

DAFTAR PUSTAKA

- Al-Malki, AL & Rabey, HAE 2015, 'The antidiabetic effect of low doses of *Moringa oleifera* lam. Seeds on streptozotocin induced diabetes and diabetic nephropathy in male rats', *Biomed Research International*, hlm.1-3.
- Abdull, R, Ahmad, F, Ibrahim, MD, Kntayya, SB 2014, 'Health benefits of *Moringa oleifera*', *Asian Pacific Journal of Cancer Prevention*, vol.15, no.20, hlm.8571-8576.
- Abdulsalam, A, Ajani, OE, Opara, JA, Abdulkadir, MA 2019, 'Benefits of *Moringa oleifera* plant as a functional food in health and diseases', *International Journal of Medical Science and Clinical Research Studies*, vol.1, no.1, hlm.12-15.
- Alethea, T & Ramadhian, MR 2015, 'Efek antidiabetik pada daun kelor', *Jurnal Majority*, vol.4, no.9, hlm.118-122.
- Aloud, AA, Veeramani, C, Govindasamy, C, Alsaif, MA, Al-Numair, KS 2018, 'Galangin, a natural flavonoid reduces mitochondrial oxidative damage in streptozotocin-induced diabetic rats', *Redox Report*, vol.23, no.1, hlm.29-34.
- Aminah, S, Ramdhan, T, Yanis, M 2015, 'Kandungan nutrisi dan sifat fungsional tanaman kelor (*Moringa oleifera*)', *Buletin Pertanian Perkotaan*, vol.5, no.2, hlm.35-44.
- Andrie, M., Taurina, W, Ayunda, R 2014, 'Activities test of jamu gendong kunyit asam (*Curcuma domestica* val.; *Tamarindus indica*) as an antidiabetic in streptozotocin-induced rats', *Traditional Medicine journal*, vol.19, no.2, hlm.95-102.
- Aninditha, R., Harahap, U, Hasibuan, PAZ 2018, 'Pengaruh ekstrak etanol kulit buah nanas (*Ananas comosus* (L.) merr.) terhadap glukosa darah pada mencit hiperglikemia secara in vivo', *Jurnal Aisyiyah Medika*, vol.2.
- Arifin, H, Merry, A, Ahmad, A 2017, 'Pengaruh air perasan bengkuang (*Pachyrhizus erosus* (L.) urb.) terhadap kadar gula darah mencit putih jantan diabetes', *Jurnal Sains dan Teknologi Farmasi*, vol.16, no.2, hlm.128-137.
- Arjadi, F & Mustofa, 2017, 'Ektrak daging buah mahkota dewa meregenerasi sel pulau langerhans pada tikus putih diabetes', *Jurnal Ilmiah Biologi*, vol.5, no.1, hlm.27-33.
- Asbar, R, Sugiyono, S, Haryanto, B 2014, 'Peningkatan pati resisten tipe III pada tepung singkong modifikasi (mocaf) dengan perlakuan pemanasan-

- pendinginan berulang dan aplikasinya pada pembuatan mie kering', *Jurnal Pangan*, vol.23, no.2, hlm.157-165.
- Ashwar, BA, Gani, A, Shah, A, Wani, IA, Masoodi, FA 2016, 'Preparation, health benefits and applications of resistant starch—a review', *Starch-Stärke*, vol.68, no.3-4, hlm.287-301.
- Asih, IARA, Sudiarta, IW, Suci, AAW 2015. 'Aktivitas antioksidan senyawa golongan flavonoid ekstrak etanol daging buah terong belanda (*Solanum betaceum cav.*)', *Jurnal Kimia*, vol. 9, no.1, hlm.35-40.
- Astuti, S 2012, 'Isoflavon kedelai dan potensinya sebagai penangkap radikal bebas', *Jurnal Teknologi & Industri Hasil Pertanian*, vol.13, no.2, hlm.128-138.
- Bachmid, N 2015, 'Uji aktivitas antikolesterol ekstrak etanol daun patikan emas (*Euphorbia prunifolia jacq.*) pada tikus wistar yang hiperkolesterolemia', *Jurnal MIPA*, vol.4, no.1, hlm.29-35.
- Badan Penelitian Bioteknologi Perkebunan Indonesia 2007, *Tanaman sagu sebagai sumber energi alternatif*, Warta Penelitian dan Pengembangan Pertanian, vol.29, no.4, hlm.3-4.
- Bahadoran, Z, Mirmiran, P, Azizi, F 2013, 'Dietary polyphenols as potential nutraceuticals in management of diabetes: a review', *Journal of Diabetes and Metabolic Disorders*, vol.12, no.1, hlm.43.
- Banjarnahor, SD & Artanti, N 2015, 'Antioxidant properties of flavonoids', *Medical Journal of Indonesia*, vol.23, no.4, hlm.239-244.
- Besselsen, DG 2004, *Biology of laboratory rodent*, Medical Books, New York.
- Besten GD, Eunen KV, Groen AK, Venema K, Reijngoud DJ, Bakker BM 2013, 'The role of short-chain fatty acids in the interplay between diet, gut microbiota, and host energy metabolism', *Journal of Lipid Research*, vol.54, hlm.2325-2340.
- Beu, SW 2014, 'Uji efektivitas ekstrak etanol tunas pisang goroho (*Musa acuminata L.*) terhadap penurunan kadar gula darah tikus putih jantan galur wistar (*Rattus norvegicus*) yang diinduksi sukrosa', *Pharmakon*, vol.3, no.2, hlm.62-66.
- Bindels, LB, Munoz, RRS, Gomes-Neto, JC, Mutemberezi, V, Martínez, I, Salazar, N, Cody, EA, Quintero-Villegas, MI, Kittana, H, De Los Reyes-Gavilán, CG, Schmaltz, RJ 2017, 'Resistant starch can improve insulin sensitivity independently of the gut microbiota', *Microbiome*, vol.5, no.1, hlm.12.

- Birt, DF., Boylston, T, Hendrich, S, Jane, JL, Hollis, J, Li, L, McClelland, J, Moore, S, Phillips, GJ, Rowling, M, Schalinske, K 2013, 'Resistant starch: promise for improving human health', *Advances in Nutrition*, vol.4, no.6, hlm.587-601.
- Bodinham, CL, Smith, L, Thomas, EL, Bell, JD, Swann, JR, Costabile, A, Russell-Jones, D, Umpleby, AM, Robertson, MD 2014, 'Efficacy of increased resistant starch consumption in human type 2 diabetes', *Endocrine Connections*, vol.3, no.2, hlm.75-84.
- Bogoriani, NW, Putra, AAP, Heltyani, WE 2019, 'The effect of intake duck egg yolk on body weight, lipids profile and atherosclerosis disease in male wistar rats. International', *Journal of Pharmaceutical Sciences and Research*, vol.10, no.2, hlm.926-932.
- Brand-Williams, W, Cuvelier, ME, Berset, CLWT 1995, 'Use of a free radical method to evaluate antioxidant activity', *LWT-Food Science and Technology*, vol.28, no.1, hlm.25-30.
- Brilhante, RSN, Sales, JA, Pereira, VS, Castelo-Branco, DDSCM, Cordeiro, RDA, Sampaio, CMDs, Paiva, MDAN, Santos, JBFD, Sidrim, JJC, Rocha, MFG 2017, 'Research advances on the multiple uses of moringa oleifera: a sustainable alternative for socially neglected population', *Asian Pacific Journal of Tropical Medicine*, vol.10, no.7, hlm.621-630.
- Brownlee, M 2005, 'The pathobiology of diabetic complications: a unifying mechanism', *Diabetes*, vol.54, no.6, hlm.1615-1625.
- Cho, N, Shaw, JE, Karuranga, S, Huang, Y, Fernandes, JDDR., Ohlrogge, AW, Malanda, B 2018, 'IDF diabetes atlas: global estimates of diabetes prevalence for 2017 and projections for 2045', *Diabetes Research and Clinical Practice*, vol.138, hlm.271-281.
- Cook, MN, Girman, CJ, Stein, PP, Alexander, CM, Holman, RR 2005, 'Glycemic control continues to deteriorate after sulfonylureas are added to metformin among patients with type 2 diabetes', *Diabetes Care*, vol.28, no.5, hlm.995-1000.
- Czech, MP 2017, 'Insulin action and resistance in obesity and type 2 diabetes', *Nature Medicine*, vol.23, no.7, hlm.804.
- Dahlan, MS 2014, *Statistik untuk kedokteran dan kesehatan*, Salemba Medika, Jakarta.
- Diagnostic System International 2014, *Glucose FS: diagnostic reagent for quantitative in vitro determination of glucose in serum or plasma on photometric systems*, Diasys Diagnostic Systems GmbH, Germany.

- Direktorat Jenderal Perkebunan 2013, *Peningkatan produksi, produktivitas dan mutu tanaman tahunan tentang pedoman teknis pengembangan tanaman sagu*, Kementerian Pertanian, Jakarta.
- Duque, SMM, Castro, IJL, Flores, DM 2018, 'Evaluation of antioxidant and nutritional properties of sago (*Metroxylon sagu rottb.*) and its utilization for direct lactic acid production using immobilized enterococcus faecium dmf78', *International Food Research Journal*, vol.25, no.1, hlm.83-91.
- Ekafitri R 2017, 'Pati resisten pada beras: jenis, metode peningkatan, efek untuk kesehatan, dan aplikasinya', *Jurnal Pangan*, vol.26, no.3.
- Ekawati, MA, Suirta, IW, Santi, SR 2017, 'Isolasi dan identifikasi senyawa flavonoid pada daun sembukan (*Paederia foetida L.*) serta uji aktivitasnya sebagai antioksidan', *Jurnal Kimia*, vol.11, no.1, hlm.43-48.
- European Medicines Agency 2016, *Guidelines on the principle of regulatory acceptance of 3Rs (replacement, reduction, refinement) testing approaches*, diakses 22 Februari 2018.
http://www.ema.europa.eu/documents/scientific-guideline/guideline-principles-regulatory-acceptance-3rs-replacement-reduction-refinement-testing-approaches_en.pdf
- Fadiyah, AF, Wardhani, RM, Rahmatika, N, Wijayanti, SPM 2019, 'Eksplorasi potensi ekstrak cair daun kecombrang yang mengandung antioksidan sebagai penetralisir radikal bebas dalam darah petugas SPBU', *Jurnal Litbang Kota Pekalongan*, hlm.15.
- Farid, M, Darwin, E, Sulastris, D 2014, 'Pengaruh hiperglikemia terhadap gambaran histopatologis pulau langerhans mencit', *Jurnal Kesehatan Andalas*, vol.3, no.3, hlm.420-428.
- Fatimah, RN 2015, 'Diabetes melitus tipe 2', *Jurnal Majority*, vol.4, no.5, hlm.93-101.
- Fauziah, A, Marliyati, SA, Kustiyah, L 2017, 'Substitusi tepung kacang merah meningkatkan kandungan gizi, serat pangan, dan kapasitas antioksidan beras analog sorgum', *Jurnal Gizi dan Pangan*, vol.12, no.2, hlm.147-152.
- Federer, WT 2008, *Statistics and society; data collection and interpretation. second edition*, Marcel Dekker, New York.
- Firdaus, J, Sulistyaningsih, E, Subagio, A 2018, 'Research article resistant starch modified cassava flour (mocaf) improves insulin resistance', *Asian Journal of Clinical Nutrition*, vol.10, no.1, hlm.32-36.

- Fitria, L, Muyati, M, Tiraya, CM, Budi, AS 2015, 'Profil reproduksi jantan tikus (*Rattus norvegicus berkenhout, 1769*) galur wistar stadia muda, pradewasa, dan dewasa', *Jurnal Biologi Papua*, vol.7, no.1, hlm.29-36.
- Ganong, WF & Ganong, W 2010, *Review of medical physiology*, Appleton & Lange, Norwalk, hlm.59.
- Giacco, F & Brownlee, M 2010, 'Oxidative stress and diabetic complications', *Circulation Research*, vol.107, no.9, hlm.1058-1070.
- Giacco, R, Vitale, M, Riccardi, G 2016, 'Pasta: role in diet', *The Encyclopedia of Food and Health*, vol.4, hlm.242-245.
- Goñi, I, Garcia-Diz, L, Mañas, E, Saura-Calixto, F 1996, 'Analysis of resistant starch: a method for foods and food products', *Food Chemistry*, vol.56, no.4, hlm.445-449.
- Gower, BA, Bergman, R, Stefanovski, D, Darnell, B, Ovalle, F, Fisher, G, Sweatt, SK, Resuehr, HS, Pelkman, C 2016, 'Baseline insulin sensitivity affects response to high-amylose maize resistant starch in women: a randomized, controlled trial', *Nutrition & metabolism*, vol.13, no.1, hlm.2.
- Gunawijaya, A & Kartawiguna, E 2013, *Penuntun praktikum kumpulan foto mikroskop histologi*, Universitas Trisakti Press, Jakarta.
- Gurjar, HPS 2018, 'Assessment of antidiabetic potential of leaf extract of *Bauhinia variegata linn.* in type-I and type-II diabetes', *International Journal of Green Pharmacy*, vol.12, no.2, hlm.401-409.
- Guyton AC & Hall JE 2015, *Guyton and Hall: textbook of medical physiology*, Saunders Elsevier, Philadelphia.
- Hajiaghaalipour, F, Khalilpourfarshbafi, M, Arya, A 2015, 'Modulation of glucose transporter protein by dietary flavonoids in type 2 diabetes mellitus', *International Journal of Biological Sciences*, vol.11, no.5, hlm.508.
- Hananti, RS 2018, 'Uji aktivitas antidiabetes ekstrak etanol kulit kayu manis (*Cinnamomum burmanii nees ex. bl.*) dibandingkan dengan glibenklamid pada mencit jantan galur swiss webster dengan metode toleransi glukosa', *Jurnal Sains dan Teknologi Farmasi Indonesia*, vol.1, no.1, hlm.13-21
- Haralampu, SG 2000, 'Resistant starch—a review of the physical properties and biological impact of RS3', *Carbohydrate Polymers*, vol.41, no.3, hlm.285-292.

- Hariyanto, B 2014, *Perkembangan teknologi produk pangan berbasis sagu guna mendukung ketersediaan pangan*, BPPT-LIPI, Jakarta.
- Hariyanto, B 2017, 'Penggunaan beras sagu untuk penderita pradiabetes', *Jurnal Pangan*, vol.26, no.2, hlm.127-136.
- Hartman, MD, Minen, RI, Iglesias, AA, Figueroa, CM 2019, 'Cofactor specificity switch on peach glucitol dehydrogenase', *Biochemistry*, vol. 58, no.9, hlm.1287-1294.
- Hau, J & Schapiro, SJ 2013. *Handbook in laboratory animal science: animal models*, CRC Press, Boca Raton.
- Haub, MD, Hubach, KL, Al-tamimi, EK, Ornelas, S, Seib, PA 2010, 'Different types of resistant starch elicit different glucose reponses in humans', *Journal of Nutrition and Metabolism*, hlm.1-4.
- Hausladen, A & Alscher, RG 2017, *Antioxidants in higher plants*, CRC Press, Boca Raton, hlm.1-30.
- Hikmah, N, Yuliet, Y, Khaerati, K 2016, 'Pengaruh pemberian ekstrak daun salam (*Syzygium polyanthum wight.*) Terhadap glibenklamid dalam menurunkan kadar glukosa darah mencit (*Mus musculus*) yang diinduksi aloksan', *Jurnal Farmasi Galenika*, vol.2, no.1, hlm.24-30.
- Homayouni, A, Amini, A, Keshtiban, AK, Mortazavian, AM, Esazadeh, K, Pourmoradian, S 2014, 'Resistant Starch in Food Industry: a changing outlook for consumer and producer', *Starch-Stärke*, vol.66, no.1-2, hlm.102-114.
- Hostettmann, K 2014, *Handbook of chemical and biological plant analytical methods*, John Wiley & Sons, Chichester.
- Irdalisa, I, Safrida, S, Khairil, K, Abdullah, A, Sabri, M 2015, 'Profil kadar glukosa darah pada tikus setelah penyuntikan aloksan sebagai hewan model hiperglikemik', *Jurnal EduBio Tropika*, vol.3, no.1, hlm.25-28.
- Jaiswal, D, Rai, PK, Mehta, S, Chatterji, S, Shukla, S, Rai, DK, Sharma, G, Sharma, B, Watal, G 2013, 'Role of Moringa oleifera in regulation of diabetes-induced oxidative stress', *Asian Pacific Journal of Tropical Medicine*, vol.6, no.6, hlm.426-432.
- Janvier Labs 2019, *Wistar rats*, diakses pada 27 Februari 2019, https://www.janvier-labs.com/en/fiche_produit/wistar_rat/
- Jethinlakhosh JP, Antony A, Pravena P, Doss VA 2016, 'Phytochemical, antioxidant, and free radical scavenging activities of hydro-ethanolic extract

- of aerial parts of *Pothos scandens* L', *Asian Journal of Pharmaceutical and Clinical Research*, vol.9, no.3, hlm.236-239.
- Joseph, OI, Nnabuihe1, ED, Ukoha, U, Ezinwa1, AC 2017, 'The effects of cassava starch on the pancreas of adult wistar rats', *Journal of Medicine, Physiology and Biophysics*, vol.31, hlm.9-15.
- Jyoshna, E & Hymavathi, TV 2017, 'Review of studies on effect of resistant starch supplementation on glucose and insulin', *Journal of Pharmacognosy and Phytochemistry*, vol.6, no.3, hlm.55-58.
- Kaemba, A, Suryanto, E, Mamuaia, CF 2017, 'Physicochemical characteristics and antioxidant activity of rice analog from baruk sago (*Arenga microcarpha*) and purple sweet potatoes (*Ipomea batatas* L. Poiret)', *Jurnal Ilmu dan Teknologi Pangan*, vol.5, no.1, hlm.1-8.
- Kao, KT & Sabin, MA 2016, 'Type 2 diabetes mellitus in children and adolescents', *Australian Family Physician*, vol.45, no.6, p.401.
- Keane, KN, Cruzat, VF, Carlessi, R, Bittencourt, PIHD, Newsholme, P 2015, 'Molecular events linking oxidative stress and inflammation to insulin resistance and β -cell dysfunction', *Oxidative medicine and cellular longevity*, hlm.1-15.
- Kementerian Kesehatan Republik Indonesia 2013, *Riset kesehatan dasar*. Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan.
- Kerimi, A & Williamson, G 2016, 'At the interface of antioxidant signalling and cellular function: key polyphenol effects', *Molecular nutrition & food research*, vol.60, no.8, hlm.1770-1788.
- Kouevi, KK 2013, *A study on moringa oleifera leaves as a supplement to west african weaning foods*, University of Applied Science, Hamburg.
- Kumar, V, Abbas, AK, Aster, J 2013, *Robbins basic pathology*, edisi 9, Elsevier Inc, Singapore.
- Kumar, PK & Mandapaka, RJ 2013, 'Effect of *Moringa oleifera* on blood glucose, LDL level in type II diabetic obese people', *Inovative Journal of Medical and Health Science*, vol.3, no.1, hlm.23-25.
- Kumar, S & Pandey, AK 2013, 'Chemistry and biological activities of flavonoids: an overview', *The Scientific World Journal*, hlm.1-13.
- Kurniawaty, E & Lestari, EE 2016, 'Uji efektivitas daun belimbing wuluh (*Averrhoa bilimbi* L.) sebagai pengobatan diabetes melitus', *Jurnal Majority*, vol.5, no.2, hlm.32-36.

- Kusmiyati, M, Sudaryat, Y, Lutfiah, IA, Rustamsyah, A, Rohdiana, D 2015, 'Aktivitas antioksidan, kadar fenol total, dan flavonoid total dalam teh hijau (*Camellia sinensis*) asal tiga perkebunan jawa barat', *Jurnal Penelitian Teh dan Kina*, vol.18, no.2, hlm.101-106.
- Kusuma, PTWW, Indrianti, N, Ekafitri, R 2013, 'potential of sago plant (*Metroxylon sp.*) to support food security in indonesia', *Jurnal Pangan*, vol.22, no.1, hlm.61-76.
- Kusumawati, D 2004, *Bersahabat dengan hewan coba*, Gajah Mada University Press, Surabaya.
- Laila, W 2018, 'Pengaruh pemberian sago (*Metroxylon sp*) terhadap kadar glukosa darah mencit putih jantan (*Mus musculus*) diabetes melitus', *Jurnal Farmasi dan Kesehatan*, vol.8, no.2, hlm.193-199.
- López, M, Nogueiras, R, Tena-Sempere, M, Diéguez, C 2016, 'Hypothalamic AMPK: a canonical regulator of whole-body energy balance', *Nature Reviews Endocrinology*, vol.12, no.7, hlm.421.
- Mahmoud, AM, Bautista, RJH, Sandhu, MA, Hussein, OE 2019, 'Beneficial effects of citrus flavonoids on cardiovascular and metabolic health', *Oxidative Medicine and Cellular Longevity*, hlm.1-19.
- Malole, MBM & Pramono, CSU 1989, *Penggunaan Hewan-Hewan Percobaan di Laboratorium*, Departemen Pendidikan dan Kebudayaan Direktorat Jenderal Pendidikan Tinggi, Pusat Antar Universitas Bioteknologi, Institut Pertanian Bogor.
- Mans, K & Aburjai, T 2019, 'Assessing the Hypoglycemic Effects of Seed Extract from Celery (*Apium graveolens*) in Alloxan-Induced Diabetic Rats'. *Journal of Pharmaceutical Research International*, vol.26, no.5, hlm.1-10.
- Marzouk, MM 2016, 'Flavonoid constituents and cytotoxic activity of *Erucaria hispanica* (L.) druce growing wild in egypt'. *Arabian Journal Of Chemistry*, vol. 26, no.6, hlm.411-415.
- Mashi, JA, Sa'id, AM, Idris, RI, Aminu, I, Muhammad, AA, Inuwa, IM 2019, 'Persea americana leaf ethyl acetate extract phytochemical, in-vitro antioxidant and in-vivo potentials to mitigate oxidative stress in alloxan-induced hyperglycaemic rats', *Asian Plant Research Journal*, vol.3, no.1, hlm.1-11.
- Metaragakusuma, AP, Katsuya, O, Bai, H 2016. 'An overview of the traditional use of sago for sago-based food industry in indonesia', *KnE Life Sciences*, vol. 3, no. 3, hlm.119-124.

- Miao, X, Gu, Z, Liu, Y, Jin, M, Lu, Y, Gong, Y, Li, L, Li, C 2018, 'The glucagon-like peptide-1 analogue liraglutide promotes autophagy through the modulation of 5'-amp-activated protein kinase in INS-1 β -cells under high glucose conditions', *Peptides*, vol. 100, no.2, hlm.127-139.
- Morrison, DJ & Preston, T 2016, 'Formation of short chain fatty acids by the gut microbiota and their impact on human metabolism', *Gut Microbes*, vol. 7, no. 3, hlm.189-200.
- Mourya, P, 2018, 'In-vitro studies on inhibition of alpha amylase and alpha glucosidase by plant extracts of alternanthera pungens kunth', *Journal of Drug Delivery and Therapeutics*, vol.8, no.6-A, hlm.64-68.
- Mustofa, Yuniastuti, A, Marianti, A, 2012, 'Efek pemberian jus lidah buaya terhadap kadar glukosa darah tikus putih', *Life Science*, vol.1, no.1, hlm.1-24.
- Nasution, DM, Parwata, IMOA, Suirta, IW, Wasudewa, KM 2018, 'Efektifitas ekstrak air daun gaharu (*Gyrinop versteegii*) dalam menurunkan kadar glukosa darah pada tikus wistar hiperglikemia', *Jurnal Media Sains*, vol.2, no.2, hlm.1-20.
- Ndong, M, Uehara, M, Katsumata, SI, Suzuki, K 2007, 'Effects of oral administration of moringa oleifera lam on glucose tolerance in goto-kakizaki and wistar rats', *Journal of Clinical Biochemistry and Nutrition*, vol.40, no.3, hlm. 229-233.
- Neshatdoust, S, Saunders, C, Castle, SM, Vauzour, D, Williams, C, Butler, L, Lovegrove, JA, Spencer, JP 2016, 'High-flavonoid intake induces cognitive improvements linked to changes in serum brain-derived neurotrophic factor: two randomised, controlled trials', *Nutrition and healthy aging*, vol.4, no.1, hlm.81-93.
- Nobre, CP, Raffin, FN, Moura, TF 2005, 'Standardization of extracts from *Momordica charantia* L. (cucurbitaceae) by total flavonoids content determination. acta farm', *Bonaerense*, vol.24, no.4, hlm. 562-566.
- Nugroho, FA, Ginting, RMS, Diana, N 2015, 'Kadar NF-K β pankreas tikus model type 2 diabetes mellitus dengan pemberian tepung susu sapi'. *Indonesian Journal of Human Nutrition*, vol.2, no.2, hlm.91-100.
- Nur, S, Sami, FJ, Wilda, R., Awaluddin, A, Afsari, MIA 2019, 'Korelasi antara kadar total flavonoid dan fenolik dari ekstrak dan fraksi daun jati putih, (*Gmelina arborea roxb.*) terhadap aktivitas antioksidan', *Jurnal Farmasi Galenika*, vol.5, no.1, hlm.33-42.
- Nurrachmawati, I, 2017, *Efek Ekstrak Daun Salam (Syzygium polyanthum) Terhadap Glukosa Darah Sewaktu, Kadar Profil Kolesterol Dan Diabetik*

Kardiomiopati Pada Tikus Diabetes Melitus, Skripsi Program Studi Kedokteran, Universitas Islam Negeri Syarif Hidayatullah.

- Olayaki, LA, Irekpita, JE, Yakubu, MT, Ojo, OO 2015, 'Methanolic extract of *Moringa oleifera* leaves improves glucose tolerance, glycogen synthesis and lipid metabolism in alloxan-induced diabetic rats', *Journal of Basic Clinical Physiology and Pharmacology*, vol.26, no.6, hlm.585-593.
- Ordonio, RL & Matsuoka, M 2016, 'Increasing resistant starch content in rice for better consumer health', *Proceedings of The National Academy of Sciences*, vol.113, no.45, hlm.12616-12618.
- Oyeyinka, AT & Oyeyinka, SA 2016, '*Moringa oleifera* as a food fortificant: recent trends and prospects', *Journal of the Saudi Society of Agricultural Sciences*, vol.2, no.2, hlm.1-30.
- Palguna, IGPA, Sugiyono, S, Haryanto, B 2013, 'Ratio optimization of starch to water and gelatinization temperature to produce resistant starch type iii of sago starch (*Metroxylon sagu*)', *Jurnal Pangan*, vol.22, no.3, hlm.253-262.
- Pangestuti, LE, Fajrin, FA, Holidah, D 2015, 'Ekstrak n-heksana daun maja (*Aegle marmelos*) menurunkan kadar LDL mencit diabetes yang diinduksi aloksan', *Pustaka Kesehatan*, vol.3, no.1, hlm.56-60.
- Perkumpulan Endokrinologi Indonesia (PERKENI) 2015, *Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia*, PB. PERKENI.
- Pinent, M, Castell, A, Baiges, I, Montagut, G, Arola, L, Ardévol, A 2008, 'Bioactivity of flavonoids on insulin-secreting cells', *Comprehensive Reviews in Food Science and Food Safety*, vol.7, no.4, hlm.299-308.
- Pitriya, IA, Rahman, N, Sabang, SM 2017, 'Efek ekstrak buah kelor (*Moringa oleifera*) terhadap penurunan kadar gula darah mencit (*Mus musculus*)', *Jurnal Akademika Kimia*, vol.6, no.1, hlm. 1-10.
- Poprac, P, Jomova, K, Simunkova, M, Kollar, V, Rhodes, CJ, Valko, M 2017, 'Targeting free radicals in oxidative stress-related human diseases', *Trends in pharmacological sciences*, vol.38, no.7, hlm.592-607.
- Prabowo, AF 2012, *Potensi antidiabetes ekstrak kulit kayu suren (Toona sinensis) pada tikus sprague-dawley yang diinduksi aloksan*, Skripsi Program Studi Kimia, Institut Pertanian Bogor.
- Pradini, SA & Pambudi, PPR 2017, 'Uji efek antidiabetik kombinasi ekstrak etanol daun stevia (*Stevia rebaudiana bert.*) dan daun sambiloto (*Andrographis folium*) pada tikus jantan galur wistar yang diinduksi aloksan', *IJMS-Indonesian Journal on Medical Science*, vol.4, no.2, hlm.1-10.

- Pujiastuti, E & Amilia, D 2018, 'Efektivitas ekstrak etanol daun kenikir (*Cosmos caudatus kunth*) terhadap penurunan kadar glukosa darah pada tikus putih galur wistar yang diinduksi aloksan', *Cendekia Journal of Pharmacy*, vol.2, no.1, hlm.16-21.
- Purwaningsih, S, Salamah, E, Sukarno, AYP, Deskawati, E 2013, 'Aktivitas antioksidan dari buah mangrove (*Rhizophora mucronata lamk.*) pada suhu yang berbeda', *Jurnal Pengolahan Hasil Prikanaan Indonesia*, vol.19, no.3, hlm.4-8.
- Qinghu, W, Jinmei, J, Nayintai, D, Narenchaoketu, H, Jingjing, H, Baiyinmuqier, B 2016, 'Anti-inflammatory effects, nuclear magnetic resonance identification and high-performance liquid chromatography isolation of the total flavonoids from artemisia frigida', *Journal of Food and Drug Analysis*, vol.24, no.1, hlm.385-391.
- Rachmawani, NR & Oktarlina, RZ 2017, 'Khasiat pemberian buncis (*Phaseolus vulqaris l.*) sebagai terapi alternatif diabetes melitus tipe 2'. *Jurnal Majority*, vol.6, no.1, hlm.71-76.
- Ramracheya, R, Chapman, C, Chibalina, M, Dou, H, Miranda, C, González, A, Moritoh, Y, Shigeto, M, Zhang, Q, Braun, M, Clark, A 2018, 'GLP-1 suppresses glucagon secretion in human pancreatic alpha-cells by inhibition of p/q-type Ca^{2+} channels', *Physiological Reports*, vol.6, no.17, hlm.13852.
- Rebello, CJ, Johnson, WD, Martin, CK, Han, H, Chu, YF, Bordenave, N, Van Klinken, BJW, O'Shea, M, Greenway, FL 2016, 'Instant oatmeal increases satiety and reduces energy intake compared to a ready-to-eat oat-based breakfast cereal: a randomized crossover trial', *Journal of The American College of Nutrition*, vol.35, no.1, hlm.41-49.
- Reeves, PG, Nielsen, FH, Fahey Jr, GC 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*, vol.123, no.11, hlm 1939-1951.
- Robertson, MD 2012, 'Dietary-resistant starch and glucose metabolism', *Curr Opin Clin Nutr Metab Care*, vol.15, no.2, hlm.362.
- Robertson, MD, Wright, JW, Loizon, E, Debard, C, Vidal, H, Shojaee-Moradie, F 2012, 'Insulin-sensitizing effects on muscle and adipose tissue after dietary fiber intake in men and women with metabolic syndrome', *J Clin Endocrinol Metab*, vol.97, no.3326, hlm.32.
- Rockwood, JL, Anderson, BG, Casamatta, DA 2013, 'Potential uses of *Moringa oleifera* and an examination of antibiotic efficacy conferred by m. oleifera seed and leaf extracts using crude extraction techniques available to under-

- served indigenous populations', *Int. J. Phytotherapy Res*, vol.3, no.1, hlm.61-71.
- Sabuluntika, N, Ayustaningwarno, F 2013, 'Kadar B-karoten, antosianin, isoflavon, dan aktivitas antioksidan pada snack bar ubi jalar kedelai hitam sebagai alternatif makanan selingan penderita diabetes melitus tipe 2', *Journal of Nutrition College*, vol.2, no.4, hlm.689-695.
- Sajilata, MG, Singhal, RS, Kulkarni, PR 2006, 'Resistant starch—a review', *Comprehensive Reviews in Food Science and Food Safety*, vol.5, no.1, hlm.1-17.
- Sastroasmoro, S & Ismael, S 2014, *Dasar-dasar metodologi penelitian klinis edisi ke-5*. Sagung Seto, Jakarta.
- Sayuti, K & Yennina, R 2015, *Antioksidan alami dan sintetik*, Universitas Adalas Press, Padang.
- Sekar, V, Chakraborty, S, Mani, S, Sali, VK, Vasanthi, HR 2019, 'Mangiferin from *Mangifera indica* fruits reduces post-prandial glucose level by inhibiting α -glucosidase and α -amylase activity', *South African Journal of Botany*, vol.120, hlm.129-134.
- Semaan, DG, Igoli, JO, Young, L, Marrero, E, Gray, AI, Rowan, EG 2017, 'In vitro anti-diabetic activity of flavonoids and pheophytins from *Allophylus cominia* sw. on PTP1B, DPPIV, α -glucosidase and α -amylase enzymes', *Journal of Ethnopharmacology*, vol.203, no.2, hlm.39-46.
- Setiarto, RHB, Jenie, BSL, Faridah, DN, Saskiawan, I 2017, 'Kajian peningkatan pati resisten yang terkandung dalam bahan pangan sebagai sumber prebiotik', *Jurnal Ilmu Pertanian Indonesia*, vol.20, no.3, hlm.191-200.
- Setiarto, RHB, Widhyastuti, N, Setiadi, D 2018, 'Peningkatan pati resisten tepung sorgum termodifikasi melalui fermentasi dan siklus pemanasan bertekanan-Pendinginan', *Jurnal Ilmu Pertanian Indonesia*, vol.23, no.1, hlm.10-20.
- Setiati, S, Alwi, I, Sudoyo, AW, Simadibrata, M, Setiyohadi, B, Syam, AF (eds), 2015, *Buku ajar ilmu penyakit dalam*, Jilid II, Edisi V, Interna Publishing, Jakarta.
- Sibuea, SM., Kardhinata, EH, Ilyas, S 2014, 'Identifikasi dan inventarisasi jenis tanaman umbi-umbian yang berpotensi sebagai sumber karbohidrat alternatif di kabupaten serdang bedagai', *Jurnal Agroekoteknologi Universitas Sumatera Utara*, vol.2, no.4, hlm.1408-1418.
- Silverthorn, DU 2015, *Human physiology: an integrated approach*, Pearson Higher Ed, New York.

- Soviana, E, Rachmawati, B, Widyastiti, NS 2014, 'Pengaruh suplementasi β -carotene terhadap kadar glukosa darah dan kadar malondialdehid pada tikus sprague dawley yang diinduksi streptozotocin', *Indonesian Journal of Nutrition*, vol.2, no.2, hlm.41-46.
- Stephen, NM, Wycliffe, AM, Alex, MK, Joseph, NJ, Eliud, NN 2017, 'In vivo antidiabetic activity of aqueous and ethyl acetate leaf extract of *Senna singuena* (delile) in alloxan induced diabetic mice', *The Journal of Phytopharmacology*, vol.6, no.2, hlm.84-92.
- Sudoyo, AW, Setiyohadi, B, Alwi, I, Simadibrata, M, Setiati, S 2014, *Buku Ajar Ilmu Penyakit Dalam*, FKUI, Jakarta
- Sulastri, E, Zubair, MS, Anas, NI, Abidin, S, Hardani, R., Yulianti, R 2018, 'Total phenolic, total flavonoid, quercetin content and antioxidant activity of standardized extract of *Moringa oleifera* leaf from regions with different elevation', *Pharmacognosy Journal*, vol.10, no.6.
- Susanto, ET 2018, 'Pengaruh penambahan minyak sawit dalam proses penanaman nasi pada rice cooker terhadap pembentukan pati resisten 5 untuk penderita diabetes melitus (DM) tipe 2', *Jurnal Sains dan Teknologi Pangan*, vol.3, no.4, hlm.1460-1469.
- Szkudelski, T 2001, 'The mechanism of alloxan and streptozotocin action in β cells of the rat pancreas', *Physiological Research*, vol.50, no.6, hlm.537-546.
- Tangvarasittichai, S 2015, 'Oxidative stress, insulin resistance, dyslipidemia and type 2 diabetes mellitus', *World Journal of Diabetes*, vol.6, no.3, hlm.456.
- Tende, JA, Ezekiel, I, Dikko, AAU, Goji, ADT 2011, 'Effect of ethanolic leaves extract of *Moringa oleifera* on blood glucose level of streptozocin-induced diabeticaand normoglycemic wistar rats', *British Journal of Pharmacology and Toxicology*, vol.2, no.1, hlm.1-4.
- Tundis, R., Bonesi, M, Sicari, V, Pellicanò, TM, Tenuta, MC, Leporini, M, Menichini, F, Loizzo, MR 2016, '*Poncirus trifoliata* (L.) Raf.: Chemical composition, antioxidant properties and hypoglycaemic activity via the inhibition of α -amylase and α -glucosidase enzymes', *Journal of Functional Foods*, vol.25, hlm.477-485.
- Ulya, LF, Sugiarto, S, Prayitno, A 2018, 'Pengaruh tepung daun kelor (*Moringa oleifera*) terhadap kadar glukosa darah dan malondialdehid pada tikus diabetes melitus tipe 2', *Jurnal Gizi dan Kesehatan*, vol.3, no.1, hlm.28-37.
- Upa, FT, Saroyo, S, Katili, DY 2017, 'Komposisi pakan tikus ekor putih (*Maxomys hellwandii*) di kandang', *Jurnal Ilmiah Sains*, vol.17, no.1, hlm.7-12.

- Uthumporn, U, Wahidah, N, Karim, AA 2014, 'Physicochemical properties of starch from sago (*Metroxylon sagu*) palm grown in mineral soil at different growth stages', *IOP Publishing*, vol.62, no.1, hlm.12026.
- Valent, FA, Parwata, IMOA, Rita, WS 2017, 'Potensi ekstrak etanol daun kelor (*Moringa oleifera*) terhadap penurunan kadar histamin pada ikan lemuru (*Sardinella longiceps*)', *Jurnal Media Sains*, vol.1, no.2, hlm.57-62.
- Vanessa, M, Munhoza, RL, José RP, João, AC, Zequic, E, Leite, M, Gisely, C, Lopesa, JP, Melloa 2014, 'Extraction of flavonoids from tagetes patula: process optimization and screening for biological activity', *Rev Bras Farmacogn*, vol.24, no.5, hlm.576-583.
- Vargas, E & Sepulveda, MAC 2018, *Biochemistry, insulin, metabolic effect*, StatPearls Publishing.
- Vargas-Aguilar, P 2016, 'Flours and starches made from cassava (*yuca*), yam, sweet potatoes and ñampi: functional properties and possible applications in the food industry', *Revista Tecnología En Marcha*, vol.29, hlm.86-94.
- Venkataraman, A, Sieber, JR, Schmidt, AW, Waldron, C, Theis, KR, Schmidt, TM 2016, 'Variable responses of human microbiomes to dietary supplementation with resistant starch', *Microbiome*, vol.4, no.1, hlm.33.
- Villarruel-López, A, Mora, DALL, Vázquez-Paulino, OD, Puebla-Mora, AG, Torres-Vitela, MR, Guerrero-Quiroz, LA, Nuño, K 2018, 'Effect of *Moringa oleifera* consumption on diabetic rats', *BMC Complementary and Alternative Medicine*, vol.18, no.1, hlm.127.
- Vinayagam, R & Xu, B 2015, 'Antidiabetic properties of dietary flavonoids: a cellular mechanism review', *Nutrition & Metabolism*, vol.12, no.1, hlm.60.
- Visuthranukul, C, Sirimongkol, P, Prachansuwan, A, Pruksananonda, C, Chomtho, S 2015, 'Low-glycemic index diet may improve insulin sensitivity in obese children', *Pediatric Research*, vol.78, no.5, hlm.567.
- Wahjuningsih, SB, Haslina, SU, Wijanarka, A 2018, 'Hypoglycemic effect of analog rice made from modified cassava flour (mocaf), arrowroot flour and kidney bean flour on stz-na induced diabetic rats', *Asian Journal of Clinical Nutrition*, vol.10, no.1, hlm.8-15.
- Wahjuningsih, SB, Marsono, Y, Haryanto, B, Praseptiangga, D 2016, *Karakterisasi sifat fungsional dan identifikasi nilai indeks glikemik serta sifat hipoglikemik beras analog berbasis pati sagu (Metroxylon sp) dan kacang merah (Phaseolus vulgaris)*, Laporan Penelitian Program Doktoral Teknologi Pangan, Universitas Sebelas Maret Surakarta.

- Wahjuningsih, SB, Septiani, AR, Haslina, H 2018, 'Organoleptik cereal dari tepung beras merah (*Oryza nivara linn.*) dan tepung kacang merah (*Phaseolus vulgaris linn.*)', *Jurnal Litbang Provinsi Jawa Tengah*, vol.16, no.2, hlm.131-142.
- Walde, SS, Dohle, C, Schott-Ohly, P, Gleichmann, H 2002, 'Molecular target structures in alloxan-induced diabetes in mice', *Life Sciences*, vol.71, no.14, hlm.1681-1694.
- Wang, L, Liu, Y, Luo, Y, Huang, K, Wu, Z 2018, 'Quickly screening for potential α -glucosidase inhibitors from guava leaves tea by bioaffinity ultrafiltration coupled with HPLC-esi-tof/ms method', *Journal of Agricultural And Food Chemistry*, vol.66, no.6, hlm.1576-1582.
- Waspadji, S 2015, *Komplikasi kronik diabetes: mekanisme terjadinya, diagnosis dan strategi pengelolaan*. Buku Ajar Ilmu Penyakit Dalam, Jilid III, Edisi 6, Jakarta, Pusat Penerbitan Departemen Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Indonesia.
- Watson, J 2010, *Animal Welfare*, diakses 22 Februari 2019. <http://ocw.jhsph.edu/courses/HumaneScience/PDFs/CAATLecture8.pdf>
- Widagdha, S & Nisa, FC 2014, 'Pengaruh penambahan sari anggur (*Vitis vinifera L.*) dan lama fermentasi terhadap karakteristik fisiko kimia yoghurt', *Jurnal Pangan dan Agroindustri*, vol.3, no.1, hlm.248-258.
- Widyaningsih, TD, Wijayanti, N, Nugrahini, NIP 2017, *Pangan fungsional: aspek kesehatan, evaluasi, dan regulasi*. Universitas Brawijaya Press. Malang.
- Wijaya, CH, Sutisna, N, Nurtama, B, Muhandri, T, Indariani, S 2018, 'Development of java tea based functional drink: scale-up formula optimization based on the sensory and antioxidant properties', *Journal of Applied Pharmaceutical Science*, vol.8, no.9, hlm.055-060.
- Williams, L & Wilkins 2010, *Atlas of pathophysiology, third edition*, Wolters Kluwers Health, USA.
- Winarno, FG 2002, *Kimia pangan dan gizi*, PT Gramedia Pustaka Utama, Jakarta.
- Winarno, FG & Hariyadi, P 2017, *The Indonesian sago palm unraveling its potential for national development*, PT Gramedia Pustaka Utama, Jakarta.
- World Health Organization (WHO) 2017, *Diabetes fact sheet*, Geneva (CH): Switzerland.
- Wu, Y, Ding, Y, Tanaka, Y, Zhang, W 2014, 'Risk factors contributing to type 2 diabetes and recent advances in the treatment and prevention', *International Journal of Medical Sciences*, vol.11, no.11, hlm.1185.

- Wulan, W, Yudistira, A, Rotinsulu, H 2019, 'Uji aktivitas antioksidan dari ekstrak etanol daun *Mimosa pudica* linn. menggunakan metode DPPH, *Pharmacon*, vol.8, no.1. hlm.106-113.
- Yalçın, T, Al, A, Rakıcioğlu, N 2017, 'The effects of meal glycemic load on blood glucose level of adults with different body mass indexes', *Indian Journal of Endocrinology And Metabolism*, vol.21, no.1, hlm.71.
- Yuliani, H, Yuliana, ND, Budijanto, S 2015, 'Formulasi mi kering sagu dengan substitusi tepung kacang hijau', *Agritech*, vol.35, no.4, hlm.387-395.
- Yulianingtyas, A & Kusmartono, B 2016, 'Optimasi volume pelarut dan waktu maserasi pengambilan flavonoid daun belimbing wuluh (*Averrhoa bilimbi* L.). *Jurnal Teknik Kimia*, vol.10, no.2, hlm.58-64.
- Yulianti, R 2014, 'Uji aktivitas jamu gendong kudu laos (*Morinda citrifolia* L.; *Alpinia galanga* L.) sebagai antidiabetes pada tikus yang diinduksi streptozotocin', *Jurnal Mahasiswa Farmasi Fakultas Kedokteran Universitas Tanjungpura*, vol.1, no.1, hlm.1-9.
- Zaccardi, F, Webb, DR, Yates, T & Davies, MJ 2016, 'Pathophysiology of type 1 and type 2 diabetes mellitus: a 90-year perspective', *Postgraduate Medical Journal*, vol.92, no.1084, hlm.63-69.
- Zahra, F, Budhiarta, AA, Pangkahila, W 2017, 'Pemberian ekstrak daun cincau (*Mesona palustris*) oral meningkatkan jumlah sel β pankreas dan menurunkan gula darah puasa pada tikus putih (*Rattus norvegicus*) jantan galur wistar diabetes', *Jurnal E-Biomedik*, vol.5, no.1, hlm.1-6.
- Zakaria, Thamrin, A., Lestari, RS, Hartono, R 2013, 'Pemanfaatan tepung kelor (*Moringa oleifera*) dalam formulasi pembuatan makanan tambahan untuk balita gizi kurang', *Media Gizi Pangan*, vol.15, hlm.1-6.
- Zhang, H & Jin, Z 2011, 'Preparation of resistant starch by hydrolysis of maize starch with pullulanase', *Carbohydrate Polymers*, vol.83, no.2, hlm.865-867.
- Zhou J, Keenan MJ, Keller J, Fernandez-Kim SO, Pistell PJ, Tulley RT 2012, 'Tolerance, fermentation, and cytokine expression in healthy aged male c57bl/6 j mice fed resistant starch', *Molecular Nutrition and Food Research*, vol.56, no.3, hlm.515-518.