Meenu, M. dan Xu, B. (2018). A critical review on anti-diabetic and anti-obesity effects of dietary resistant starch. *Critical Reviews in Food Science and Nutrition* 59(18): 3019-3031. <https://doi.org/10.1080/10408398.2018.1481360>.
- Mei, J. Q., Zhou, D. N., Jin, Z. Y., Xu, X. M. dan Chen, H. Q. (2015). Effects of citric acid esterification on digestibility, structural and physicochemical properties of cassava starch. *Food Chemistry* 187: 378-384. <https://doi.org/10.1016/j.foodchem.2015.04.076>.
- Meisyahputri, B. dan Ardiaria, M. (2017). Pengaruh pemberian kombinasi minyak rami dengan minyak wijen terhadap kadar kolesterol *High Density lipoprotein* (HDL) tikus *Sprague Dawley* dislipidemia. *Journal of Nutrition College* 6(1):35-42. <http://ejournal-s1.undip.ac.id/index.php/jnc>.
- Menzel, C., Olsson, E., Plivelic, T. S., Andersson, R., Johansson, C., Kuktaite, R., Järnström, L. dan Koch, K. (2013). Molecular structure of citric acid cross-linked starch films. *Carbohydrate Polymers* 96(1): 270-276. <https://doi.org/10.1016/j.carbpol.2013.03.044>.
- Mir, S. A., Bosco, S. J. D., Bashir, M., Shah, M. A. dan Mir, M. M. (2017). Physicochemical and structural properties of starches isolated from corn cultivars grown in Indian temperate climate. *International Journal of Food Properties* 20(4): 821-832. <https://doi.org/10.1080/10942912.2016.1184274>.
- Monteiro, S., Martins, J., Magalhães, F. D. dan Carvalho, L. (2016). Low density wood-based particleboards bonded with foamable sour cassava starch: Preliminary studies. *Polymers* 8(354): 2-11. <https://doi.org/10.3390/polym8100354>.
- Mooradian, A. D. (2009). Dyslipidemia in type 2 diabetes mellitus. *Nature Clinical Practice Endocrinology and Metabolism* 5(3): 150-159. <https://doi.org/10.1038/ncpendmet1066>.
- Moussou, N., Ouazib, M., Wanasundara, J., Zaidi, F. dan Rubio, L. A. (2019). Nutrients and non-nutrients composition and in vitro starch digestibility of five Algerian legume seed flours. *International Food Research Journal* 26(4): 1339-1349.
- Narina, S. S., Bhardwaj, H. L., Hamama, A. A., Burke, J. J., Pathak, S. C. dan Xu, Y. (2014). Seed protein and starch qualities of drought tolerant pigeon pea and native tepary beans. *Journal of Agricultural Science* 6(11):247-259. <https://doi.org/10.5539/jas.v6n11p247>.
- Nhan, M.T. dan Copeland, L. (2014). Effects of growing environment on properties of starch from five Australian wheat varieties. *Cereal Chemistry* 91(6):587-594. <https://doi.org/10.1094/CCHEM-01-14-0013-R>.

- Olsson, E., Menzel, C., Johansson, C., Andersson, R., Koch, K. dan Järnström, L. (2013). The effect of pH on hydrolysis, cross-linking and barrier properties of starch barriers containing citric acid. *Carbohydrate Polymers* 98(2): 1505-1513. <https://doi.org/10.1016/j.carbpol.2013.07.040>.
- Omojola, M. O., Orishadipe, A. T., Afolayan, M. O. dan Adebisi, A. B. (2012). Preparation and physicochemical characterization of icacina starch citrate – a potential pharmaceutical / industrial starch. *Agriculture and Biology Journal of North America* 3(1): 11-16. <https://doi.org/10.5251/abjna.2012.3.1.11.16>.
- Oyedemi, S. O., Oyedemi, B. O., Ijeh, I. I., Ohanyerem, P. E., Coopoosamy, R. M. dan Aiyegoro, O. A. (2017). Alpha-amylase inhibition and antioxidative capacity of some antidiabetic plants used by the traditional healers in Southeastern Nigeria. *Scientific World Journal* 1-11. <https://doi.org/10.1155/2017/3592491>.
- Oyeyinka, S. A., Singh, S. dan Amonsou, E. O. (2016). Physicochemical properties of starches extracted from bambara groundnut landraces. *Starch/Staerke* 69(3-4): 1-8. <https://doi.org/10.1002/star.201600089>.
- Parwata, I.M.O. dan Mariani, I.G.A.P. (2022). Kacang gude (*Cajanus cajan* L. Huth) sumber pangan potensial di lahan kering. <https://distanpangan.baliprov.go.id/kacang-gude-cajanus-cajan-l-huth-sumber-pangan-potensial-di-lahan-kering/>. [26 Oktober 2023].
- Patel, H., Royall, P. G., Gaisford, S., Williams, G. R., Edwards, C. H., Warren, F. J., Flanagan, B. M., Ellis, P. R. dan Butterworth, P. J. (2017). Structural and enzyme kinetic studies of retrograded starch: Inhibition of α -amylase and consequences for intestinal digestion of starch. *Carbohydrate Polymers* 164: 154-161. <https://doi.org/10.1016/j.carbpol.2017.01.040>.
- Patindol, J.A., Siebenmorgen, T.J., Wang, Y.J. (2015). Impact of enviromental factors on rice starch structure: A review. *Starch/Stärke* 67:42-54. DOI 10.1002/star.201400174.
- Pemkab Gunungkidul. (2023). Peta jenis tanah Kabupaten Gunungkidul. https://tataruang.gunungkidulkab.go.id/downlot.php?file=4206_Peta_Jenis_Tanah_001.pdf. [30 November 2023].
- Pérez, S. dan Bertoft, E. (2010). The molecular structures of starch components and their contribution to the architecture of starch granules: A comprehensive review. *Starch/Staerke* 62(8): 389-420. <https://doi.org/10.1002/star.201000013>.

- Polakof, S., Díaz-Rubio, M. E., Dardevet, D., Martin, J. F., Pujos-Guillot, E., Scalbert, A., Sebedio, J. L., Mazur, A. dan Comte, B. (2013). Resistant starch intake partly restores metabolic and inflammatory alterations in the liver of high-fat-diet-fed rats. *Journal of Nutritional Biochemistry* 24(11): 1920-1930. <https://doi.org/10.1016/j.jnutbio.2013.05.008>.
- Polnaya, F. J., Haryadi, Marseno, D. W. dan Cahyanto, M. N. (2013). Effects of phosphorylation and cross-linking on the pasting properties and molecular structure of sago starch. *International Food Research Journal* 20(4): 1609-1615.
- Popeijus, H. E., Zwaan, W., Tayyeb, J. Z. dan Plat, J. (2021). Potential contribution of short chain fatty acids to hepatic apolipoprotein A-I production. *International Journal of Molecular Sciences*. 22(11). <https://doi.org/10.3390/ijms22115986>.
- Primiani, C. N. dan Pujiati. (2016). Leguminoceae kacang gude (*Cajanus cajan*) dan manfaatnya untuk kesehatan. *Prosiding Seminar Nasional Hasil Penelitian*. 31-35.
- Pulgarín, O., Larrea-Wachtendorff, D., Ferrari, G. (2023). Effects of the Amylose/amylopectin content and storage conditions on corn starch hydrogels produced by high-pressure processing (HPP). *Gels* 9 (87):1-15.<https://doi.org/10.3390/gels9020087>.
- Puspawati, G. A. K. D., Marsono, Y., Armunanto, R. dan Supriyadi. (2018). Inhibitory potency of indonesian tamarillo (*Solanum betaceum* Cav) crude extract against α -glucosidase enzyme activity. *Current Research in Nutrition and Food Science* 6(2): 392-403. <https://doi.org/10.12944/CRNFSJ.6.2.14>.
- Putri, N.N.S. dan Wibawa, I.K.A. (2023). Kajian daya dukung permukiman Kabupaten Buleleng Provinsi Bali. *Region: Jurnal Pembangunan Wilayah dan Perencanaan Partisipatif* 18(2): 396-412. DOI: 10.20961/region.v18i2.60552.
- Qin, Y., Zhang, H., Dai, Y., Hou, H. dan Dong, H. (2019). Effect of silane treatment on mechanical properties. *Materials* 12(1705): 1-13.
- Rahim, A., Kadir, S., dan Jusman. (2021). The influence degree of substitution on the physicochemical properties of acetylated arenga starches. *International Food Research Journal* 24(1): 102-107.
- Ramos, S., Moulay, L., Granado-Serrano, A. B., Vilanova, O., Muguerza, B., Goya, L. dan Bravo, L. (2008). Hypolipidemic effect in cholesterol-fed rats of a soluble fiber-rich product obtained from cocoa husks. *Journal of Agricultural and Food Chemistry* 56(16): 6985-6993. <https://doi.org/10.1021/jf8009816>.
- Rani, S., Poswal, G., Yadav, R. dan Deen, M. K. (2014). Screening of pigeonpea (*Cajanus cajan* L.) seeds for study of their flavonoids, total phenolic content and antioxidant properties. *International Journal of Pharmaceutical Sciences*

Review and Research 28(2): 90-94.

- Ratnaningsih, N., Suparmo, Harmayani, E. dan Marsono, Y. (2016). Composition, microstructure, and physicochemical properties of starches from Indonesian cowpea (*Vigna unguiculata*) varieties. *International Food Research Journal* 23(5): 2041-2049.
- Ratnaningsih, N., Suparmo, Harmayani, E. dan Marsono, Y. (2020). Physicochemical properties, in vitro starch digestibility, and estimated glycemic index of resistant starch from cowpea (*Vigna unguiculata*) starch by autoclaving-cooling cycles. *International Journal of Biological Macromolecules* 142:191-200. <https://doi.org/10.1016/j.jaci.2020.08.037>.
- Reeves, P. G., Nielsen, F. H. dan 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>.
- Remya, R., Jyothi, A. N. dan Sreekumar, J. (2018). Effect of chemical modification with citric acid on the physicochemical properties and resistant starch formation in different starches. *Carbohydrate Polymers* 202: 29-38. <https://doi.org/https://doi.org/10.1016/j.carbpol.2018.08.128>.
- Ren, F., Ji, N. dan Zhu, Y. (2023). Research progress of α -glucosidase inhibitors produced by microorganisms and their applications. *Foods* 12 (3344): 1-23. <https://doi.org/10.3390/foods12183344>.
- Ridwan, E. (2013). Etika pemanfaatan hewan percobaan dalam penelitian kesehatan. *Journal Indonesian Medical Assosiation* 63(3): 112-116.
- Rodriguez-Garcia, M. E., Hernandez-Landaverde, M. A., Delgado, J. M., Ramirez-Gutierrez, C. F., Ramirez-Cardona, M., Millan-Malo, B. M. dan Londoño-Restrepo, S. M. (2021). Crystalline structures of the main components of starch. *Current Opinion in Food Science* 37: 107-111. <https://doi.org/10.1016/j.cofs.2020.10.002>.
- Rozali, Z.F., Purwani, E.Y., Iskandriati, D., Palupi, N.S., Suhartono, M.T. 2018. Potensi pati resisten beras sebagai bahan pangan fungsional. *Jurnal Pangan* 27(3): 215-224.
- Saini, V. (2010). Molecular mechanisms of insulin resistance in type 2 diabetes mellitus. *World Journal of Diabetes* 1(3): 68-75. <https://doi.org/10.4239/wjd.v1.i3.68>.
- Sandhu, K. S., Siroha, A. K., Punia, S., Sangwan, L., Nehra, M. dan Purewal, S. S. (2021). Effect of degree of cross linking on physicochemical, rheological and morphological properties of Sorghum starch. *Carbohydrate Polymer Technologies and Applications* 2:1-8. <https://doi.org/10.1016/j.carpta.2021.100073>.

- Sarungallo, Z. L., Santoso, B. dan Puspita, A. M. (2021). Physicochemical and functional properties of spineless, short-spines, and long-spines sago starch. *Biodiversitas* 22(1): 137-143. <https://doi.org/10.13057/biodiv/d220119>.
- Shao, Y., Mao, L., Guan, W., Wei, X., Yang, Y., Xu, F., Li, Y. dan Jiang, Q. (2020). Physicochemical and structural properties of low-amylose Chinese yam (*Dioscorea opposita* Thunb.) starches. *International Journal of Biological Macromolecules* 164: 427-433. <https://doi.org/10.1016/j.ijbiomac.2020.07.054>.
- Syafitri, D., Berawi, K.N. dan Ichsa, A.A. (2019). Aktivitas fisik rutin sebagai modulator sensitivitas insulin pada obesitas. *Jumantik* 5(1): 9-22.
- Siddiqui, A. A., Siddiqui, S. A., Ahmad, S., Siddiqui, S., Ahsan, I. dan Sahu, K. (2013). Diabetes : Mechanism , Pathophysiology and Management-A Review. *International Journal of Drug Development & Research* 5(2): 1-23.
- Soethama, K. P. R., Herawati, S. dan Subawa, N. (2020). Hubungan antara kadar gula darah puasa dengan kadar trigliserida pada penderita diabetes melitus tipe 2 di Rumah Sakit Umum Pusat Sanglah Bali. *Jurnal Medika Udayana* 9(5): 53-57. <https://ojs.unud.ac.id/index.php/eum53>.
- Subroto, E., Cahyana, Y., Indiarso, S. dan Rahmah, T.A. (2023). Modification of starches and flours by acetylation and its dual modifications: A review of impact on physicochemical properties and their applications. *Polymers* 15(2990):1-34. <https://doi.org/10.3390/polym15142990>.
- Sukhija, S., Singh, S. dan Riar, C.S. (2016). Effect of oxidation, cross-linking and dual modification on physicochemical, crystallinity, morphological, pasting and thermal characteristics of elephant foot yam (*Amorphophallus paeoniifolius*) starch. *Food Hydrocolloids* 55: 56-64. <http://dx.doi.org/10.1016/j.foodhyd.2015.11.003>.
- Sun, H., Ma, X., Zhang, S., Zhao, D. dan Liu, X. (2018). Resistant starch produces antidiabetic effects by enhancing glucose metabolism and ameliorating pancreatic dysfunction in type 2 diabetic rats. *International Journal of Biological Macromolecules* 110: 276-284. <https://doi.org/10.1016/j.ijbiomac.2017.11.162>.
- Sun, M., Wu, W., Liu, Z. dan Cong, Y. (2017). Microbiota metabolite short chain fatty acids, GPCR, and inflammatory bowel diseases. *Journal of Gastroenterology* 52(1): 1-8. <https://doi.org/10.1007/s00535-016-1242-9>.
- Suryani, N., Pramono, dan Septiana, H. (2016). Diet dan olahraga sebagai upaya pengendalian kadar gula darah pada pasien diabetes melitus tipe 2 di poliklinik penyakit dalam RSUD Ulin Banjarmasin Tahun 2015. *Jurkessia* 6(8): 1-10.

- Sweis, I.E. dan Cressey, B.C. (2018). Potential role of the common food additive manufactured citric acid in eliciting significant inflammatory reactions contributing to serious disease states: A series of four case reports. *Toxicology Reports* 5: 808-812. <https://doi.org/10.1016/j.toxrep.2018.08.002>.
- Taguchi, T., Onishi, M., Katsuno, N., Miwa, N., Oomoto, C., Sato, M., Sekita, M., Yamaguchi, H., Imaizumi, T. dan Nishizu, T. (2023). Evaluation of starch retrogradation by X-ray diffraction using a water-addition method. *LWT* 173(114341):1-6. <https://doi.org/10.1016/j.lwt.2022.114341>.
- Tan, C., Wei, H., Zhao, X., Xu, C. dan Peng, J. (2017). Effects of dietary fibers with high water-binding capacity and swelling capacity on gastrointestinal functions, food intake and body weight in male rats. *Food & Nutrition Research* 61(1): 1-8. DOI: 10.1080/16546628.2017.1308118
- Tayade, R., Kulkarni, K. P., Jo, H., Song, J. T. dan Lee, J. D. (2019). Insight into the prospects for the improvement of seed starch in legume-A review. *Frontiers in Plant Science* 10:1-17. <https://doi.org/10.3389/fpls.2019.01213/>
- Titgemeyer, E. C., Bourquin, L. D., Fahey, G. C. dan Garleb, K. A. (1991). Fermentability of various fiber sources by human fecal bacteria in vitro. *American Journal of Clinical Nutrition* 53(6): 1418-1424. <https://doi.org/10.1093/ajcn/53.6.1418>.
- Triwitono, P., Marsono, Y., Murdiati, A. dan Marseno, D. W. (2017a). Isolasi dan karakterisasi sifat pati kacang hijau (*Vigna radiata* L.) beberapa varietas lokal indonesia. *Agritech* 37(2):192-198. <https://doi.org/10.22146/agritech.10659>.
- Triwitono, P., Marsono, Y., Murdiati, A. dan Marseno, D. W. (2017b). Pengaruh metode kombinasi autoklaf 2 siklus dan hidrolisis asam sitrat terhadap sifat kimia dan fisika RS-3 pati kacang hijau (*Vigna radiata* L.). *Agritech* 37(3): 312-318. <http://doi.org/10.22146/agritech.11620>.
- Upadhyaya, B., McCormack, L., Fardin-Kia, A. R., Juenemann, R., Nichenametla, S., Clapper, J., Specker, B. dan Dey, M. (2016). Impact of dietary resistant starch type 4 on human gut microbiota and immunometabolic functions. *Scientific Reports* 6: 1-12. <https://doi.org/10.1038/srep28797>.
- Vaz Patto, M. C., Amarowicz, R., Aryee, A. N. A., Boye, J. I., Chung, H. J., Martín-Cabrejas, M. A. dan Domoney, C. (2015). Achievements and challenges in improving the nutritional quality of food legumes. *Critical Reviews in Plant Sciences* 34: 105-143. <https://doi.org/10.1080/07352689.2014.897907>.
- Velásquez-Barreto, F. F., Bello-Pérez, L. A., Nuñez-Santiago, C., Yee-Madeira, H. dan Velezmoro Sánchez, C. E. (2021). Relationships among molecular, physicochemical and digestibility characteristics of Andean tuber starches. *International Journal of Biological Macromolecules* 182: 472-481.

<https://doi.org/10.1016/j.ijbiomac.2021.04.039>.

- Wahjuningsih, S. B., Haslina, H. dan Marsono, M. (2018). Hypolipidaemic effects of high resistant starch sago and red bean flour- based analog rice on diabetic rats. *Materia Socio Medica* 30(4): 232-239. <https://doi.org/10.5455/msm.2018.30.232-239>.
- Wan, J., Wu, Y., Pham, Q., Yu, L., Chen, M. H., Boue, S. M., Yokoyama, W., Li, B. dan Wang, T. T. Y. (2019). Effects of rice with different amounts of resistant starch on mice fed a high-fat diet: attenuation of adipose weight gain. *Journal of Agricultural and Food Chemistry* 68(46): 13046-13055. <https://doi.org/10.1021/acs.jafc.9b05505>.
- Wang, Q., Zhenga Y., Zhuanga, W., Lua, X., Luo, X. dan Zheng, B. (2018). Genome-wide transcriptional changes in type 2 diabetic mice supplemented with lotus seed resistant starch. *Food Chemistry* 264: 427-434. <https://doi.org/10.1016/j.foodchem.2018.05.056>
- Wang, S., Li, C., Copeland, L., Niu, Q. dan Wang, S. (2015). Starch retrogradation: a comprehensive review. *Comprehensive Reviews in Food Science and Food Safety* 14:568-585. doi: 10.1111/1541-4337.12143.
- Wang, S., Liu, C. dan Wang, S. (2016). Drying methods used in starch isolation change properties of C-type chestnut (*Castanea mollissima*) starches. *LWT-Food Science and Technology* 73: 663-669. <https://doi.org/10.1016/j.lwt.2016.07.012>.
- Wani, A. A., Singh, P., Shah, M. A., Schweiggert-Weisz, U., Gul, K. dan Wani, I. A. (2012). Rice starch diversity: Effects on structural, morphological, thermal, and physicochemical properties-A review. *Comprehensive Reviews in Food Science and Food Safety* 11(5): 417-436. <https://doi.org/10.1111/j.1541-4337.2012.00193.x>.
- Wani, I. A., Sogi, D. S., Hamdani, A. M., Gani, A., Bhat, N. A. dan Shah, A. (2016). Isolation, composition, and physicochemical properties of starch from legumes: A review. *Starch/Staerke* 68(9-10): 834-845. <https://doi.org/10.1002/star.201600007>.
- Warraich, H. J. dan Rana, J. S. (2017). Dyslipidemia in diabetes mellitus and cardiovascular disease. *Cardiovascular Endocrinology* 6(1): 27-32. <https://doi.org/10.1097/XCE.0000000000000120>.
- Wieland, H. dan Seidel, D. (1983). A Simple specific method for precipitation of low density lipoproteins. *Journal of Lipid Research* 24 (904-909). [https://doi.org/10.1016/S0022-2275\(20\)37936-0](https://doi.org/10.1016/S0022-2275(20)37936-0)
- Wijanarka, A., Tifauzah, N. dan Wijaningsih, W. (2020). Antidiabetic potential of modified gayam (*Inocarpus Fagifer* Forst.) starch in diabetic rats STZ-NA induced. *Pakistan Journal of Medical and Health Sciences* 14(2): 1474-1478.

- Wisse, B. dan Zieve, D. (2020). *Insulin C-peptide test*. <https://Medlineplus.Gov/Ency/Article/003701.Htm>. [4 Oktober 2022].
- Wong, T. H. T. dan Louie, J. C. Y. (2016). The relationship between resistant starch and glycemic control : A review on current evidence and possible mechanisms. *Starch /Stärke* 68: 1-9. <https://doi.org/10.1002/star.201600205>.
- Wongsagonsup, R., Pujchakarn, T., Jitrakbumrung, S., Chaiwat, W., Fuongfuchat, A., Varavit, S., Dangtip, S. dan Suphantharika, M. (2014). Effect of cross-linking on physicochemical properties of tapioca starch and its application in soup product. *Carbohydrate Polymers* 101(1): 656-665. <https://doi.org/10.1016/j.carbpol.2013.09.100>.
- Wulan, S. N., Widyaningsih, T. D. dan Kasari, D. (2007). Modifikasi pati alami dan pati hasil pemutusan rantai cabang dengan perlakuan fisik / kimia untuk meningkatkan kadar pati resisten pada pati beras. *Jurnal Teknologi Pertanian* 8(2): 80-87.
- Xia, H., Li, Y. dan Gao, Q. (2016). Preparation and properties of RS4 citrate sweet potato starch by heat-moisture treatment. *Food Hydrocolloids* 55: 172-178. <https://doi.org/10.1016/j.foodhyd.2015.11.008>.
- Xie, X. dan Liu, Q. (2004). Development and physicochemical characterization of new resistant citrate starch from different corn starches. *Starch/Staerke*. 56(8): 364–370. <https://doi.org/10.1002/star.200300261>.
- Xie, X., Liu, Q. dan Cui, S. W. (2006). Studies on the granular structure of resistant starches (type 4) from normal, high amylose and waxy corn starch citrates. *Food Research International* 39(3): 332-341. <https://doi.org/10.1016/j.foodres.2005.08.004>.
- Xu, J., Ma, Z., Li, X., Liu, L. dan Hu, X. (2020). A more pronounced effect of type III resistant starch: Vs. type II resistant starch on ameliorating hyperlipidemia in high fat diet-fed mice is associated with its supramolecular structural characteristics. In *Food and Function* 11(3): 1-39. <https://doi.org/10.1039/c9fo02025j>.
- Yan, L.J.(2022). Nicotinamide/streptozotocin rodent model of type 2 diabetes: renal pathophysiology and redox imbalance features. *Biomolecules* 13:1-16. <https://doi.org/10.3390/biom12091225>.
- Yan, W., Yin, L., Zhang, M., Zhang, M., Jia, X. (2021). Gelatinization, retrogradation and gel properties of wheat starch–wheat bran arabinoxylan complexes. *Gels* 7 (200): 1-12. <https://doi.org/10.3390/gels7040200>.
- Yang, J., Webb, A. R. dan Ameer, G. A. (2004). Novel citric acid-based biodegradable elastomers for tissue engineering. *Advanced Materials* 16(6): 511-516. <https://doi.org/10.1002/adma.200306264>.

- Yousif, E. I., Gadallah, M. G. E. dan Sorour, A. M. (2012). Physico-chemical and rheological properties of modified corn starches and its effect on noodle quality. *Annals of Agricultural Sciences* 57(1): 19-27. <https://doi.org/10.1016/j.aos.2012.03.008>.
- Yussof, N. S., Utra, U. dan Alias, A. K. (2013). Hydrolysis of native and cross-linked corn, tapioca, and sweet potato starches at sub-gelatinization temperature using a mixture of amylolytic enzymes. *Starch/Staerke* 65(3-4): 285–295. <https://doi.org/10.1002/star.201200002>.
- Zehra, N., Mohsin Ali, T. dan Hasnain, A. (2020). Comparative study on citric acid modified instant starches (alcoholic alkaline treated) isolated from white sorghum and corn grains. *International Journal of Biological Macromolecules* 150: 1331-1341. <https://doi.org/10.1016/j.ijbiomac.2019.10.143>.
- Zeng, Z., Cui, L., Xue, W., Chen, J. dan Che, Y. (2012). Recent developments on the mechanism and kinetics of esterification reaction promoted by various catalysts. *Chemical Kinetics*. Edited by Vivek Patel. <https://doi.org/10.5772/38106>.
- Zhang, Y., Guo, Q., Feng, N., Wang, J., Wang, S., dan He, Z. (2016a). Characterization of A- and B-type starch granules in Chinese wheat cultivars. *Journal of Integrative Agriculture* 15(10): 2203-2214. [https://doi.org/10.1016/S2095-3119\(15\)61305-3](https://doi.org/10.1016/S2095-3119(15)61305-3).
- Zhang, Y., Zhu, K., He, S., Tan, L. dan Kong, X. (2016b). Characterizations of high purity starches isolated from five different jackfruit cultivars. *Food Hydrocolloids* 52: 785-794. <https://doi.org/10.1016/j.foodhyd.2015.07.037>.
- Zhang, Z., Kong, F., Ni, H., Mo, Z., Wan, J. B., Hua, D. dan Yan, C. (2016c). Structural characterization, α -glucosidase inhibitory and DPPH scavenging activities of polysaccharides from guava. *Carbohydrate Polymers* 144: 106-114. <https://doi.org/10.1016/j.carbpol.2016.02.030>.
- Zhang, Z., Tian, X., Wang, P., Jiang, H., Li, W. (2019). Compositional, morphological, and physicochemical properties of starches from red adzuki bean, chickpea, faba bean, and baiyue bean grown in China. *Food Science Nutrition* 7:2485–2494. DOI: 10.1002/fsn3.865.
- Zhao, J., Bai, Y., Tao, S., Zhang, G., Wang, J., Liu, L. dan Zhang, S. (2019). Fiber-rich foods affected gut bacterial community and short-chain fatty acids production in pig model. *Journal of Functional Foods* 57: 266-274. <https://doi.org/10.1016/j.jff.2019.04.009>.
- Zhao, Y., Liu, J., Hao, W., Zhu, H., Liang, N., He, Z., Ma, K. Y. dan Chen, Z. Y. (2017). Structure-specific effects of short-chain fatty acids on plasma cholesterol concentration in male Syrian Hamsters. *Journal of Agricultural and Food Chemistry* 65(50): 10984-10992. <https://doi.org/10.1021/acs.jafc.7b04666>.

- Zheng, Y., Wang, Q., Huang, J., Fang, D., Zhuang, W., Luo, X., Zou, X., Zheng, B. dan Cao, H. (2019). Hypoglycemic effect of dietary fibers from bamboo shoot shell: An in vitro and in vivo study. *Food and Chemical Toxicology* 127: 120-126. <https://doi.org/10.1016/j.fct.2019.03.008>.
- Zhou, Y., Zhao, S., Jiang, Y., Wei, Y. dan Zhou, X. (2019). Regulatory function of buckwheat-resistant starch supplementation on lipid profile and gut microbiota in mice fed with a high-fat diet. *Journal of Food Science* 84(9): 2674-2681. <https://doi.org/10.1111/1750-3841.14747>.
- Zhou, Z. K., Wang, F., Ren, X. C., Wang, Y., dan Blanchard, C. (2015). Resistant starch manipulated hyperglycemia/hyperlipidemia and related genes expression in diabetic rats. *International Journal of Biological Macromolecules* 75: 316-321. <https://doi.org/10.1016/j.ijbiomac.2015.01.052>.
- Zhu, J., Zhang, S., Zhang, B., Qiao, D., Pu, H., Liu, S. dan Li, L. (2017). Structural features and thermal property of propionylated starches with different amylose/amylopectin ratio. *International Journal of Biological Macromolecules* 97: 123-130. <https://doi.org/10.1016/j.ijbiomac.2017.01.033>.
- Zuhra, C.F., Ginting, M., Azzahra, W.F. dan Hardiyanti, R. (2020). Synthesis of bread fruit (*Artocarpus communis*)-based hydroxypropyl starch through etherification using propylene oxide. *Rasayan Journal Chemistry* 13(4): 2445-2454|. <http://dx.doi.org/10.31788/RJC.2020.1345981>.