

DAFTAR PUSTAKA

- Aboonabi, A. (2015). Effect of Pomegranate on Histopathology of Liver and Kidney on Generated Oxidative Stress Diabetic Induced Rats. *Journal of Cytology & Histology*. 6. 10.4172/2157-7099.1000294.
- Adriawan, I. R., Andrie, M., Susilowati, R., Pramono., Nugroho, A, E. (2014). Homa-IR Index Evaluation on Antidiabetes Mellitus Effect of *Andrographis Paniculata (Burm. F.)* Nees Purified Extract and Andrographolide. *Majalah Obat Tradisional*, vol. 19, no. 1, 2014, pp. 19-23
- Adiyati, P.N. (2011). Ragam Jenis Ektoparasit Pada Hewan Coba Tikus Putih (*Rattus norvegicus*) Galur *Sprague Dawley*.
- Adzkiya, M.A.Z. (2011). Kajian Potensi antioksidan beras merah dan pemanfaatannya pada minuman beras kencur. Thesis. Institut Pertanian Bogor. Bogor.
- Aktas, K., & Akin, N. (2020). Influence of rice bran and corn bran addition on the selected properties of tarhana, a fermented cereal based food product. *Lwt-Food Science and Technology*, 129, 109574. <https://doi.org/10.1016/j.lwt.2020.109574>
- Alexander, K., Efendi, Y. P., Decroli, G. P., & Rahmadi, A. (2019). *Diabetes Mellitus Tipe 2* (1st Ed.). Fakultas Kedokteran Universitas Andalas.
- Allen, R.W., Schwartzman, E., Baker, W.L., Coleman, C.I., Phung, O.J. (2013). Cinnamon Use in Type 2 Diabetes: An Updated Systematic Review and Meta-Analysis 452–459. doi:10.1370/afm.1517.
- Almatsier, S. (2004). *Prinsip Dasar Ilmu Gizi*. Gramedia Pustaka Utama. Jakarta.
- Amagliani, L., O'Regan, J., Kelly, A. L., & O'Mahony, J. A. (2017). The composition, extraction, functionality and applications of rice proteins: A review. *Trends in Food Science & Technology*, 64, 1–12. <https://doi.org/10.1016/j.tifs.2017.01.008>
- American Diabetes Association (ADA). (2014). *Diagnosis and classification of diabetes mellitus*. The Journal of Clinical and Applied Research and Education, 37 (S.1): 81-90.
- American Diabetes Association. Standard of Medical Care in Diabetes 2017. *Diabetes Care* 2018; 41(Suppl. 1):S13-S27
- American Diabetes Association (ADA). (2021)^a. *Prediabetes and Type 2 Diabetes*. https://diabetesjournals.org/care/article/44/Supplement_1/S15/30859/2-Classification-and-Diagnosis-of-Diabetes
- American Diabetes Association (ADA). (2021)^b. *Diabetes Clinical Practice Guideline*. *Capital Health Plan*. <https://capitalhealth.com/sites/default/files/uploaded-documents/2021%20Diabetes%20Clinical%20Practice%20Guideline.pdf>

- Ananda PK, Kumarappan CT, Christudas S, Kalaichelvan VK. (2012). *Effect of Biophytum sensitivum on streptozotocin and nicotinamide-induced diabetic rats*. Asian Pac. J. Trop. Biomed. 2, 31–35.
- Anderson, J.W., Gustafson, N.J., Bryant, C.A., and Tietyn-Clark, J. (1987). Dietary fiber and diabetes: A comprehensive review and practical 126 / MARCH 2001, VOL. 46, NO. 3 applications. Journal of the American Dietetic Association 87(9):1189- 1197.
- Anwer, T. (2014). *Melatonin ameliorates hyperinsulinemia, glucose intolerance and insulin resistance in STZ-nicotinamide induced type 2 diabetic rats*. International Journal of Pharmacy and Pharmaceutical Sciences, 6(2), pp. 133–136.
- AOAC. (1970). Official Methods of Analysis of the Association Analytical Chemistry. Inc. Washington DC.
- AOAC. (1995). Official Methods of Analysis of Association of Official Analytical Chemist. AOAC International. Virginia USA.
- AOAC. (1996). Official Methods of Analysis of the AOAC International. 18th ed. AOAC International Suite 500. 481 North Frederick Avenue. Gaithersburg. Maryland. USA
- Aparecida, S., Faria, C., & Bassinello, P. Z. (2012). Nutritional composition of rice bran submitted to different stabilization procedures. Brazilian Journal of Pharmaceutical Sciences, 48(4), 652–657.
- Aprilia, I., Pratiwi, E., Larasati, D. (2022). Pengaruh Konsentrasi Tepung Bekatul Beras Putih (*Oryza Sativa* L.) Dalam Pembuatan *Cookies*. Repository Universitas Semarang
- Apriyati, E. (2020). Sifat Fisik dan Kimia Flakes Pati Garut dengan Penambahan Ekstrak Daun Kelor serta Potensinya dalam Penurunan Gula Darah Tikus Wistar Diabetes Mellitus Dengan Induksi STZ-NA. Tesis. Yogyakarta: Universitas Gadjah Mada
- Astawan, M., Febrinda, A. E. (2010). Potensi Dedak dan Bekatul Beras Sebagai Ingredient Pangan dan Produk Pangan Fungsional. Vol. 19 No. 1 (2010): Pangan. <https://doi.org/10.33964/jp.v19i1.104>
- Astawan M. (2011). Pangan Fungsional untuk Kesehatan yang Optimal. Fakultas Teknologi Pertanian IPB, Bogor.
- Astawan, M., Wresdiyati, T., Widowati, S., Saputra, I. (2013). Aplikasi Tepung Bekatul Fungsional Pada Pembuatan Cookies dan Donat Yang Bernilai Indeks Glikemik Rendah. Jurnal Pangan Vol. 22 No. 4 Desember 2013 : 385-394.
- Badan Pusat Statistik (BPS). (2021). No. 77/10/Th. XXIV. 15 Oktober 2021. <https://www.bps.go.id/pressrelease/2021/10/15/1850/produksi-padi-tahun-2021-naik-1-14-persen--angka-sementara-.html> dan <https://www.bps.go.id/website/images/Produksi-Padi-Asem-2021-ind.jpg>
- Badan Standardisasi Nasional (BSN). (2011). SNI 2973:2011. Biskuit. Jakarta.
- Badole SL, Mahamuni SP, Bagul PP, Khose RD, Joshi AC, Ghule AE, Bodhankar SL, Raut CG, Khedkar VM, Coutinho EC, Wagh NK. (2013). *Cycloart-23-ene-3 β , 25-diol stimulates GLP-1 (7-36) amide secretion in*

- streptozotocin-nicotinamide induced diabetic Sprague Dawley rats: a mechanistic approach*. Eur. J. Pharmacol. 698, 470–479.
- Bambang, U. (2015). Chromium and Zinc Level of Patients with Type 2 Diabetes and Non-Diabetes. *Biochemistry & Physiology: Open Access*. s5. 10.4172/2168-9652.S5-010.
- Barnett S, Anthony. (2002). *The Story of Rats: Their Impact on Us and Our Impact on Them*. Crows Nest NSW: Allen & Unwin.
- Baxter, N. T., Schmidt, A. W., Venkataraman, A., Kim, K. S., Waldron, C., & Schmidt, T. M. (2019). Dynamics of human gut microbiota and short-chain fatty acids in response to dietary interventions with three fermentable fibers. *MBio*, 10(1), e02566–e2618. <https://doi.org/10.1128/MBIO.02566-18>.
- Behall KM, Scholfield DJ, Hallfrisch JG, Liljeberg-Elmstahl HG. (2006). Consumption of both resistant starch and beta-glucan improves postprandial plasma glucose and insulin in women. *Diabetes Care*. 29:976-81.
- Bennett RA, Pegg AE. (1981). *Alkylation of DNA in rat tissues following administration of streptozotocin*. *Cancer Res*. 41, 2786–2790
- Bhanger, M. I., Iqbal, S., Anwar, F., Imran, M., Akhtar, M., & Zia-ul-Haq, M. (2008). Antioxidant potential of rice bran extracts and its effects on stabilization of cookies under ambient storage. *International Journal of Food Science & Technology*, 43, 779–786.
- Bintanah, S. dan H. S. Kusuma. (2010). Pengaruh pemberian bekatul dan tepung tempe terhadap profil gula darah pada tikus yang diberi *alloxan*. *Jurnal Pangan dan Gizi Vol 01 No.2*
- Blakeney, A. 1984. Rice grain quality. In: *Rice Growing in New South Wales* (A. Currey, ed., 1984), Yanco Australia: Departmen of Agriculture New South Wales and the Rice Research Committee. p.1-5.
- Boucher, J., Kleinridders, A., & Kahn, C. R. (2014). Insulin receptor signaling in normal and insulin-resistant states. *Cold Spring Harbor perspectives in biology*, 6(1), a009191. <https://doi.org/10.1101/cshperspect.a009191>
- BPOM RI (Badan Pengawas Obat Dan Makanan Republik Indonesia). (2011). Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia Nomor HK. 03.123.11.11.09909 tahun 2011 tentang Pengawasan Klaim dalam Label dan Iklan Pangan Olahan. Jakarta: BPOM. Diakses pada 5 Juni 2022.
- BPOM RI (Badan Pengawas Obat Dan Makanan Republik Indonesia) Nomor 13 tahun 2016. Pengawasan Klaim dalam Label dan Iklan Pangan Olahan. Jakarta.
- Broca C, Gross R, Petit P, Sauvaire Y, Manteghetti M, Tournier M, Masiello P, Gomis R, Ribes G. (1999). *4-Hydroxyisoleucine: experimental evidence of its insulinotropic and antidiabetic properties*. *Am. J. Physiol*. 277, E617–E623
- Brody T. 1999. *Nutritional Biochemistry*. San Diego: Academic Press.
- Brown, A. 2000. *Understanding Food : Principles and Preparation*. Wadsworth Inc., Belmont.

- Brussels, & Belgium. (2019.). IDF Diabetes Atlas, 9th edn. Retrieved from <http://www.diabetesatlas.org>.
- BSN (Badan Standardisasi Nasional). 2011. Standar Nasional Indonesia *Cookies* SNI 2973:2011. BSN. Jakarta (ID) : BSN
- Budihartini, N. K. S., Permana, I. D. G. M., Ina, P. T. (2018). Pengaruh Perbandingan Terigu dan Bekatul Beras Merah Terhadap Karakteristik Mie Kering. *Jurnal Ilmu dan Teknologi Pangan*. Vol. 7, No.4, 156-164
- Buraerah, H. (2010) *Analisis Faktor Risiko Diabetes Melitus tipe 2 di Puskesmas Tanrutedong, Sidenreg Rappan.*, Jurnal Ilmiah Nasional.
- Burtis, G., J. Davis and S. Martin. 1988. Applied Nutrition and Diet Therapy. W.B.Saunders Company. Harcourt Brace Jovanovich Inc. Philadelphia.
- 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.
- Cerf, M.E. (2013). β -cell dysfunction and insulin resistance. *Front. Endocrinol. Lausanne*. 4, 37.
- Chandalia M, Garg A, Lutjohann D, von Bergmann K, Grundy SM, Brinkley LJ. (2000). Beneficial effects of high dietary fiber intake in patients with type 2 diabetes mellitus. *N Engl J Med* 2000;342. <https://doi.org/10.1056/NEJM200005113421903>. 1392e8.
- Chang KC, Tseng CD, Chou TF, Cho YL, Chi TC, Su MJ, Tseng YZ. (2006)^a. Arterial stiffening and cardiac hypertrophy in a new rat model of type 2 diabetes. *Eur. J. Clin. Invest.* 36, 1–7
- Chang KC, Tseng CD, Wu MS, Liang JT, Tsai MS, Cho YL, Tseng YZ. (2006)^b. Aminoguanidine prevents arterial stiffening in a new rat model of type 2 diabetes. *Eur. J. Clin. Invest.* 36, 528–535
- Chau, C. F., Chen, C. H., & Lin, C. Y. (2004). Insoluble fiber-rich fractions derived from *Averrhoa carambola*: Hypoglycemic effects determined by in vitro methods. *Lebensmittel-Wissenschaft und -Technologie- Food Science and Technology*, 37(3), 331–335.
- Chen M.H., Choi S.H., Kozukue N., Kim H.J., dan Friedman M. (2012). *Growth-Inhibitory Effects of Pigmented Rice Bran Extracts and Three Red Bran Fractions Against Human Cancer Cells: Relationships with Composition and Antioxidative Activities*. *Journal of Agricultural and Food Chemistry*. Vol. 60 : 9151–9161.
- Chen TC, Benjamin DI, Kuo T, Lee RA, Li ML, Mar DJ, Costello DE, Nomura D K & Wang JC. (2017). The glucocorticoid-Angptl4-ceramide axis induces insulin resistance through PP2A and PKC. *Science Signaling* 10 eaaai7905. <https://doi.org/10.1126/scisignal.aai7905>
- Ciptadi, W. dan Z. Nasution. 1979. Dedak Padi dan Manfaatnya. Departemen Teknologi Hasil Pertanian, Fakultas Teknologi Pertanian. Institut Pertanian Bogor. Bogor.
- Cipto, D., Efendi, R., Rossi, E. (2016). Pemanfaatan tepung Tempe dengan Penambahan Bubuk Kayu Manis dalam Pembuatan Kukis dari Sukun. *Jurnal Online Mahasiswa Fakultas Pertanian Universitas Riau*, vol. 3, no. 2, 24 Oct., pp. 1-12.

- Dainty, S.A. (2015). The Effect of Resistant Starch Bagels on Glycemic response in Adults at Risk for Type 2 Diabetes. Thesis. The University of Guelph.
- Dalal, N., Neeraj, V. B., & Dhakar, U. (2020). Potential of fruit and vegetable waste as a source of pectin. *International Journal of Communication Systems*, 8(1), 3085–3090.
- Damardjati, D. S. 1988. Struktur kandungan gizi beras. Dalam : Ismunadji, M. S. Partohardjono, M.Syam, A. Widjono. Padi-Buku 1. Balai Penelitian dan Pengembangan Pertanian, Pusat Penelitian dan Pengembangan Pertanian, Pusat Penelitian dan Pengembangan Tanaman Pangan, Bogor. Hal : 103- 159
- Damayanthi, E., Sofia I.R., Madanijah, S. (2001). Sifat Fisikokimia dan Daya Terima Tepung Bekatul Padi Awet Sebagai Sumber Serat Makanan. Bogor : IPB. Hal : 245-261.
- Damayanthi E, Listyorini D.I. (2006). Pemanfaatan Bekatul Rendah Lemak pada Pembuatan Keripik Simulasi. *Jurnal Gizi dan Pangan*. 2006; 1 (2) : 34-44.
- Damayanthi E, Tjing LT dan Arbianto L. (2007). *Rice Bran*. Jakarta: Penebar Swadaya.
- Dalimartha, S. 2004. Ramuan Tradisional untuk Pengobatan Diabetes Melitus. Penebar Semangat, Jakarta.
- Dang, T. T., & Thava, V. (2019). Modification of rice bran dietary fiber concentrates using enzyme and extrusion cooking. *Food Hydrocolloids*, 89, 773–782. <https://doi.org/10.1016/j.foodhyd.2018.11.024>.
- Daou, C., & Zhang, H. (2014). Functional and physiological properties of total, soluble, and insoluble dietary fibres derived from defatted rice bran. *Journal of Food Science and Technology*, 51(12), 3878–3885. <https://doi.org/10.1007/s13197-013-0925-y>.
- de Delahaye, E. P., Jimenez, P., & Perez, E. (2005). Effect of enrichment with high content dietary fibre stabilized rice bran flour on chemical and functional properties of storage frozen pizzas. *Journal of Food Engineering*, 68, 1–7.
- Deeds MC, Anderson JM, Armstrong AS, Gastineau DA, Hiddinga HJ, Jahangir A, Eberhardt NL, Kudva YC. (2011). *Single dose streptozotocin-induced diabetes: considerations for study design in islet transplantation models*. *Lab. Anim.* 45, 131–140
- DeFronzo, R. A. (2004). Pathogenesis of type 2 diabetes mellitus. *Med Clin North Am.* 88(4):787–835
- DeFronzo, R.A. (2009). From the triumvirate to the ominous octet: A new paradigm for the treatment of type 2 diabetes mellitus. *Diabetes*, 58, 773–795.
- DeFronzo, R. A., Ferrannini, E., Groop, L., Henry, R. R., Herman, W. H., Holst, J. J., Weiss, R. (2015). Type 2 diabetes mellitus. *Nature Reviews Disease Primers*, 1, 15019. <https://doi.org/10.1038/nrdp.2015.19>.
- Departemen Kesehatan RI. 2010. Rencana Aksi Pembinaan Gizi Masyarakat (RAPGM) Tahun 2010-2014

- <http://www.gizikia.depkes.go.id/archives/658>. Diakses tanggal 20 November 2021
- Departemen Perindustrian. 1992. Standar Mutu Biscuit dan *Cookies* Menurut Standar Nasional Indonesia. Jakarta.
- Direktorat Gizi Masyarakat. 2009. Daftar Komposisi Zat Gizi Pangan Indonesia. Departemen Kesehatan RI. Jakarta
- Eshak ES, Iso H, Date C, Kikuchi S, Watanabe Y, Wada Y. (2010) JACC Study Group. Dietary fiber intake is associated with reduced risk of mortality from cardiovascular disease among Japanese men and women. *J Nutr.* 140:1445-53.
- Esmaeili, M., Rafe, A., Shahidi, S. A., & Ghorbani Hasan-Saraei, A. (2016). Functional properties of rice bran protein isolate at different pH levels. *Cereal Chemistry*, 93, 58–63.
- Esteghamati A, Ashraf H, Khalilzadeh O, Zandieh A. (2010). *Optimal cut-off of homeostasis model assessment of insulin resistance (HOMA-IR) for the diagnosis of metabolic syndrome: third national surveillance of risk factors of non- communicable diseases in Iran (SuRFNCD-2007)*. *Nutrition & Metabolism*, 7:26
- Faccin, G. L., Vieira, L. N., Miotto, L. A., Barreto, P. L. M., & Amante, E. R. (2009). Chemical, sensorial and rheological properties of a new organic rice bran beverage. *Rice Science*, 16, 226–234.
- Fang Li , Xiaojuan Wu , Wei Wu. (2021). Effects of protein oxidation induced by rice bran rancidity on the structure and functionality of rice bran glutelin. *LWT – Food Science and Technology*. 149. 111874
- Faridah, A .(2008). *Patiseri jilid II* . Jakarta : Direktorat Pembinaan Sekolah Menengah Kejuruan.
- FAO. (2021). *World Food and Agriculture - Statistical Yearbook 2021*. Rome. <https://doi.org/10.4060/cb4477en>
- Fatkurahman R., Atmaka W., dan Basito. (2012). Karakteristik Sensorik dan Sifat Fitokimia *Cookies* dengan Substitusi Bekatul Beras Hitam (*Oryza sativa* L.) dan Tepung Jagung (*Zea mays* L.), *Jurnal Teknosains Pangan*, 1(1).
- Feder, D., & Fonseca, F. L. (2017). The mechanism of fiber effects on insulin resistance. In *Dietary Fiber for the Prevention of Cardiovascular Disease* (pp. 23-33). Academic Press. doi: 10.1016/B978-0-12-805130-6.00002-1
- Federer, W. (1963). *Experimental Design Theory and Application*. Oxford: Oxford and Lbh Publish Hincó.
- Fierabracci V, De Tata V, Pocai A, Novelli M, Barbera A, Masiello P. 2002. *Oral tungstate treatment improves only transiently alteration of glucose metabolism in a new rat model of type 2 diabetes*. *Endocrine* 19, 177-184.
- Forslund, K., Hildebrand, F., Nielsen, T., Falony, G., Le Chatelier, E., Sunagawa, S., Prifti, E., Vieira-Silva, S., Gudmundsdottir, V., Pedersen, H.K., Arumugam, M., Kristiansen, K., Voigt, A.Y., Vestergaard, H., Hercog, R., Costea, P.I., Kultima, J.R., Li, J.H., Jorgensen, T., Levenez, F.,

- Dore, J., Meta, H.I.T.C., Nielsen, H.B., Brunak, S., Raes, J., Hansen, T., Wang, J., Ehrlich, S.D., Bork, P., Pedersen, O. (2015). Disentangling type 2 diabetes and metformin treatment signatures in the human gut microbiota. *Nature* (Paris) 528, 262–266.
- Foster, P.K.F., S.H.A. Holt, and J.C.B. Miller. 2002. *International table of glycemic index and glycemic load values*. *Am. J. Clin. Nutr.* 76(1): 45–56.
- Gallagher ML. (2012). The Nutrient and Their Metabolism. In: Mahan LK, Stump SE, editors. *Krause's Food and the Nutrition Care Process* 13th edition. Philadelphia: WB Saunders Company. p. 32–41.
- Ghasemi, A., Khalifi, S. and Jedi, S. 2014. *Streptozotocin-nicotinamide-induced rat model of type 2 diabetes*, *Acta Physiologica Hungarica*, 101(4), pp. 408–420. doi: 10.1556/APhysiol.101.2014.4.2.
- Gisslen, Wayne. 2013. *Professional baking*, 6th Ed. Book. New Jersey: John Wiley & Sons
- Gisslen, Wayne. 2017. *Professional baking*, 7th Ed. New Jersey: John Wiley & Sons
- Gloria, A. C., Helle, N. L., Knud, E. B. K., & Hans, H. S. (2019). Arabinoxylan is the main polysaccharide in fiber from rice coproducts, and increased concentration of fiber decreases in vitro digestibility of dry matter. *Animal Feed Science and Technology*, 247, 255–261. <https://doi.org/10.1016/j.anifeeds.2018.11.017>.
- Gropper SS, Smith JL, Groff JL. (2009). *Carbohydrates. Advanced Nutrition and Human Metabolism* 5 th edition. Canada: Wadsworth. p. 69–77.
- Guanghe Zhao, Mengqi Hu, Xiwen Lu Ruifen Zhang. (2022). Soaking, heating and high hydrostatic pressure treatment degrade the flavonoids in rice bran. *LWT* 154 (2022) 112732
- Hamidah, S. (2009). *Patiseri*. Yogyakarta: Pendidikan Teknik Boga dan Busana Fakultas Teknik Uiversitas Negeri Yogyakarta
- Hargrove KL. 1994. Processing and utilization of rice bran in the united state. Di dalam Marshall, Wayne E, dan James I. Wadsworth (Ed). *Rice science and technology*. New York : Marcel Dekker Inc.
- Hasnain, S. Z., Prins, J. B., & McGuckin, M. A. (2016). Oxidative and endoplasmic reticulum stress in β -cell dysfunction in diabetes. *Journal of molecular endocrinology*, 56(2), R33–R54. <https://doi.org/10.1530/JME-15-0232>
- Henderson, A.J., Ollila, C.A., Kumar, A., Borreses E.C., Raina K., Agarwal, R. dan Ryan, E.P. 2012. *Chemopreventive Properties of Dietary Rice Bran: Current Status and Future Prospects*. *Advances in Nutrition*. Vol. 3 : 643–653.
- Hendrayati, H. (2019). Substitusi Bekatul Pada Pembuatan Biskuit Terhadap Peningkatan Kadar Serat Sebagai Jajanan Tinggi Serat. *Media Gizi Pangan*, 26(2), 171. <https://doi.org/10.32382/mgp.v26i2.1026>
- Herudiyanto, Marleen & Hudayana, Sarifah. 2009. *Kajian Lengkap Teori&Praktek Pengolahan Roti&Kue*. Jatinangor: Widya Padjajaran.
- Holscher, H. D. (2017). Dietary fiber and prebiotics and the gastrointestinal microbiota. *Gut Microbes*, 8(2), 172–184. <https://doi.org/10.1080/19490976.2017.1290756>.

- Houston DF. 1972. Rice Chemistry and Technology. St. Paul, Minnesota, USA: American Association of Cereal Chemists, Inc.
- Hsu, H.W., dan Luh, B.S. (1980). Rice Hull. Rice Product And Utilization. Editor: Bor Shiun Luh. New York: Avi Publishing Company Inc. pg. 736-740.
- Hu YY, Ye SD. (2013). Experimental models of type 2 diabetic nephropathy. Chin. Med. J. (Engl) 126, 574–577
- Hu, J., Lin, S., Zheng, B., & Cheung, P. C. K. (2018). Short-chain fatty acids in control of energy metabolism. Critical Reviews in Food Science and Nutrition, 58(8), 1243–1249. <https://doi.org/10.1080/10408398.2016.1245650>.
- Hua, M., Lu, J., Qu, D., Liu, C., Zhang, L., Li, S., Sun, Y. (2019). Structure, physicochemical properties and adsorption function of insoluble dietary fiber from ginseng residue: A potential functional ingredient. Food Chemistry, 286, 522–529. <https://doi.org/10.1016/j.foodchem.2019.01.114>
- Hui, Y. H. (2006). *Handbook of Food Science, Technology, and, Engineering*. CRC Press, USA. pg 171-180
- International Diabetes Federation (IDF). (2019). *IDF Diabetes Atlas (9th ed.)*. Belgium: International Diabetes Federation. Retrieved from <https://idf.org/aboutdiabetes/type-2-diabetes.html>
- International Diabetes Federation (IDF). (2020). About diabetes : Type 2 diabetes. Retrieved from <https://www.diabetesatlas.org/en/resources/>
- Idora M, Prarudiyanto A, Alamsyah A. (2018). Pengaruh Kombinasi bekatul dan tepung menir C4 terhadap beberapa komponen mutu cookies. Jurnal Pro Food. 3(2): 207–216.
- Immawati, F.R., Wirawanni, Y.(2014). Hubungan Konsumsi Karbohidrat, Konsumsi Total Energi, Konsumsi Serat, Beban Glikemik dan Latihan Jasmani dengan Kadar Glukosa Darah pada Pasien Diabetes Mellitus Tipe 2. JNH; 2(3)
- Islam MS, Loots du T. (2009). *Experimental rodent models of type 2 diabetes: a review*. Methods Find Exp Clin Pharmacol. 31:249-61.
- Islam MS, Wilson RD. 2012. *Experimentally induced rodent models of type 2 diabetes*. In: *Animal Models in Diabetes Research*, eds Joost H-G, Al-Hasani H, Schürmann A, Humana Press, New York, pp. 161–174.
- Isnaini dan Ratnasari (2018). Faktor risiko mempengaruhi kejadian Diabetes mellitus tipe dua. Jurnal Keperawatan dan Kebidanan Aisyiyah. 14(1):59-68.
- Issa, I.A., & Hussen Bule, M. (2015). Hypoglycemic Effect of Aqueous and Methanolic Extract of Artemisia afra on Alloxan Induced Diabetic Swiss Albino Mice. *Evidence-based Complementary and Alternative Medicine : eCAM*, 2015.
- Issara, U., & Rawdkuen, S. (2016). Rice bran: A potential of main ingredient in healthy beverage. International Food Research Journal, 23, 2306–2318.
- Jia, M., Chen, J., Liu, X., Xie, M., Nie, S., Chen, Y., et al. (2019). Structural characteristics and functional properties of soluble dietary fiber from

- defatted rice bran obtained through *Trichoderma viride* fermentation. *Food Hydrocolloids*, 94, 468–474.
- Johnson, M. (2012) *Laboratory Mice and Rats, Materials and Methods*. doi: 10.13070/mm.en.2.113.
- Juliano, B. O. (1984). Rice starch: Production, properties and uses. In: Whistler RL, BeMiller JN, and Paschall EF (eds.). *Starch Chemistry and Technology*, 2nd edn., p. 509. Orlando, FL: Academic Press.
- Juliano, B., Bechtel, D. B., 1985. The rice grain and its gross composition. In : *Rice: Chemistry and Technology* (B. O. Juliano, ed., 1985). American Association of Cereal Chemist, Inc., St. Paul, MN, p.17.
- Jung C-H, Choi KM. (2017). Impact of high-carbohydrate diet on metabolic parameters in patients with type 2 diabetes. *Nutrients*. 9:E322. <https://doi.org/10.3390/nu9040322>.
- Jung, T.-D., Shin, G.-H., Kim, J.-M., Choi, S.-I., Lee, J.-H., Lee, S. J. Lee, O.-H. (2017). Comparative Analysis of γ -Oryzanol, β -Glucan. Total Phenolic Content and Antioxidant Activity in Fermented Rice Bran of Different Varieties., 9(6), 571.
- Kartika, B., B. Hastuti., W. Supartono. 1988. *Pedoman Uji Inderawi Bahan Pangan*. PAU Pangan Gizi. UGM. Yogyakarta.
- Katzung, B.M. (2002). *Farmakologi Dasar dan Klinik*. Bagian Farmakologi Fakultas Kedokteran, Universitas Airlangga. Salemba Medika. Jakarta.
- Kennedy, L.L., Chung, H.Y., & Hegsted, M. (1996). New food product developed from rice bran fractions. In IFT book of abstract. IFT annual meeting: book of abst. (56 pp). USA: Institute of Food Technologists.
- Kharisma T. 2015. Studi hipokolesterolemik beras analog secara in vivo pada tikus sprague dawley (SD). Tesis di Institut Pertanian Bogor.
- Khomsan, Ali dan Faisal Anwar. 2008. *Sehat itu Mudah, Wujudkan Hidup Sehat Dengan Makanan Tepat*. PT Mizan Publika. Jakarta
- Koh, A., De Vadder, F., Kovatcheva-Datchary, P., Backhed, F., 2016. From dietary fiber to host physiology: short-chain fatty acids as key bacterial metabolites. *Cell* 165, 1332–1345.
- Kupsal, K., Mudigonda, S., Gundapaneni, K. K., Tupurani, M. K., Galimudi, R. K., Nyayapathi, V.B.K.S., Krishnaveni. N., Hanumanth, S. R. (2016). Metformin Combinatorial Therapy for Type 2 Diabetes Mellitus. *Journal of Metabolic Syndrome*. 5. 10.4172/2167-0943.1000210.
- Kurniawan, Y. D. dan Indriyani, P. (2018). Studi In Vivo Pengaruh Pemberian Bekatul Organik dan Vitamin B-15 terhadap Penurunan Kadar Glukosa Darah. *Prosiding Seminar Nasional Unimus (Volume 1, 2018)*
- L'abbate A, Neglia D, Vecoli C, Novelli M, Ottaviano V, Baldi S, Barsacchi R, Paolicchi A, Masiello P, Drummond GS, Mcclung JA, Abraham NG. 2007. Beneficial effect of heme oxygenase-1 expression on myocardial ischemia-reperfusion involves an increase in adiponectin in mildly diabetic rats. *Am. J. Physiol. Heart Circ. Physiol.* 293, H3532–H3541
- Lattimer J, Haub M. (2010). Effects of dietary fiber and its components on metabolic health. *Nutrients*. 2:1266-89.

- Laurence, D.R., and A.L., Bacharach., 1964, Evaluation of drug activities: pharmacometrics, 1st ed. Academic Press. London.
- Lavanya, M. N., Saikiran, K. C. S., & Venkatachalapathy, N. (2019). Stabilization of rice bran milling fractions using microwave heating and its effect on storage. *Journal of Food Science and Technology-Mysore*, 56(2), 889–895. <https://doi.org/10.1007/s13197-018-3550-y>
- Lenzen, S. 2008. *The Mechanism of Alloxan- and Streptozotocin-induced Diabetes. Diabetologia*, 51, 216-226.
- Li, K. Y., Lai, P., Lu, S., Fang, Y. T., & Chen, H. H. (2008). Optimization of acid hydrolysis conditions for feruloylated oligosaccharides from rice bran through response surface methodology. *Journal of Agricultural and Food Chemistry*, 56(19), 8975–8978.
- Liang, Y., Gao, Y., Lin, Q., Luo, F., Wu, W., Lu, Q., et al. (2014). A review of the research progress on the bioactive ingredients and physiological activities of rice bran oil. *European Food Research and Technology*, 238(2), 169–176.
- Lingga, L. 2012. *Bebas Diabetes Tipe 2 Tanpa Obat*. Jakarta: Agromedia Pustaka
- Liu, L., Kerr, W. L., Kong, F., Dee, D. R., & Lin, M. (2018). Influence of nano-fibrillated cellulose (NFC) on starch digestion and glucose absorption. *Carbohydrate polymers*, 196, 146–153. <https://doi.org/10.1016/j.carbpol.2018.04.116>
- Liu, Q., Cao, X., Zhuang, X., Han, W., Guo, W., Xiong, J., et al. (2017). Rice bran polysaccharides and oligosaccharides modified by *Grifola frondosa* fermentation: Antioxidant activities and effects on the production of NO. *Food Chemistry*, 223, 49–53.
- Liu, R., Liu, R., Shi, L., Zhang, Z., Zhang, T., Lu, M., Wang, X. (2019). Effect of refining process on physicochemical parameters, chemical compositions and in vitro antioxidant activities of rice bran oil. *LWT*, 109, 26–32. <https://doi.org/10.1016/j.lwt.2019.03.096>
- Liu, T., Wang, K., Xue, W., Wang, L., Zhang, C., Zhang, X., Chen, Z. (2021) In vitro starch digestibility, edible quality and microstructure of instant rice noodles enriched with rice bran insoluble dietary fiber. *LWT Food Science and Technology*. 142. 111008
- Liu, Y., Strappe, P., Shang, W., & Zhou, Z. (2017). Functional peptides derived from rice bran proteins. *Critical Reviews in Food Science and Nutrition*, 59(2), 349–356. <https://doi.org/10.1080/10408398.2017.1374923>
- Luthfianto, D., Noviyanti, R. D., & Kurniawati, I. (2017). Karakterisasi Kandungan Zat Gizi Bekatul pada Berbagai Varietas Beras di Surakarta. *Jurnal Kesehatan*, 2(1), 371–376.
- Marifah, I, U. (2019). Pengaruh substitusi tepung bekatul terhadap karakteristik cookies rumput laut *Eucheuma cottoni*. Skripsi. Malang: Universitas Brawijaya
- Mahan, K.L., Escott-Stump. (2008). *Krause's Food and Nutrition Therapy*. Canada : Elsevier: Edition 12

- Maise, K., Chong, Z.Z., Hou, J., & Shang, Y.C. (2009). *The vitamin nicotinamide: translating nutrition into clinical care*. *Molecules* 2009;14:3446–85. *Molecules*, 14:3446-85.
- Makki, K., Deehan, E.C., Walter, J., Backhed, F., (2018). The impact of dietary fiber on gut microbiota in host health and disease. *Cell Host Microbe* 23, 705–715.
- Manley D. (2000). *Technology of Biscuits, Crackers and Cookies*. Third Edition. Woodhead Publishing Limited, England
- Marsono (1994). Kandungan Lemak dan Oryzanol Bekatul dari Beberapa Varietas Padi Unggul. Laporan Penelitian Proyek Penelitian OPE/FTP-UGM. Fakultas Teknologi Pertanian. Universitas Gadjah Mada, Yogyakarta.
- Marsono, Y., P. Wiyono, dan Z. Noor. (2002). Indeks glikemik kacang-kacangan. *Jurnal Teknologi dan Industri Pangan* 13(3): 13–20.
- Marsono, Y. (2004). *Serat Pangan dalam Perspektif Ilmu Gizi*. Universitas Gadjah Mada. Yogyakarta.
- Marzeline, C.N.L.M., Adi, A.C. 2017. Pengaruh Substitusi Bekatul (Rice Bran) dan Bengkuang (*Pachyrhizus erosus*) Terhadap Kadar Energi, Kadar Serat dan Daya Terima Pada Mini Pao. Marzeline dan Adi. *Amerta Nutr* 282-290 DOI : 10.2473/amnt.v1i4.282-290
- Masharani U, Karam JH. (2001). *Pancreatic Hormones & Diabetes Mellitus*. In *Basic & Clinical Endocrinology*. 6th ed. Greenspan FS, Gardner DG (eds), Mc Graw Hill, New York 2001: pp. 623-48.
- Masiello P, Broca C, Gross R, Roye M, Manteghetti M, Hillaire-Buys D. (1998). *Experimental NIDDM: development of a new model in adult rats administered streptozotocin and nicotinamide*. *Diabetes*. 47:224-229.
- Masiello P. (2006). *Animal models of type 2 diabetes with reduced pancreatic β -cell mass*. *Int. J. Biochem. Cell. Biol.* 38, 873–893.
- Mather K. 2009. *Surrogate measures of insulin resistance: of rats, mice, and men*. *Am Physiol Endocrinol Metab*. 296: 398–399.
- Mirna Z, T., Sadek, N. F., Sukarno, Yuliana, N, C., dan Budijanto, S. (2017) Pengembangan Bekatul sebagai Pangan Fungsional: Peluang, Hambatan, dan Tantangan. *Jurnal Pangan*. DOI : <https://doi.org/10.33964/jp.v26i2.354>
- Muchtadi, D. (2012). *Pangan Fungsional & Senyawa Bioaktif*. Alfabeta.
- Mudgil, D., & Barak, S. (2013). Composition, properties and health benefits of indigestible carbohydrate polymers as dietary fiber: A review. *International Journal of Biological Macromolecules*, 61, 1–6. <https://doi.org/10.1016/j.ijbiomac.2013.06.044>
- Mulyani, T. S. Djajati. L.D. Rahayu. 2015. Pembuatan Cookies Bekatul (Kajian Proporsi Tepung Bekatul Dan Tepung Mocaf) Dengan Penambahan Margarine. *Jurnal Rekapangan* 2(9):1-8.
- Myers, P. & D. Armitage. 2004. *Rattus norvegicus*, animal diversity.
- Nandi, I., & Ghosh, M. (2015). Studies on functional and antioxidant property of dietary fibre extracted from defatted sesame husk, rice bran and flaxseed. *Bioactive Carbohydrates and Dietary Fibre*, 5, 129–136.

- Nandi, Ankita & Yan, Liang-Jun & Jana, Chandan & Das, Nilanjana. (2019). Role of Catalase in Oxidative Stress- And Age-Associated Degenerative Diseases. *Oxidative Medicine and Cellular Longevity*. 2019. 1-19. 10.1155/2019/9613090.
- Nanuna, J. N., McGregor, J. U., & Godber, J. S. (2000). Influence of high-oryzanol rice bran oil on the oxidative stability of whole milk powder. *Journal of Dairy Science*, 83, 2426–2431.
- Nesti DR, Baidowi A, Ariyanti F, dan Tjahajati I. (2018). Deteksi penyakit zoonosis Ehrlichiosis pada pasien anjing di klinik hewan jogja. *Jurnal Nasional Teknologi Terapan*. 2: 191–197.
- Neutzsky-Wulff AV, Andreassen KV, Hjuler ST. (2012). Future detection and monitoring of diabetes may entail analysis of both β -cell function and volume: How markers of β -cell loss may assist. *J Transl Med*. 10(214):1-16
- Novelli M, Pocai A, Lajoix AD, Beffy P, Bezzi D, Marchetti P, Gross R, Masiello P. (2004). : *Alteration of β -cell constitutive NO synthase activity is involved in the abnormal insulin response to arginine in a new rat model of type 2 diabetes*. *Mol. Cell. Endocrinol*. 219, 77–82.
- Nsor-Atindana J, Zhong F, dan Mothibe KJ. 2012. In vitro hypoglycemic and cholesterol lowering effects of dietary fiber prepared from cocoa (*Theobroma cacao* L.) shells. *Food Functional*. 3 (10): 1044-1050.
- Nugroho, A. E. 2006. Hewan Percobaan Diabetes Mellitus : Patologi Dan Mekanisme Aksi Diabetogenik . *BIODIVERSITAS* Vol. 7, No. 4, hal. 378-382. DOI : 10.13057/biodiv/d070415
- Nurhidajah. 2016. Potensi hipoglikemik dan antioksidatif beras merah dengan penambahan kappa-karagenan dan ekstrak antosianin pada tikus diabetes melitus induksi STZ-NA. Tesis. D.I Yogyakarta : Universitas Gadjah Mada.
- Nussey, S.; Whitehead, S. *Endocrinology: An Integrated Approach*; BIOS Scientific Publishers: Oxford, UK, 2001.
- 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>
- Palsamy P, Subramanian S. 2011. *Resveratrol protects diabetic kidney by attenuating hyperglycemia-mediated oxidative stress and renal inflammatory cytokines via Nrf2-Keap1 signaling*. *Biochim. Biophys. Acta* 1812, 719–731.
- Papathanasopoulos A, Camilleri M. Dietary fiber supplements: effects in obesity and metabolic syndrome and relationship to gastrointestinal functions. *Gastroenterology* 2010;138:65-72.e1-2.
- Parasuraman, S., Raveendran, R., & Kesavan, R. (2010). Blood sample collection in small laboratory animals. *Journal of pharmacology & pharmacotherapeutics*, 1(2), 87–93. <https://doi.org/10.4103/0976-500X.72350>

- Pearson, T.; Wattis, J.A.; King, J.R.; MacDonald, I.A.; Mazzatti, D.J. The Effects of Insulin Resistance on Individual Tissues: An Application of a Mathematical Model of Metabolism in Humans. *Bull. Math. Biol.* 2016, 78, 1189–1217.
- PERKENI. (2015). *Konsensus Pengelolaan dan Pencegahan Diabetes Mellitus Tipe 2 di Indonesia*. Jakarta : PB Perkeni
- PERKENI. (2021). Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia 2021. <https://pbperkeni.or.id/wp-content/uploads/2021/11/22-10-21-Website-Pedoman-Pengelolaan-dan-Pencegahan-T2DM-Ebook.pdf>. (Diakses pada 15 Juli 2022)
- Pertiwi, D. *et al.* 2006. Pengaruh Perbandingan Tepung Kacang Koro dan Tepung Terigu dengan Pemnaggangan Terhadap Karakteristik Biscuit Kacang Koro. Jurusan Teknologi Pangan. Fakultas Teknik. Universitas Pasundan. Bandung.
- Pranata, S., Wu, S. V., Alizargar, J., Liu, J. H., Liang, S. Y., & Lu, Y. Y. (2021). Precision Health Care Elements, Definitions, and Strategies for Patients with Diabetes: A Literature Review. *International journal of environmental research and public health*, 18(12), 6535. <https://doi.org/10.3390/ijerph18126535>
- Punithavathi, V. R.; Anuthama, R. & Prince, P. S. 2008. *Combined treatment with naringin and vitamin C ameliorates streptozotocin-induced diabetes in male Wistar rats*. *J. Appl. Toxicol*; 28(6):806-13,.
- Pratiwi, M., A. (2008). Pemanfaatan Tepung Hotong (*Setaria italica* (L) Beauv.) Dan Pati Sagu Dalam Pembuatan Cookies. Skripsi. Bogor: Fakultas Teknologi Pertanian. Institut Pertanian Bogor. 97 hal.
- Pusdatin (Pusat Data dan Informasi) Kemenkes RI. (2020). Infodatin: Tetap Produktif, Cegah dan Atasi Diabetes Melitus. Jakarta: Kementerian Kesehatan
- Pusdatin (Pusat Data dan Informasi) Kementerian Kesehatan RI. (2019). Infodatin Diabetes Melitus. Jakarta: Kementerian Kesehatan
- Puspitasari. (2015). Pengaruh Pemberian Pisang Kepok (*Musa paradisiaca forma typical*) Terhadap Kadar Malondialdehyde (MDA) Tikus Sprague dawley PraSyndrome Metabolik. Tesis. Semarang: Universitas Diponegoro.
- Qing Ge, Hang-qing Li, Zhe-yuan Zheng, Kai Yang, Peng Li, Zhu-qian Xiao, Guo-ming Xiao, Jian-wei Mao. (2022). In vitro fecal fermentation characteristics of bamboo insoluble dietary fiber and its impacts on human gut microbiota. *Food Research International* 156.111173.
- Rafe, A., Mousavi, S. S., & Shahidi, S.-A. (2014). Dynamic rheological behavior of rice bran protein (RBP): Effects of concentration and temperature. *Journal of Cereal Science*, 60, 514–519.
- Raninen K, Lappi J, Mykkanen H, Poutanen K. Dietary fiber type reflects physiological functionality: comparison of grain fiber, inulin, and polydextrose. *Nutr Rev* 2011;69:9-21
- Rao B.S.N. 2000. *Nutritive Value of Rice Bran*. Nutrition Foundation of India : 58.

- Rat Insulin ELISA Kit 90010. *Crystal Chem "High Performance Assays"*.
<https://www.crystalchem.com/media/catalog/product/9/0/90010ratinsulinb.pdf>. Diakses tanggal 13 Januari 2022.
- Reeves G. P., 1997. *Components of the AIN-93 Diets as Improvements in the AIN-76A Diet*. J. Nutr. 127: 838S–841S
- Rimbawan dan Siagian, A. (2004). Indeks Glikemik Pangan. Penebar Swadaya, Jakarta.
- Robertson, M. D., Wright, J. W., Loizon, E., Debar, C., Vidal, H., Shojaee-Moradie, F., Russell-Jones, D., & Umpleby, A. M. (2012). Insulin-sensitizing effects on muscle and adipose tissue after dietary fiber intake in men and women with metabolic syndrome. *The Journal of clinical endocrinology and metabolism*, 97(9), 3326–3332.
<https://doi.org/10.1210/jc.2012-1513>
- Rodrigues, P. V., Lemos, B., Silva, M., de Campos Lima, T., Santos, D. O., Lemes, J., & Lotufo, C. (2021). Alloxan as a better option than streptozotocin for studies involving painful diabetic neuropathy. *Journal of pharmacological and toxicological methods*, 112, 107090.
<https://doi.org/10.1016/j.vascn.2021.107090>
- Roosheroe AG, Setiati S, Istanti R. 2012. *Insulin Resistance as One of Indicators for Metabolic Syndrome and Its Associated Factors in Indonesian Elderly*. Acta Med Indonesia Intern Med. 44 (3).
- Rosiani, N., Basito., Esti, W. Kajian karakteristik sensoris fisik dan kimia kerupuk fortifikasi daging lidah buaya (*Aloe vera*) dengan metode pemanggangan menggunakan microwave. Jurnal teknologi hasil pertanian. 8 (2): 84-98
- Roth, D. L., Zick, Y. (2001). Recent Advances in Our Understanding of Insulin Action and Insulin Resistance, *Diabetes Care*. Dari: <http://care.diabetesjournals.org> [1 September 2022]
- Ryan, E. P. (2011). Bioactive food components and health properties of rice bran. *Journal of the American Veterinary Medical Association*, 238, 593–600.
- Sacks, D.B., Carbohydrates, In Tietz Fundam (2001). *Fundamentals of Clinical Chemistry*, Eds Burtis C.A, Ashwood E.R, 5th Edition, W.B. Saunders Company, USA:427-461
- Sakinah, E.N. (2017). *The role of Cholecalciferol in the Improvement of Insulin Resistance in Diabetic Mice Model*. *Journal of Agromedicine and Medical Sciences*. Vol. 3 No. 3. Jember : Fakultas Kedokteran Universitas Jember
- Saksono H. (2012). Pasar Cookies Diproyeksi Tumbuh 8% Didorong Konsumsi. <http://www.indonesiainancetoday.com>.
- Santoso A. (2011). Serat Pangan (Dietary fiber) dan Manfaatnya Bagi Kesehatan. *Magistra*. 75 : 35 - 40
- Sarbini, Dwi & Rahmawaty, Setyaningrum & Kurnia, Pramudya. (2009). Uji Fisik, Organoleptik, Dan Kandungan Zat Gizi Biskuit Tempe-Bekatul Dengan Fortifikasi Fe Dan Zn Untuk Anak Kurang Gizi. *Jurnal Penelitian Sains & Teknologi*, Vol. 10, No. 1, 2009: 18 – 26

- Schwartz, S.S.; Epstein, S.; Corkey, B.E.; Grant, S.F.; Gavin, J.R., 3rd; Aguilar, R.B. The Time Is Right for a New Classification System for Diabetes: Rationale and Implications of the β -Cell-Centric Classification Schema. *Diabetes Care* 2016, 39, 179–186
- Shakuntala, O. Manay. 2001. *Food: Facts and Principles*. New Age International. New Delhi.
- Sharif, M. K., Butt, M. S., Anjum, F. M., & Nawaz, H. (2009). Preparation of fiber and mineral enriched defatted rice bran supplemented cookies. *Pakistan Journal of Nutrition*, 8, 571–577.
- Sharif, M. K., Butt, M. S., Anjum, F. M., & Khan, S. H. (2014). Rice bran: A novel functional ingredient. *Critical Reviews in Food Science and Nutrition*, 54, 807–816.
- Sharma, H. R., & Chauhan, G. S. (2002). Effect of stabilized rice bran-fenugreek blends on the quality of breads and cookies. *Journal of Food Science & Nutrition*, 39, 225–233.
- Sharma AK, Sharma A, Kumari R, Kishore K, Sharma D, Srinivasan BP, Singh SK, Gaur S, Jatav VS, Sharma P, Srivastava V, Joshi S, Joshi M, Dhakad PK, Kanawat DS, Mishra A, Singh D, Singh RP, Chawda HS, Singh R, Raikwar SK, Kurmi MK, Khatri P, Agarwal A, Munajjam A. (2012). *Sitagliptin, sitagliptin and metformin, or sitagliptin and amitriptyline attenuate streptozotocin-nicotinamide induced diabetic neuropathy in rats*. *J. Biomed. Res.* 26, 200–210.
- Sheela N, Jose MA, Sathyamurthy D, Kumar BN. (2013). Effect of silymarin on streptozotocin-nicotinamide-induced type 2 diabetic nephropathy in rats. *Iran J. Kidney Dis.* 7, 117–123.
- Shivali, P, Narinder, K. (2022). Utilization of fruits and vegetable by-products for isolation of dietary fibres and its potential application as functional ingredients. *Bioactive Carbohydrates and Dietary Fibre*. 27. 100295
- Siagian RA. Faktor Faktor yang Mempengaruhi Indeks Glikemik Pangan, Indeks Glikemik dan Beban Glikemik Beberapa Jenis Pangan Indeks Glikemik Pangan: Cara Mudah Memilih Pangan yang Menyehatkan. Jakarta: Penebar Swadaya 2004. p. 33-40, 105-12.
- Sierra M, Garcia JJ, Fernandez N, Diez MJ, Calle AP. (2002). Therapeutic effects of psyllium in type 2 diabetic patients. *Eur J Clin Nutr*;56:830-42.
- Silalahi, J. dan Hutagalung, N. (2008). *Komponen-Komponen Bioaktif dalam Makanan dan Pengaruhnya terhadap Kesehatan*. Jurusan Farmasi. Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Sumatera Utara. Medan.
- Silva, F.M., Kramer, C.K., Crispim, D., Azevedo, M.J., 2015. A high-glycemic index, lowfiber breakfast affects the postprandial plasma glucose, insulin, and ghrelin responses of patients with type 2 diabetes in a randomized clinical trial. *J. Nutr.* 145, 736–741.
- Simatupang, H. F., Sinorita, H., M., Ikhsan, R. (2019). *Konsumsi Makanan Pengganti Kudapan 32 Gram Berbahan Dasar Serat Pati Resistan (*Dioscorea Esculanta*, *Maranta Arudinaceal*, *Cucurbita Moschata*,*

- Manihot Utilissima*) Terhadap Peningkatan Homa-Beta Pada Pasien Diabetes Melitus Tipe 2 Obes Di RSUP Dr. Sardjito .
- Sinurat, E., Fransiska, D., Sihono, & Kusumawati, R. (2021). The Effect of Ulva Biscuit Diet on Reducing Blood Glucose Levels of Sucrose Induced Rats. *Jurnal Pascapanen Dan Bioteknologi Kelautan Dan Perikanan*, 16(1), 63–72.
- Sirois, M. (2005). *Laboratory Animal Medicine: Principles And Procedures*, Philadelphia.
- Sofianti, N. (2020). Pemanfaatan Bekatul Terhadap Sifat Sensori dan Kimia Produk Cookies. *Ghidza Media Journal*. April 2020 1(2):81-86
- Sohail, M., Rakha, A., Butt, M. S., Iqbal, M. J., & Rashid, S. (2017). Rice bran nutraceuticals: A comprehensive review. *Critical Reviews in Food Science and Nutrition*, 57(17), 3771–3780. <https://doi.org/10.1080/10408398.2016.1164120>
- Stevani, H. (2016). Modul Bahan Ajar Cetak Farmasi “Praktikum Farmakologi”. Pusdik SDM Kesehatan. Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan. Kementerian Kesehatan Republik Indonesia. Jakarta.
- Stumvoll, M.; Goldstein, B.J.; van Haefen, T.W. (2005). Type 2 diabetes: Principles of pathogenesis and therapy. *Lancet*. 365, 1333–1346.
- Sudarmadji. S., Haryono, B., Suhardi. 1996. Analisa Bahan Makanan dan Pertanian. Liberty Yogyakarta. Yogyakarta.
- Sugito dan Hayati, A. 2006. Penambahan Daging Ikan Gabus (*Ophicepallus striatus* BLKR) dan Aplikasi Pembekuan Pada Pembuatan Pempek Gluten. *Jurnal Ilmu-Ilmu Pertanian Indonesia* Vol. 8 No. 2: 147-151.
- Sugiyono. (2012). Memahami Penelitian Kualitatif. Bandung: Alfabeta
- Sulistyorini, R., Sarjadi, Andrew J. and Kis D. (2015). Pengaruh Ekstrak Etanol Daun Kelor (*Moringa oleifera*) pada Ekspresi Insulin dan insulinitis Tikus Diabetes Melius. *MKB*. 47 (2): 69-76.
- Sunarti. (2017). *Serat Pangan dalam Penanganan Sindrom Metabolik*. Yogyakarta: Gadjah Mada University Press
- Susanto, D. (2011). Potensi bekatul sebagai sumber antioksidan dalam produk selai kacang. *Jurnal Produk Pertanian*. 3 (1):112-119
- Sutjahjo, A. (2015). 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*, Vol. 21, 120–124
- Swaminathan, S., Abirami, M.J., and Senthilraj, O., (2019). Diagnostic usefulness of 1, 5 anhyroglucitol in Diabetes Mellitus: A review. *International Journal of Research in Pharmaceutical Sciences*, 10 (2), 935–942.
- Szkudelski T. (2012). *Streptozotocin-nicotinamide-induced diabetes in the rat. Characteristics of the experimental model. Exp. Biol. Med.* (Maywood) 237, 481–490.
- Tazakori, Z., M. Dehghan, M. Iranparvar, M. Zare Foladi, N. Mohmmadi. (2007). *Research journal of Biological Sciencier* 2 (3):252-255.

- Tejaningrum, N., Prarudiyanto, A., Yasa, I, W, S. The Effect of Composite Flour of Sweet Potato (*Ipomoea Batatas* L.) and Red Rice Bran on The Physical and Organoleptic Properties of Chinese Steamed Buns. *Pro Food* (Jurnal Ilmu dan Teknologi Pangan) <http://www.profood.unram.ac.id/index.php/profood> Vol 4 No. 2 November 2018
- Tjay, T.H., K, Rahardja. 2003. Obat-obat Penting Khasiat, Penggunaan dan Efek-efek Sampingnya. Elex Media Komputindo Kelompok Gramedia, Jakarta
- Tjokroprawiro, A. 2012. Garis Besar Pola Makan dan Pola Hidup Sebagai Pendukung Terapi Diabetes Melitus. Surabaya: Fakultas Kedokteran Unair
- Tortora, G. J., & Derrickson, B. (2009). *Principles of Anatomy & Physiology*. USA: John Wiley & Sons. Inc.
- Tsatsoulis A, Mantzaris MD, Bellou S, Andrikoula M. (2013). Insulin resistance: An adaptive mechanism becomes maladaptive in the current environment - an evolutionary perspective. *Metab Clin Exp*. 62(5):622-33
- Unai Galicia-Garcia, Asier Benito-Vicente, Shifa Jebari, Asier Larrea-Sebal, Haziq Siddiqi, Kepa B. Uribe, Helena Ostolaza and César Martín. (2020). Pathophysiology of Type 2 Diabetes Mellitus. *Int. J. Mol. Sci*. 21, 6275; doi:10.3390/ijms21176275
- Uusitupa, M., Khan, T. A., Vigiuliouk, E., Kahleova, H., Rivellese, A. A., Hermansen, K., Sievenpiper, J. L. (2019). Prevention of Type 2 Diabetes by Lifestyle Changes: A Systematic Review and Meta-Analysis. *Nutrients*, 11(11). <https://doi.org/10.3390/nu11112611>.
- Vogel H. (2007). *Drug discovery and evaluation: pharmacological assays*. Springer.
- Wahyuni, S. (2012). Pusat Penelitian dan Pengembangan Sosial Ekonomi Pertanian, Bogor. SOCA: Socioeconomics of Agriculture and Agribusiness, 4(3).
- Wallace, T. M., Levy, J. C., & Matthews, D. R. (2004). Use and abuse of HOMA modeling. *Diabetes care*, 27(6), 1487–1495. <https://doi.org/10.2337/diacare.27.6.1487>
- Wang, L., Wu, J., Luo, X., Li, Y., Wang, R., Li, Y., Chen, Z. (2018). Dynamic highpressure microfluidization treatment of rice bran: Effect on Pb(II) ions adsorption in vitro. *Journal of Food Science*, 83(7), 1980–1989.
- Wang, Siqi & Fang, Yingqi & Xu, Yongbin & Zhu, Bo & Piao, Jigang & Zhu, Lili & Yao, Lumeng & Liu, Kaohua & Wang, Shunchun & Zhang, Qiaoyan & Qin, Luping & Wu, Jianjun. (2022). The effects of different extraction methods on physicochemical, functional and physiological properties of soluble and insoluble dietary fiber from *Rubus chingii* Hu. fruits. *Journal of Functional Foods*. 93. 105081. 10.1016/j.jff.2022.105081.
- Waspadji, S. 2007. Diabetes melitus. Dalam Penatalaksanaan Diabetes Melitus Terpadu. Fakultas Kedokteran Universitas Indonesia, Jakarta.

- Weickert MO, Pfeiffer AFH. (2018). Impact of dietary fiber consumption on insulin resistance and the prevention of type 2 diabetes. *J Nutr.* 148:7e12. <https://doi.org/10.1093/jn/nxx008>.
- Weng Y, Yu L, Cui J, Zhu YR, Guo C, Wei G, Duan JL, Yin Y, Guan Y, Wang YH, Yang ZF, Xi MM, Wen AD. (2014). Antihyperglycemic, hypolipidemic and antioxidant activities of total saponins extracted from *Aralia taibaiensis* in experimental type 2 diabetic rats. *J. Ethnopharmacol.* 152, 553–560
- Weyer, C.; Bogardus, C., Mott, D.M., Pratley, R.E. (1999). The natural history of insulin secretory dysfunction and insulin resistance in the pathogenesis of type 2 diabetes mellitus. *J. Clin. Investig.*, 104, 787–794.
- WHO. (2016). *Global Report On Diabetes*. France : World Health Organization.
- Widjanarko, SB dan Adi Nugroho. 2008. Pengembangan Prototipe Pangan Darurat Berenergi Tinggi dan Padat Nutrisi Berbasis Potensi Bahan Baku Lokal (Ubi Jalar, Jagung, Kedelai, dan Tepung Porang). Laporan Project K3PT Litbang Pertanian.
- Wilcox, G. (2005). Insulin and insulin resistance. *Clin. Biochem. Rev.* 26, 19–39.
- Willet, W., J. Manson, and S. Liu. (2002). *Glycemic index, glycemic load and risk of type 2 diabetes*. *Am. J. Clin. Nutr.* 76(1): 274S–280S.
- Winarno, F.G. 2004. *Kimia Pangan dan Gizi*. Gramedia Pustaka Utama. Jakarta.
- Winarti, S. 2010. *Makanan Fungsional*. Yogyakarta: Graha Ilmu
- Witasari, U., Rahmawaty S., dan Zulaekah, S. 2009. Hubungan Tingkat Pengetahuan, Asupan karbohidrat, Dan Serat Dengan Pengendalian Kadar Glukosa Darah Pada Penderita Diabetes Melitus Tipe 2. (*Jurnal Penelitian Sains & Teknologi* Vol.10 No.2 :130-138, 2009); <http://publikasiilmiah.ums.ac.id>
- Wolever, T.M.S. 1990. Dietary fiber in the management of diabetes. In *Dietary Fiber: Chemistry, Physiology, and Health Effects*. Eds. D. Kritchevsky, C. Bonfield, and J.W. Anderson, pp 283-286. Plenum Press, New York.
- Yangilar, F. (2013). The application of dietary fibre in food industry: Structural features, effects on health and definition, obtaining and analysis of dietary fibre: A review. *Journal of Food and Nutrition Research*, 1(3), 13–23.
- Younas, A., Bhatti, M. S., Ahmed, A., & Randhawa, M. A. (2011). Effect of rice bran supplementation on cookie baking quality. *Pakistan Journal of Agricultural Sciences*, 48(2), 129–134.
- Yulianto, W, A. (2021). *Kimia Beras: Biosintesis dan Sifat Fungsional Pati*. Deepublish: Yogyakarta.
- Zhang, X., Zhang, M., Dong, L., Jia, X., Liu, L., Ma, Y., Zhang, R. (2019). Phytochemical profile, bioactivity, and prebiotic potential of bound phenolics released from rice bran dietary fiber during in vitro gastrointestinal digestion and colonic fermentation. *Journal of Agricultural and Food Chemistry*, 67, 12796–12805.
- Zhang, X., Dong, L., Jia, X., Liu, L., Chi, J., Huang, F., Zhang, R. (2020). Bound Phenolics Ensure the Antihyperglycemic Effect of Rice Bran Dietary Fiber in db/db Mice via Activating the Insulin Signaling Pathway in

Skeletal Muscle and Altering Gut Microbiota. *Journal of Agricultural and Food Chemistry*, 68(15), 4387–4398.
<https://doi.org/10.1021/acs.jafc.0c00584>10.1021/acs.jafc.0c00584.s001

- Zhao, G., Zhang, R., Dong, L., Huang, F., Tang, X., Wei, Z., & Zhang, M. (2018). Particle size of insoluble dietary fiber from rice bran affects its phenolic profile, bioaccessibility and functional properties. *LWT–Food Science and Technology*, 87, 450–456.
- Zhao, L.P., Zhang, F., Ding, X.Y., Wu, G.J., Lam, Y.Y., Wang, X.J., Fu, H.Q., Xue, X.H., Lu, C.H., Ma, J.L., Yu, L.H., Xu, C.M., Ren, Z.Y., Xu, Y., Xu, S.M., Shen, H.L., Zhu, X. L., Shi, Y., Shen, Q.Y., Dong, W.P., Liu, R., Ling, Y.X., Zeng, Y., Wang, X.P., Zhang, Q. P., Wang, J., Wang, L.H., Wu, Y.Q., Zeng, B.H., Wei, H., Zhang, M.H., Peng, Y.D., Zhang, C.H. (2018). Gut bacteria selectively promoted by dietary fibers alleviate type 2 diabetes. *Science* 359, 1151–1156.
- Zheng, Y., Ley, S.H., Hu, F.B. (2018). Global aetiology and epidemiology of type 2 diabetes mellitus and its complications. *Nat. Rev. Endocrinol.* 14, 88–98.