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DAFTAR PUSTAKA

AACC. (2000). *Approved methods of the AACC* (10th ed.). American Association of Cereal Chemists.

Abboud, A. M., Rubenthaler, G. L., & Hoseney, R. C. (1985). Effect of fat and sugar in sugar-snap cookies and evaluation of tests to measure cookie flour quality. *Cereal Chemistry*, *62*(2), 124–129.

Adebiyi, J. A., Obadina, A. O., Mulaba-Bafubiandi, A. F., Adebo, O. A., & Kayitesi, E. (2016). Effect of fermentation and malting on the microstructure and selected physicochemical properties of pearl millet (Pennisetum glaucum) flour and biscuit. *Journal of Cereal Science*, *70*, 132–139. https://doi.org/10.1016/j.jcs.2016.05.026

Adeyeye, S. A. O., Adebayo-Oyetoro, A. O., & Omoniyi, S. A. (2017). Quality and sensory properties of maize flour cookies enriched with soy protein isolate. *Cogent Food and Agriculture*, *3*(1). https://doi.org/10.1080/23311932.2017.1278827

Ahn, H. J., Kim, J. H., & Ng, P. K. W. (2005). Functional and thermal properties of wheat, barley, and soy flours and their blends treated with a microbial transglutaminase. *Journal of Food Science*, *70*(6), c380–c386. https://doi.org/10.1111/j.1365-2621.2005.tb11433.x

Akesowan, A. (2016). Influence of konjac flour on foaming properties of milk protein concentrate and quality characteristics of gluten-free cookie. *International Journal of Food Science and Technology*, *51*(7), 1560–1569. https://doi.org/10.1111/ijfs.13125

Al-Ghazzewi, F. H., Khanna, S., Tester, R. F., & Piggott, J. (2007). The potential use of hydrolysed konjac glucomannan as a prebiotic. *Journal of the Science of Food and Agriculture*, *87*, 1758–1766.

Ali, M. A. M., Tinay, A. H. E., Elkhalifa, A. E. O., Mallasy, L. O., & Babiker, E. E. (2012). Effect of Different Supplementation Levels of Soybean Flour on Pearl Millet Functional Properties. *Food and Nutrition Sciences*, *3*, 1–6. https://doi.org/http://dx.doi.org/10.4236/fns.2012.31001

Allan, M. C., Rajwa, B., & Mauer, L. J. (2018). Effects of sugars and sugar alcohols on the gelatinization temperature of wheat starch. *Food Hydrocolloids*, *84*, 593–607. https://doi.org/10.1016/j.foodhyd.2018.06.035

Anggela, Harmayani, E., Setyaningsih, W., & Wichienchot, S. (2022). Prebiotic effect of porang oligo-glucomannan using fecal batch culture fermentation. *Food Science and Technology (Brazil)*, *42*, 1–7. https://doi.org/10.1590/fst.06321

Anggraeni, A. A., Handayani, T. H. W., & Palupi, S. (2017a). Physical and Sensory Properties of Gluten-Free Modified Cassava Flour-Based Cookies. *The 7th*

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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International Seminar on Tropical Animal Production, 387–394. https://journal.ugm.ac.id/istapproceeding/article/view/29849

Anggraeni, A. A., Handayani, T. H. W., & Palupi, S. (2017b). Sensory characteristic of gluten-free popular Indonesian cookies. *Advances in Social Science, Education and Humanities Research, 1st International Conference on Technology and Vocational Teachers (ICTVT 2017)*, 8–11. https://doi.org/https://doi.org/10.2991/ictvt-17.2017.3

AOAC. (2000). *Official methods of analysis of AOAC International* (14th ed.). Association of Official Analytical Chemists.

Arepally, D., Reddy, R. S., Goswami, T. K., & Datta, A. K. (2020). Biscuit baking: A review. *LWT - Food Science and Technology*, *131*, 109726. https://doi.org/10.1016/j.lwt.2020.109726

Ariestanti, C. A., Seechamnanturakit, V., Harmayani, E., & Wichienchot, S. (2019). Optimization on production of konjac oligo-glucomannan and their effect on the gut microbiota. *Food Science and Nutrition*, *7*(2), 788–796. https://doi.org/10.1002/fsn3.927

Arufe, S., Sineiro, J., & Moreira, R. (2019). Determination of thermal transitions of gluten-free chestnut flour doughs enriched with brown seaweed powders and antioxidant properties of baked cookies. *Heliyon*, *5*(l), e01805. https://doi.org/10.1016/j.heliyon.2019.e01805

Asadi, S. Z., Khan, M. A., & Chamarthy, R. V. (2021). Development and quality evaluation of cookies supplemented with concentrated fiber powder from chiku (Manilkara zapota L.). *Journal of Food Science and Technology*, *58*(5), 1839–1847. https://doi.org/10.1007/s13197-020-04695-w

Atkinson, G. (2011). Fats and oils as biscuit ingredients. In *Manley's Technology of Biscuits, Crackers and Cookies* (Fourth, pp. 160–180). Wodhead Publishing Limited.

Ayyappan, P., Abirami, A., Anbuvahini, N. A., Kumaran, P. S. T., Naresh, M., Malathi, D., & Antony, U. (2015). Physicochemical properties of cookies enriched with xylooligosaccharides. *Food Science and Technology International*, *22*(5), 420–428. https://doi.org/10.1177/1082013215617567

Aziah, A. A. N., Ho, L. H., Abidin, N. S. A., & Bhat, R. (2012). Quality evaluation of steamed wheat bread substituted with green banana flour. *International Food Research Journal*, *19*(3), 869–876. https://doi.org/10.13140/2.1.3178.5607

Badan Pusat Statistik. (2021). *Impor Biji Gandum dan Meslin Menurut Negara Asal Utama, 2010-2020*. https://www.bps.go.id/statictable/2019/02/14/2016/impor-biji-gandum-dan-meslin-menurut-negara-asal-utama-2010-2017.html

Badan Standarisasi Nasional Indonesia. (2018). *SNI 2973:2018 Biskuit*.

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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https://bsn.go.id/

Bahaji, A., Li, J., Sánchez-López, Á. M., Baroja-Fernández, E., Muñoz, F. J., Ovecka, M., Almagro, G., Montero, M., Ezquer, I., Etxeberria, E., & Pozueta-Romero, J. (2014). Starch biosynthesis, its regulation and biotechnological approaches to improve crop yields. *Biotechnology Advances*, *32*(1), 87–106. https://doi.org/10.1016/j.biotechadv.2013.06.006

Balet, S., Guelpa, A., Fox, G., & Manley, M. (2019). Rapid Visco Analyser (RVA) as a Tool for Measuring Starch-Related Physiochemical Properties in Cereals: a Review. *Food Analytical Methods*, *12*(10), 2344–2360. https://doi.org/10.1007/s12161-019-01581-w

Baltsavias, A., Jurgens, A., & Van Vliet, T. (1999). Rheological properties of short doughs at large deformation. *Journal of Cereal Science*, *29*(1), 33–42. https://doi.org/10.1006/jcrs.1998.0219

Behera, S. S., & Ray, R. C. (2016). Konjac glucomannan, a promising polysaccharide of Amorphophallus konjac K. Koch in health care. *International Journal of Biological Macromolecules*, *92*, 942–956. https://doi.org/10.1016/j.ijbiomac.2016.07.098

Behera, S. S., & Ray, R. C. (2017). Nutritional and potential health benefits of konjac glucomannan, a promising polysaccharide of elephant foot yam, Amorphophallus konjac K. Koch: A review. *Food Reviews International*, *33*(1), 22–43. https://doi.org/10.1080/87559129.2015.1137310

Belorio, M., Sahagún, M., & Gómez, M. (2019). Influence of flour particle size distribution on the quality of maize gluten-free cookies. *Foods*, *8*(2), 83. https://doi.org/10.3390/foods8020083

Bemiller, J. N. (2011). Pasting, paste, and gel properties of starch-hydrocolloid combinations. *Carbohydrate Polymers*, *86*(2), 386–423. https://doi.org/10.1016/j.carbpol.2011.05.064

Bernussi, A. L. M., Chang, Y. K., & Martínez-Bustos, F. (1998). Effects of production by microwave heating after conventional baking on moisture gradient and product quality of biscuits (cookies). *Cereal Chemistry*, *75*(5), 606–611. https://doi.org/10.1094/CCHEM.1998.75.5.606

Biddle, A., Stewart, L., Blanchard, J., & Leschine, S. (2013). Untangling the Genetic Basis of Fibrolytic Specialization by Lachnospiraceae and Ruminococcaceae in Diverse Gut Communities. *Diversity*, *5*, 627–640. https://doi.org/10.3390/d5030627

Boulos, N. N., Greenfield, H., & Wills, R. B. H. (2000). Water holding capacity of selected soluble and insoluble dietary fibre. *International Journal of Food Properties*, *3*(2), 217–231. https://doi.org/10.1080/10942910009524629

Boz, H. (2019). Effect of flour and sugar particle size on the properties of cookie dough and cookie. *Czech Journal of Food Sciences*, *37*(2), 120–127.

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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https://doi.org/10.17221/161/2017-CJFS

Callahan, B. J., McMurdie, P. J., Rosen, M. J., Han, A. W., Johnson, A. J. A., & Holmes, S. P. (2016). DADA2: High resolution sample inference from Illumina amplicon data. *Nature Methods*, *13*(7), 581–583. https://doi.org/10.1038/nmeth.3869

Canalis, M. S. B., León, A. E., & Ribotta, P. D. (2019). Incorporation of dietary fiber on the cookie dough. Effects on thermal properties and water availability. *Food Chemistry*, *271*, 309–317. https://doi.org/10.1016/j.foodchem.2018.07.146

Canalis, M. S. B., Valentinuzzi, M. C., Acosta, R. H., León, A. E., & Ribotta, P. D. (2018). Effects of Fat and Sugar on Dough and Biscuit Behaviours and their Relationship to Proton Mobility Characterized by TD-NMR. *Food and Bioprocess Technology*, *11*(5), 953–965. https://doi.org/10.1007/s11947-018-2063-z

Cantu-Jungles, T. M., & Hamaker, B. R. (2023). Tuning Expectations to Reality: Don't Expect Increased Gut Microbiota Diversity with Dietary Fiber. *The Journal of Nutrition*, *153*(11), 3156–3163. https://doi.org/10.1016/j.tjnut.2023.09.001

Cao, Y., Dong, Q., Wang, D., Zhang, P., Liu, Y., & Niu, C. (2022). Genome analysis microbiomeMarker: an R/Bioconductor package for microbiome marker identification and visualization. *Bioinformatics*, *38*(16), 4027–4029. https://doi.org/10.1093/bioinformatics/btac438

Cappa, C., Kelly, J. D., & Ng, P. K. W. (2018). Seed characteristics and physicochemical properties of powders of 25 edible dry bean varieties. *Food Chemistry*, *253*, 305–313. https://doi.org/10.1016/j.foodchem.2018.01.048

Cappa, C., Kelly, J. D., & Ng, P. K. W. (2020). Baking performance of 25 edible dry bean powders: Correlation between cookie quality and rapid test indices. *Food Chemistry*, *302*, 125338. https://doi.org/10.1016/j.foodchem.2019.125338

Capriles, V. D., Soares, R. A. M., Pinto, M. E. M., & Areas, J. A. G. (2009). Effect of fructans-based fat replacer on chemical composition, starch digestibility and sensory acceptability of corn snacks. *International Journal of Food Science & Technology*, *44*, 1895–1901. https://doi.org/10.1111/j.1365-2621.2009.01915.x

Carroll, I. M., Ringel-Kulka, T., Siddle, J. P., & Ringel, Y. (2012). Alterations in composition and diversity of the intestinal microbiota in patients with diarrhea-predominant irritable bowel syndrome. *Neurogastroenterology and Motility*, *24*(6), 521–530. https://doi.org/10.1111/j.1365-2982.2012.01891.x

Cesic, D., Mihic, L. L., Ozretic, P., Lojkic, I., Buljan, M., Situm, M., Zovak, M., Vidovic, D., Mijic, A., Galic, N., & Andrasevic, A. T. (2023). Association of

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Gut Lachnospiraceae and Chronic Spontaneous Urticaria. *Life*, *13*(1280), 1–15. https://doi.org/10.3390/life13061280

Chandra, S., & Samsher. (2013). Assessment of functional properties of different flours. *African Journal of Agricultural Research*, *8*(38), 4849–4852. https://doi.org/10.5897/AJAR2013.6905

Cheang, K. U., Chen, C. M., Chen, C. Y. O., Liang, F. Y., Shih, C. K., & Li, S. C. (2017). Effects of Glucomannan Noodle on Diabetes Risk Factors in Patients with Metabolic Syndrome: A Double-Blinded, Randomized Crossover Controlled Trial. *Journal of Food and Nutrition Research*, *5*(8), 622–628. https://doi.org/10.12691/jfnr-5-8-13

Chen, H. L., Cheng, H. C., Liu, Y. J., Liu, S. Y., & Wu, W. T. (2006). Konjac acts as a natural laxative by increasing stool bulk and improving colonic ecology in healthy adults. *Nutrition*, *22*(11–12), 1112–1119. https://doi.org/10.1016/j.nut.2006.08.009

Cheng, Y. F., & Bhat, R. (2016). Functional, physicochemical and sensory properties of novel cookies produced by utilizing underutilized jering (Pithecellobium jiringa Jack.) legume flour. *Food Bioscience*, *14*, 54–61. https://doi.org/10.1016/j.fbio.2016.03.002

Chevallier, S., Colonna, P., Della Valle, G., & Lourdin, D. (2000). Contribution of major ingredients during baking of biscuit dough systems. *Journal of Cereal Science*, *31*(3), 241–252. https://doi.org/10.1006/jcrs.2000.0308

Cho, S., & Finocchiaro, T. (2010). *Handbook of Prebiotics and Probiotics Ingredients. Health Benefits and Food Applications* (First). CRC Press, Taylor Francis Group.

Christ-Ribeiro, A., Chiattoni, L. M., Mafaldo, C. R. F., Badiale-Furlong, E., & Souza-Soares, L. A. de. (2021). Fermented rice-bran by Saccharomyces cerevisiae: Nutritious ingredient in the formulation of gluten-free cookies. *Food Bioscience*, *40*, 100859. https://doi.org/10.1016/j.fbio.2020.100859

Coffmann, C. W., & Garcia, V. V. (1977). Functional properties and amino acid content of a protein isolate from mung bean flour. *International Journal of Food Science and Technology*, *12*, 473–484. https://doi.org/10.1111/j.1365-2621.1977.tb00132.x

Conforti, F. D., & Archilla, L. (2001). Evaluation of a maltodextrin gel as a partial replacement for fat in a high-ratio white-layer cake. *International Journal of Consumer Studies*, *25*, 238–245. https://doi.org/10.1046/j.1470-6431.2001.00178.x

Consumi, M., Tamasi, G., Pepi, S., Leone, G., Bonechi, C., Magnani, A., Donati, A., & Rossi, C. (2022). Analytical composition of flours through thermogravimetric and rheological combined methods. *Thermochimica Acta*, *711*, 179204. https://doi.org/10.1016/j.tca.2022.179204

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Conterno, L., Fava, F., Viola, R., & Tuohy, K. M. (2011). Obesity and the gut microbiota: Does up-regulating colonic fermentation protect against obesity and metabolic disease? *Genes and Nutrition*, *6*(3), 241–260. https://doi.org/10.1007/s12263-011-0230-1

Coultate, T. P. (2009). *Food: The Chemistry of its Components* (Fourth). Royal Society of Chemistry. https://doi.org/10.1016/0144-8617(92)90070-7

Curti, E., Federici, E., Diantom, A., Carini, E., Pizzigalli, E., Wu Symon, V., Pellegrini, N., & Vittadini, E. (2018). Structured emulsions as butter substitutes: effects on physicochemical and sensory attributes of shortbread cookies. *Journal of the Science of Food and Agriculture*, *98*(10), 3836–3842. https://doi.org/10.1002/jsfa.8899

Dai, S., Corke, H., & Shah, N. P. (2016). Utilization of konjac glucomannan as a fat replacer in low-fat and skimmed yogurt. *Journal of Dairy Science*, *99*(9), 7063–7074. https://doi.org/10.3168/jds.2016-11131

Dai, S., Jiang, F., Corke, H., & Shah, N. P. (2018). Physicochemical and textural properties of mozzarella cheese made with konjac glucomannan as a fat replacer. *Food Research International*, *107*, 691–699. https://doi.org/10.1016/j.foodres.2018.02.069

Davani-Davari, D., Negahdaripour, M., Karimzadeh, I., Seifan, M., Mohkam, M., Masoumi, S. J., Berenjian, A., & Ghasemi, Y. (2019). Prebiotics: Definition, types, sources, mechanisms, and clinical applications. *Foods*, *8*(3), 1–27. https://doi.org/10.3390/foods8030092

Davidson, I. (2016). *Biscuit Baking Technology: Processing and Engineering Manual* (Second). Academic Press, Elsevier.

Davidson, I. (2023). *Biscuit Baking Technology: Processing and Engineering Manual* (Third). Academic Press.

Deehan, E. C., Yang, C., Perez-Muñoz, M. E., Zhang, Z., Nguyen, N. K., Cheng, C. C., Triador, L., Bakal, J. A., & Walter, J. (2020). Precision Microbiome Modulation with Discrete Dietary Fiber Structures Directs Short-Chain Fatty Acid Production. *Cell Host and Microbe*, *27*(3), 389-404.e6. https://doi.org/10.1016/j.chom.2020.01.006

Deng, J., Zhong, J., Long, J., Zou, X., Wang, D., Song, Y., Zhou, K., Liang, Y., Huang, R., Wei, X., Li, M., & Sun, Y. (2020). Hypoglycemic effects and mechanism of different molecular weights of konjac glucomannans in type 2 diabetic rats. *International Journal of Biological Macromolecules*, *165*, 2231–2243. https://doi.org/10.1016/j.ijbiomac.2020.10.021

Devi, A., & Khatkar, B. S. (2016). Physicochemical, rheological and functional properties of fats and oils in relation to cookie quality: a review. *Journal of Food Science and Technology*, *53*(10), 3633–3641. https://doi.org/10.1007/s13197-016-2355-0

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Dhal, S., Anis, A., Shaikh, H. M., Alhamidi, A., & Pal, K. (2023). Effect of Mixing Time on Properties of Whole Wheat Flour-Based Cookie Doughs and Cookies. *Foods*, *12*(5), 941. https://doi.org/10.3390/foods12050941

Díaz, A., García, M. A., & Dini, C. (2022). Jerusalem artichoke flour as food ingredient and as source of fructooligosaccharides and inulin. *Journal of Food Composition and Analysis*, *114*, 104863. https://doi.org/10.1016/j.jfca.2022.104863

Dixon, P. (2003). VEGAN, a package of R functions for community ecology. *Journal of Vegetation Science*, *14*(6), 927–930. https://www.jstor.org/stable/3236992

Donmez, D., Pinho, L., Patel, B., Desam, P., & Campanella, O. H. (2021). Characterization of starch–water interactions and their effects on two key functional properties: starch gelatinization and retrogradation. *Current Opinion in Food Science*, *39*, 103–109. https://doi.org/10.1016/j.cofs.2020.12.018

Douglas, L. C., & Sanders, M. E. (2008). Probiotics and Prebiotics in Dietetics Practice. *Journal of the American Dietetic Association*, *108*(3), 510–521. https://doi.org/10.1016/j.jada.2007.12.009

Drakos, A., Andrioti-Petropoulou, L., Evageliou, V., & Mandala, I. (2019). Physical and textural properties of biscuits containing jet milled rye and barley flour. *Journal of Food Science and Technology*, *56*(1), 367–375. https://doi.org/10.1007/s13197-018-3497-z

Duyvejonck, A. E., Lagrain, B., Dornez, E., Delcour, J. A., & Courtin, C. M. (2012). Suitability of solvent retention capacity tests to assess the cookie and bread making quality of European wheat flours. *LWT - Food Science and Technology*, *47*(1), 56–63. https://doi.org/10.1016/j.lwt.2012.01.002

Elias, S. L., & Innis, S. M. (2002). Bakery foods are the major dietary source of trans-fatty acids among pregnant women with diets providing 30 percent energy from fat. *Journal of the American Dietetic Association*, *102*(1), 46–51. https://doi.org/10.1016/S0002-8223(02)90015-5

Fessas, D., & Schiraldi, A. (2001). Water properties in wheat flour dough. I: Classical thermogravimetry approach. *Food Chemistry*, *72*(2), 237–244. https://doi.org/10.1016/S0308-8146(00)00220-X

Franck, A. (2002). Technological functionality of inulin and oligofructose. *British Journal of Nutrition*, *87*(Suppll. 2), S287–S291. https://doi.org/10.1079/BJN/2002550

Fu, J., Mulvaney, S. J., & Cohen, C. (1997). Effect of added fat on the rheological properties of wheat flour doughs. *Cereal Chemistry*, *74*(3), 304–311. https://doi.org/10.1094/CCHEM.1997.74.3.304

Fusco, W., Lorenzo, M. B., Cintoni, M., Porcari, S., Rinninella, E., Kaitsas, F.,

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Lener, E., Mele, M. C., Gasbarrini, A., Collado, M. C., Cammarota, G., & Ianiro, G. (2023). Short-Chain Fatty-Acid-Producing Bacteria: Key Components of the Human Gut Microbiota. *Nutrients*, *15*, 2211. https://doi.org/10.3390/nu15092211

Gama, D. B., Harmayani, E., Lestari, L. A., & Huriyati, E. (2020). Comparison of chemical properties, glycemic index , and glycemic load, between arrowroot (Maranta arundinaceae) cookies containing glucomannan extract with palm sugar addition. *BIO Web of Conferences*, *28*, 03002. https://doi.org/10.1051/bioconf/20202803002

Geraldo, N. F. (2020). *Physico-chemical and sensory properties of kluiklui supplemented with porang glucomannan and banana flour*. Universitas Gadjah Mada.

Ghoshal, G., & Kaushik, P. (2020). Development of soymeal fortified cookies to combat malnutrition. *Legume Science*, *2*(3), e43. https://doi.org/10.1002/leg3.43

Ghotra, B. S., Dyal, S. D., & Narine, S. S. (2002). Lipid shortenings: A review. *Food Research International*, *35*(10), 1015–1048. https://doi.org/10.1016/S0963-9969(02)00163-1

Gibson, G. R., Hutkins, R., Sanders, M. E., Prescott, S. L., Reimer, R. A., Salminen, S. J., Scott, K., Stanton, C., Swanson, K. S., Cani, P. D., Verbeke, K., & Reid, G. (2017). Expert consensus document: The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of prebiotics. *Nature Reviews Gastroenterology and Hepatology*, *14*(8), 491–502. https://doi.org/10.1038/nrgastro.2017.75

Gibson, G. R., & Roberfroid, M. B. (2008). *Handbook of prebiotics* (First). CRC Press, Taylor Francis Group.

Gisslen, W. (2013). *Professional Baking* (Sixth). John Wiley & Sons.

Glicksman, M. (2019). *Food Hydrocolloids Volume III*. CRC Press, Taylor Francis Group.

Gökmen, V., Açar, Ö. Ç., Serpen, A., & Morales, F. J. (2008). Effect of leavening agents and sugars on the formation of hydroxymethylfurfural in cookies during baking. *European Food Research and Technology*, *226*(5), 1031–1037. https://doi.org/10.1007/s00217-007-0628-6

Gu, X., Campbell, L. J., & Euston, S. R. (2009). Effects of different oils on the properties of soy protein isolate emulsions and gels. *Food Research International*, *42*(8), 925–932. https://doi.org/10.1016/j.foodres.2009.04.015

Gu, X., Sim, J. X. Y., Lee, W. L., Cui, L., Low, G., Eric, J., Teh, Y. E., Zhang, A., Armas, F., Chandra, F., Chen, H., & Zhao, S. (2022). Gut Ruminococcaceae levels at baseline correlate with risk of antibiotic-associated diarrhea. *ISCIENCE*, *25*(1), 103644. https://doi.org/10.1016/j.isci.2021.103644

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Gulia, N., Dhaka, V., & Khatkar, B. S. (2014). Instant Noodles: Processing, Quality, and Nutritional Aspects. *Critical Reviews in Food Science and Nutrition*, *54*(10), 1386–1399. https://doi.org/10.1080/10408398.2011.638227

Gunawan, S., Widjaja, T., Zullaikah, S., Ernawati, L., Istianah, N., Aparamarta, H. W., & Prasetyoko, D. (2015). Effect of fermenting cassava with Lactobacillus plantarum, Saccharomyces cereviseae, and Rhizopus oryzae on the chemical composition of their flour. *International Food Research Journal*, *22*(3), 1280–1287. http://ifrj.upm.edu.my/22 (03) 2015/(55).pdf

Guzman, C., Mondal, S., Govindan, V., Autrique, J. E., Posadas-Romano, G., Cervantes, F., Crossa, J., Vargas, M., Singh, R. P., & Pena, R. J. (2016). Use of rapid tests to predict quality traits of CIMMYT bread wheat genotypes grown under different environments. *LWT - Food Science and Technology*, *69*, 327–333. https://doi.org/10.1016/j.lwt.2016.01.068

Handa, C., Goomer, S., & Siddhu, A. (2012). Physicochemical properties and sensory evaluation of fructoligosaccharide enriched cookies. *Journal of Food Science and Technology*, *49*(2), 192–199. https://doi.org/10.1007/s13197-011-0277-4

Handayani, T. D. (2015). *Glukomanan porang (Amorphopallus onchophyllus): karakteristik, potensi prebiotik, dan aplikasinya pada pembuatan jelly*. Universitas Gadjah Mada.

Hao, L., Ma, L., Li, Z., & Ma, X. (2021). Evolution of the Gut Microbiota and Its Fermentation Characteristics of Ningxiang Pigs at the Young Stage. *Animals*, *11*(3). https://doi.org/10.3390/ani11030638

Harmayani, E., Aprilia, V., & Marsono, Y. (2014). Characterization of glucomannan from Amorphophallus oncophyllus and its prebiotic activity in vivo. *Carbohydrate Polymers*, *112*, 475–479. https://doi.org/10.1016/j.carbpol.2014.06.019

He, Y., Guo, J., Ren, G., Cui, G., Han, S., & Liu, J. (2020). Effects of konjac glucomannan on the water distribution of frozen dough and corresponding steamed bread quality. *Food Chemistry*, *330*, 127243. https://doi.org/10.1016/j.foodchem.2020.127243

Helmi, R. L., Khasanah, Y., Damayanti, E., Kurniadi, M., & Mahelingga, D. E. (2020). Modified Cassava Flour (Mocaf): Optimalisasi Proses dan Potensi Pengembangan Industri Berbasis UMKM. In *Modified Cassava Flour (Mocaf): Optimalisasi Proses dan Potensi Pengembangan Industri Berbasis UMKM*. LIPI Press. https://doi.org/10.14203/press.43

Ho, L. H., & Abdul Latif, N. W. (2016). Nutritional composition, physical properties, and sensory evaluation of cookies prepared from wheat flour and pitaya (Hylocereus undatus) peel flour blends. *Cogent Food and Agriculture*, *2*, 113636. https://doi.org/10.1080/23311932.2015.1136369

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Huang, L., Zhang, X., Zhang, H., & Wang, J. (2018). Interactions between dietary fiber and ferulic acid changed the aggregation of gluten in a whole wheat model system. *LWT - Food Science and Technology*, *91*, 55–62. https://doi.org/10.1016/j.lwt.2018.01.027

Isleroglu, H., Kemerli, T., Sakin-Yilmazer, M., Guven, G., Ozdestan, O., Uren, A., & Kaymak-Ertekin, F. (2012). Effect of Steam Baking on Acrylamide Formation and Browning Kinetics of Cookies. *Journal of Food Science*, *77*(10), 1–7. https://doi.org/10.1111/j.1750-3841.2012.02912.x

Jia, M., Yu, Q., Chen, J., He, Z., Chen, Y., Xie, J., Nie, S., & Xie, M. (2020). Physical quality and in vitro starch digestibility of biscuits as affected by addition of soluble dietary fiber from defatted rice bran. *Food Hydrocolloids*, *99*, 105349. https://doi.org/10.1016/j.foodhyd.2019.105349

Johnson, K. V. A. (2020). Gut microbiome composition and diversity are related to human personality traits. *Human Microbiome Journal*, *15*, 100069. https://doi.org/10.1016/j.humic.2019.100069

Kala, A. L. A. (2014). Studies on saturated and trans fatty acids composition of few commercial brands of biscuits sold in Indian market. *Journal of Food Science and Technology*, *51*(11), 3520–3526. https://doi.org/10.1007/s13197-014-1421-8

Kao, W. T., & Lin, K. W. (2006). Quality of reduced-fat frankfurter modified by konjac-starch mixed gels. In *Journal of Food Science* (Vol. 71, Issue 4). https://doi.org/10.1111/j.1750-3841.2006.00003.x

Karang, A. A. A. P. P. S. (2016). *Pengaruh penambahan tepung glukomanan porang (Amorphophallus oncophyllus) dan STPP (sodium tripolyphosphate) terhadap sifat fisik dan sensoris sosis ayam*. Universitas Gadjah Mada.

Kaur, A., Singh, N., Kaur, S., Ahlawat, A. K., & Singh, A. M. (2014). Relationships of flour solvent retention capacity, secondary structure and rheological properties with the cookie making characteristics of wheat cultivars. *Food Chemistry*, *158*, 48–55. https://doi.org/10.1016/j.foodchem.2014.02.096

Kaur, A., Tuncil, Y. E., Sikaroodi, M., Gillevet, P., Patterson, J. A., Keshavarzian, A., & Hamaker, B. R. (2018). Alterations in the amounts of microbial metabolites in different regions of the mouse large intestine using variably fermentable fibres. *Bioactive Carbohydrates and Dietary Fibre*, *13*, 7–13. https://doi.org/10.1016/j.bcdf.2018.01.001

Khatkar, B. S., Barak, S., & Mudgil, D. (2013). Effects of gliadin addition on the rheological, microscopic and thermal characteristics of wheat gluten. *International Journal of Biological Macromolecules*, *53*, 38–41. https://doi.org/10.1016/j.ijbiomac.2012.11.002

Khatkar, B. S., & David Schofield, J. (2002). Dynamic rheology of wheat flour dough. I. Non-linear viscoelastic behaviour. *Journal of the Science of Food*

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

and Agriculture, *82*(8), 827–829. https://doi.org/10.1002/jsfa.1109

Kirk, K. F., Andersen, K. L., Tarpgaard, I. H., & Nielsen, H. L. (2021). Three cases of Sutterella wadsworthensis bacteremia secondary to abdominal infections. *Anaerobe*, *72*, 102460. https://doi.org/10.1016/j.anaerobe.2021.102460

Kovacs, A., Yacoby, K., & Gophna, U. (2010). A systematic assessment of automated ribosomal intergenic spacer analysis (ARISA) as a tool for estimating bacterial richness. *Research in Microbiologoy*, *161*(3), 192–197. https://doi.org/10.1016/j.resmic.2010.01.006

Krystyjan, M., Gumul, D., Ziobro, R., & Sikora, M. (2015). The effect of inulin as a fat replacement on dough and biscuit properties. *Journal of Food Quality*, *38*, 305–315. https://doi.org/10.1111/jfq.12148

Kumar, K. A., & Sudha, M. L. (2021). Effect of fat and sugar replacement on rheological, textural and nutritional characteristics of multigrain cookies. *Journal of Food Science and Technology*, *58*(7), 2630–2640. https://doi.org/10.1007/s13197-020-04769-9

Kusuma, R. J., Widada, J., Huriyati, E., & Julia, M. (2021). Naturally acquired lactic acid bacteria from fermented cassava improves nutrient and anti-dysbiosis activity of soy tempeh. *Open Access Macedonian Journal of Medical Sciences*, *9*, 1148–1155. https://doi.org/10.3889/oamjms.2021.7540

Kusuma, R. J., Widada, J., Huriyati, E., & Julia, M. (2022). Therapeutic Effects of Modified Tempeh on Glycemic Control and Gut Microbiota Diversity in Diabetic Rats. *Current Nutrition & Food Science*, *18*(8), 765–774. https://doi.org/10.2174/1573401318666220329101437

Kweon, M., Slade, L., & Levine, H. (2011). Solvent retention capacity (SRC) testing of wheat flour: Principles and value in predicting flour functionality in different wheat-based food processes and in wheat breeding-A review. *Cereal Chemistry*, *88*(6), 537–552. https://doi.org/10.1094/CCHEM-07-11-0092

Kweon, M., Slade, L., Levine, H., Martin, R., & Souza, E. (2009). Exploration of Sugar Functionality in Sugar-Snap and Wire-Cut Cookie Baking : Implications for Potential Sucrose Replacement or Reducction. *Cereal Chemistry*, *86*(4), 425–433. https://doi.org/10.1094/CCHEM-86-4-0425

Labuschagne, M., Guzmán, C., Phakela, K., Wentzel, B., & van Biljon, A. (2021). Solvent retention capacity and gluten protein composition of durum wheat flour as influenced by drought and heat stress. *Plants*, *10*(5), 1–14. https://doi.org/10.3390/plants10051000

Lai, H. M., & Lin, T. C. (2006). Bakery Products: Science and Technology. In Y. H. Hui (Ed.), *Bakery Products: Science and Technology* (First, pp. 3–68). Blackwell Publishing Inc. https://doi.org/10.1002/9780470277553.ch1

Laurence, & Bacharach, A. L. (1964). *Evaluation of Drug Activities: Pharmacometrics.* (Vol. 1). Academic Press Inc. (London) Ltd.

Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

https://doi.org/10.1021/jm00321a067

Lestari, L. A., Gama, D. B., Huriyati, E., Prameswari, A. A., & Harmayani, E. (2020). Glycemic index and glycemic load of arrowroot (Maranta arundinaceae) cookies with the addition of cinnamon (cinnamomum verum) and porang (amorphophallus oncophyllus) glucomannan. *Food Research*, *4*(3), 866–872. https://doi.org/10.26656/fr.2017.4(3).401

Li, F., Sun, X., Yu, W., Shi, C., Zhang, X., Yu, H., & Ma, F. (2021). Enhanced konjac glucomannan hydrolysis by lytic polysaccharide monooxygenases and generating prebiotic oligosaccharides. *Carbohydrate Polymers*, *253*, 117241. https://doi.org/10.1016/j.carbpol.2020.117241

Li, M. Z., Huang, X. J., Hu, J. L., Cui, S. W., Xie, M. Y., & Nie, S. P. (2020). The protective effects against cyclophosphamide (CTX)-induced immunosuppression of three glucomannans. *Food Hydrocolloids*, *100*, 105445. https://doi.org/10.1016/j.foodhyd.2019.105445

Liu, C., Cui, Y., Li, X., & Yao, M. (2021). microeco: an R package for data mining in microbial community ecology. *FEMS Microbiology Ecology*, *97*(2), fiaa255 doi: https://doi.org/10.1093/femsec/fiaa255

Liu, H., Cheng, Y., Qu, Y., & Wu, G. (2023). Unraveling the gut microbiota and short-chain fatty acids characteristics and associations in a cancer cachexia mouse model. *Microbial Pathogenesis*, *183*, 106332. https://doi.org/10.1016/j.micpath.2023.106332

Liu, J., Xu, Q., Zhang, J., Zhou, X., Lyu, F., & Zhao, P. (2015). Preparation , composition analysis and antioxidant activities of konjac oligo-glucomannan. *Carbohydrate Polymers*, *130*, 398–404. https://doi.org/10.1016/j.carbpol.2015.05.025

Liu, X., Mu, T., Yamul, D. K., Sun, H., Zhang, M., Chen, J., Fauconnier, M. L., & Andrea, P. V. (2017). Evaluation of different hydrocolloids to improve dough rheological properties and bread quality of potato–wheat flour. *Journal of Food Science and Technology*, *54*(6), 1597–1607. https://doi.org/10.1007/s13197-017-2591-y

López, A. M. M., & Simsek, S. (2021). Solvent retention capacity: Supplemental solvents for evaluation of gluten quality. *Journal of Cereal Science*, *102*, 103339. https://doi.org/10.1016/j.jcs.2021.103339

Lu, Y., Zhang, J., Zhang, Z., Liang, X., Liu, T., Yi, H., Gong, P., Wang, L., Yang, W., Zhang, X., Zhang, L., Yang, L., & Shi, H. (2021). Konjac glucomannan with probiotics acts as a combination laxative to relieve constipation in mice by increasing short-chain fatty acid metabolism and 5-hydroxytryptamine hormone release. *Nutrition*, *84*, 111112. https://doi.org/10.1016/j.nut.2020.111112

Ma, L., Ni, Y., Wang, Z., Tu, W., Ni, L., Zhuge, F., Zheng, A., Hu, L., Zhao, Y.,

UNIVERSITAS
GADJAH MADA
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Zheng, L., & Fu, Z. (2020). Spermidine improves gut barrier integrity and gut microbiota function in diet-induced obese mice. *Gut Microbes*, *12*(1), 1–19. https://doi.org/10.1080/19490976.2020.1832857

Maache-Rezzoug, Z., Bouvier, J. M., Allaf, K., & Patras, C. (1998). Effect of Principal Ingredients on Rheological Behaviour of Biscuit Dough and on Quality of Biscuits. *Journal of Food Engineering*, *35*(1), 23–42. https://doi.org/10.1016/S0260-8774(98)00017-X

Macfie, H. J. ., Bratchell, N., Greenhoff, K., & Vallis, L. V. (1989). Designs To Balance the Effect of Order of Presentation and First-Order Carry-Over Effects in Hall Tests. *Journal of Sensory Studies*, *4*(2), 129–148. https://doi.org/10.1111/j.1745-459X.1989.tb00463.x

MacRitchie, F. (2016). Physicochemical Processes in Mixing. In J. M. V Blanshard, P. J. Frazier, & T. Galliard (Eds.), *Chemistry and Physics of Baking* (Issue July, pp. 132–154). The Royal Society of Chemistry.

Maghaydah, S., Abdul-Hussain, S., Ajo, R., Obeidat, B., & Yawalbeh, Y. (2013). Enhancing the Nutritional Value of Gluten-Free Cookies with Inulin. *Advance Journal of Food Science and Technology*, *5*(7), 866–870. https://doi.org/10.19026/ajfst.5.3174

Magne, F., Gotteland, M., Gauthier, L., Zazueta, A., Pesoa, S., Navarrete, P., & Balamurugan, R. (2020). The Firmicutes/Bacteroidetes Ratio: A Relevant Marker of Gut Dysbiosis in Obese Patients? *Nutrients*, *12*, 1474. https://doi.org/10.3390/nu12051474

Mahmood, K., Kamilah, H., Shang, P. L., Sulaiman, S., Ariffin, F., & Alias, A. K. (2017). A review: Interaction of starch/non-starch hydrocolloid blending and the recent food applications. *Food Bioscience*, *19*, 110–120. https://doi.org/10.1016/j.fbio.2017.05.006

Maia-Landim, A., Lancho, C., Poblador, M. S., Lancho, J. L., & Ramírez, J. M. (2021). Garcinia cambogia and Glucomannan reduce weight, change body composition and ameliorate lipid and glucose blood profiles in overweight/obese patients. *Journal of Herbal Medicine*, *26*, 100424. https://doi.org/10.1016/j.hermed.2021.100424

Majeed, M., Anwar, S., Khan, M. U., Asghar, A., Shariati, M. A., Semykin, V., & Fazel, M. (2017). Study of the combined effect of pectin and banana powder as carbohydrate based fat replacers to develop low fat cookies. *Foods and Raw Materials*, *5*(2), 62–69. https://doi.org/10.21603/2308-4057-2017-2-62-69

Mamat, H., & Hill, S. E. (2014). Effect of fat types on the structural and textural properties of dough and semi-sweet biscuit. *Journal of Food Science and Technology*, *51*(9), 1998–2005. https://doi.org/10.1007/s13197-012-0708-x

Mancebo, C. M., Picón, J., & Gómez, M. (2015). Effect of flour properties on the quality characteristics of gluten free sugar-snap cookies. *LWT - Food Science*

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

and Technology, *64*(1), 264–269. https://doi.org/10.1016/j.lwt.2015.05.057

Mancebo, C. M., Rodriguez, P., Martinez, M. M., & Gomez, M. (2018). Effect of the addition of soluble (nutriose, inulin and polydextrose) and insoluble (bamboo, potato and pea) fibres on the quality of sugar-snap cookies. *International Journal of Food Science and Technology*, *53*(1), 129–136. https://doi.org/10.1111/ijfs.13566

Manley, D. (2011a). Emulsifiers (surfactants) and antioxidants as biscuit ingredients. In *Manley's Technology of Biscuits, Crackers and Cookies* (Fourth, pp. 181–190). Wodhead Publishing Limited. https://doi.org/10.1533/9780857093646.2.181

Manley, D. (2011b). *Manley's technology of biscuits, crackers and cookies* (Fourth). Wodhead Publishing Limited.

Manley, D., Pareyt, B., & Delcour, J. A. (2011). Short dough biscuits. In *Manley's Technology of Biscuits, Crackers and Cookies* (Fourth, pp. 331–346). Wodhead Publishing Limited. https://doi.org/10.1533/9780857093646.3.331

Manohar, R. S., & Rao, P. H. (1999). Effect of emulsifiers, fat level and type on the rheological characteristics of biscuit dough and quality of biscuits. *Journal of Food Science and Technology*, *79*, 1223–1231. https://doi.org/10.1002/(SICI)1097-0010(19990715)79:10<1223::AID-JSFA346>3.0.CO;2-W

Mao, Y. H., Xu, Y., Song, F., Wang, Z. M., Li, Y. H., Zhao, M., He, F., Tian, Z., & Yang, Y. (2022). Protective effects of konjac glucomannan on gut microbiome with antibiotic perturbation in mice. *Carbohydrate Polymers*, *290*, 119476. https://doi.org/10.1016/j.carbpol.2022.119476

Mardinawati, M. (2012). *Daya Pembengkakan (Swelling Power) Campuran Tepung Kimpul (Xanthosoma Sagittifolium) dan Tepung Terigu Terhadap Tingkat Pengembangan dan Kesukaan Sensorik Cake*. Universitas Muhammadiyah Surakarta.

Mareta, D. T. (2015). *Glukomanan porang (Amorphophallus oncophyllus): karakteristik, potensi prebiotik, dan aplikasinya sebagai pengenyal bakso*. Universitas Gadjah Mada.

Marín-Sáez, J., Lopez-Ruiz, R., Ferreira, I. M. P. L. V. O., & Cunha, S. C. (2023). Gastrointestinal bioaccessibility and fiber mitigation of tropane alkaloids assessed on tea and cookies by in vitro digestion. *Journal of the Science of Food and Agriculture*, *103*(11), 5539–5546. https://doi.org/10.1002/jsfa.12627

Marques, G. de A., São José, J. F. B. de, Silva, D. A., & Silva, E. M. M. da. (2016). Whey protein as a substitute for wheat in the development of no added sugar cookies. *LWT - Food Science and Technology*, *67*, 118–126. https://doi.org/10.1016/j.lwt.2015.11.044

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Martin, M. (2011). Cutadapt removes adapter sequences from high-throughput sequencing reads. *EMBnet.Journal*, *17*(1), 5–7. https://doi.org/10.14806/ej.17.1.200

McMurdie, P. J., & Holmes, S. (2013). phyloseq: An R Package for Reproducible Interactive Analysis and Graphics of Microbiome Census Data. *PLOS ONE*, *8*(4), e61217. https://doi.org/10.1371/journal.pone.0061217

Meng, K., Gao, H., Zeng, J., Zhao, J., Qin, Y., Li, G., & Su, T. (2021). Rheological and microstructural characterization of wheat dough formulated with konjac glucomannan. *Journal of the Science of Food and Agriculture*, *101*(10), 4373–4379. https://doi.org/10.1002/jsfa.11078

Mert, B., & Demirkesen, I. (2016). Reducing saturated fat with oleogel/shortening blends in a baked product. *Food Chemistry*, *199*, 809–816. https://doi.org/10.1016/j.foodchem.2015.12.087

Milićević, N., Sakač, M., Hadnađev, M., Škrobot, D., Šarić, B., Hadnađev, T. D., Jovanov, P., & Pezo, L. (2020). Physico-chemical properties of low-fat cookies containing wheat and oat bran gels as fat replacers. *Journal of Cereal Science*, *95*, 103056. https://doi.org/10.1016/j.jcs.2020.103056

Mohanty, D., Misra, S., Mohapatra, S., & Sahu, P. S. (2018). Prebiotics and synbiotics: Recent concepts in nutrition. *Food Bioscience*, *26*, 152–160. https://doi.org/10.1016/j.fbio.2018.10.008

Morales-Hernandez, J. A., Chanona-Perez, J. J., Villanueva-Rodriguez, S. J., Perea-Flores, M. J., & Urias-Silvas, J. E. (2019). Technological and Structural Properties of Oat Cookies Incorporated with Fructans (Agave tequilana Weber). *Food Biophysics*, *14*, 415–424. https://doi.org/https://doi.org/10.1007/s11483-019-09589-9

Moriano, M. E., Cappa, C., & Alamprese, C. (2018). Reduced-fat soft-dough biscuits: Multivariate effects of polydextrose and resistant starch on dough rheology and biscuit quality. *Journal of Cereal Science*, *81*, 171–178. https://doi.org/10.1016/j.jcs.2018.04.010

Moriano, M. E., Cappa, C., Casiraghi, M. C., Ciappellano, S., Romano, A., Torri, L., & Alamprese, C. (2019). Reduced-fat biscuits: Interplay among structure, nutritional properties and sensory acceptability. *LWT - Food Science and Technology*, *109*, 467–474. https://doi.org/10.1016/j.lwt.2019.04.027

Myrisis, G., Aja, S., & Haros, C. M. (2022). Substitution of Critical Ingredients of Cookie Products to Increase Nutritional Value. *Biology and Life Sciences Forum*, *17*(1), 15. https://doi.org/10.3390/blsf2022017015

Nareswari, A. D. (2016). *Pengaruh penambahan glukomanan porang (Amorphophallus oncophyllus) dan kappa karaginan terhadap sifat fisik dan sensoris es krim*. Universitas Gadjah Mada.

Narine, S. S., & Marangoni, A. G. (1999). Relating structure of fat crystal networks

Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

to mechanical properties: a review. *Food Research International*, *32*(4), 227–248. https://doi.org/10.1016/S0963-9969(99)00078-2

Nguyen, H. M., Pham, M LSTelzer, E. M., Plattner, E., Grabherr, R., Mathiesen, G., Peterbauer, C. K., Haltrich, D., & Nguyen, T. H. (2019). Constitutive expression and cell-surface display of a bacterial β-mannanase in Lactobacillus plantarum. *Microbial Cell Factories*, *18*, 76. https://doi.org/10.1186/s12934-019-1124-y

Ning, Y., Cui, B., Yuan, C., Zou, Y., Liu, W., & Pan, Y. (2020). Effects of konjac glucomannan on the rheological, microstructure and digestibility properties of debranched corn starch. *Food Hydrocolloids*, *100*, 105342. https://doi.org/10.1016/j.foodhyd.2019.105342

Nugraheni, M., Sutopo, Purwanti, S., & Handayani, T. H. W. (2019). Nutritional, physical and sensory properties of high protein gluten and egg-free cookies made with resistant starch type 3 of Maranta arundinaceae flour and flaxseed. *Food Research*, *3*(6), 658–663.

Nurlathifah, A. (2016). *Pengaruh penambahan tepung glukomanan porang (Amorphophallus Oncophyllus) dan karaginan terhadap sifat fisik dan sensoris milkshake*. Universitas Gadjah Mada.

Ogunbusola, E. M., Alabi, O. O., Sanni, T. A., Seidu, K. T., Oke, H. O., & Akinwale, O. R. (2020). Assessment of gluten-free cookies made from rice and soy protein isolate blends. *Journal of Microbiology, Biotechnology and Food Sciences*, *9*(5), 907–912. https://doi.org/10.15414/jmbfs.2020.9.5.907-912

Omowaye-Taiwo, O. A., Fagbemi, T. N., Ogunbusola, E. M., & Badejo, A. A. (2015). Effect of germination and fermentation on the proximate composition and functional properties of full-fat and defatted cucumeropsis mannii seed flours. *Journal of Food Science and Technology*, *52*(8), 5257–5263. https://doi.org/10.1007/s13197-014-1569-2

Ondov, B. D., Bergman, N. H., & Phillippy, A. M. (2011). Interactive metagenomic visualization in a Web browser. *BMC Bioinformatics*, *12*(385). https://doi.org/10.1186/1471-2105-12-385

Oyeyinka, S. A., Ojuko, I. B., Oyeyinka, A. T., Akintayo, O. A., Adebisi, T. T., & Adeloye, A. A. (2018). Physicochemical properties of novel non-gluten cookies from fermented cassava root. *Journal of Food Processing and Preservation*, *42*, e13819. https://doi.org/10.1111/jfpp.13819

Padalino, L., Mastromatteo, M., Sepielli, G., & Nobile, M. A. Del. (2011). Formulation Optimization of Gluten-Free Functional Spaghetti Based on Maize Flour and Oat Bran Enriched in β-Glucans. *Materials*, *4*(12), 2119–2135. https://doi.org/10.3390/ma4122119

Pareyt, B., Brijs, K., & Delcour, J. A. (2010). Impact of fat on dough and cookie properties of sugar-snap cookies. *Cereal Chemistry*, *87*(3), 226–230.

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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https://doi.org/10.1094/CCHEM-87-3-0226

Pareyt, B., & Delcour, J. A. (2008). The role of wheat flour constituents, sugar, and fat in low moisture cereal based products: A review on sugar-snap cookies. *Critical Reviews in Food Science and Nutrition*, *48*(9), 824–839. https://doi.org/10.1080/10408390701719223

Pareyt, B., Talhaoui, F., Kerckhofs, G., Brijs, K., Goesaert, H., Wevers, M., & Delcour, J. A. (2009). The role of sugar and fat in sugar-snap cookies: Structural and textural properties. *Journal of Food Engineering*, *90*(3), 400–408. https://doi.org/10.1016/j.jfoodeng.2008.07.010

Park, E. Y., Kim, H. Y., Shin, H. Y., Jeon, Y. Il, Kim, J. M., Kim, S., & Kim, J. Y. (2019). Change in textural properties, starch digestibility, and aroma of nonfried instant noodles by substitution of konjac glucomannan. *Cereal Chemistry*, *96*(4), 784–791. https://doi.org/10.1002/cche.10180

Payling, L., Fraser, K., Loveday, S. M., Sims, I., Roy, N., & McNabb, W. (2020). The effects of carbohydrate structure on the composition and functionality of the human gut microbiota. *Trends in Food Science and Technology*, *97*, 233–248. https://doi.org/10.1016/j.tifs.2020.01.009

Peressini, D., Pin, M., & Sensidoni, A. (2011). Rheology and breadmaking performance of rice-buckwheat batters supplemented with hydrocolloids. *Food Hydrocolloids*, *25*(3), 340–349. https://doi.org/10.1016/j.foodhyd.2010.06.012

Petrofsky, K. E., & Hoseney, R. C. (1995). Rheological properties of dough made with starch and gluten from several cereal sources. *Cereal Chemistry*, *72*(1), 53–58. http://www.aaccnet.org/cerealchemistry/backissues/1995/72_53.pdf

Piteira, M. F., Maia, J. M., Raymundo, A., & Sousa, I. (2006). Extensional flow behaviour of natural fibre-filled dough and its relationship with structure and properties. *Journal of Non-Newtonian Fluid Mechanics*, *137*(1–3), 72–80. https://doi.org/10.1016/j.jnnfm.2006.03.008

Pokusaeva, K., Fitzgerald, G. F., & Sinderen, D. v. (2011). Carbohydrate metabolism in Bifidobacteria. *Genes and Nutrition*, *6*, 285–306. https://doi.org/10.1007/s12263-010-0206-6

Potter, M., Vlassopoulos, A., & Lehmann, U. (2018). Snacking recommendations worldwide: A scoping review. *Advances in Nutrition*, *9*(2), 86–98. https://doi.org/10.1093/advances/nmx003

Prescott, S. L. (2014). Disease prevention in the age of convergence - The need for a wider, long ranging and collaborative vision. *Allergology International*, *63*(1), 11–20. https://doi.org/10.2332/allergolint.13-RAI-0659

Putri, N. A., Herlina, H., & Subagio, A. (2018). Karakteristik Mocaf (Modified Cassava Flour) Berdasarkan Metode Penggilingan dan Lama Fermentasi. *Jurnal Agroteknologi*, *12*(01), 79–89. https://doi.org/10.19184/j-

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

agt.v12i1.8252

Putri, S. N. (2016). *Pengaruh penambahan tepung porang (Amorphophallus oncophyllus) terhadap kualitas yoghurt*. Universitas Gadjah Mada.

Putri, S. Y. (2016). *Pengaruh penambahan glukomanan porang (Amorphophallus oncophyllus) dan carboxymethyl cellulose (CMC) terhadap sifat fisik dan sensoris mie basah dengan substitusi mocaf (modified cassava flour)*. Universitas Gadjah Mada.

Qiu, S., Punzalan, M. E., Abbaspourrad, A., & Padilla-Zakour, O. I. (2020). High water content, maltose and sodium dodecyl sulfate were effective in preventing the long-term retrogradation of glutinous rice grains - A comparative study. *Food Hydrocolloids*, *98*, 105247. https://doi.org/10.1016/j.foodhyd.2019.105247

Rahman, A. M. (2007). *Mempelajari kaarakteristik kimia dan fisik tepung tapioka dan mocal (modified cassava flour) sebagai penyalut kacang pada produk kacang salut*. Institut Pertanian Bogor.

Rakhmatulloh, S. (2017). *Efek imunomodulator kefir susu kambing dengan suplementasi glukomanan porang (Amorphophallus oncophyllus) pada tikus yang diberi pakan tinggi lemak dan tinggi fruktosa*. Universitas Gadjah Mada.

Rathore, H., Sehwag, S., Prasad, S., & Sharma, S. (2019). Technological, nutritional, functional and sensorial attributes of the cookies fortified with Calocybe indica mushroom. *Journal of Food Measurement and Characterization*, *13*(2), 976–987. https://doi.org/10.1007/s11694-018-0012-1

Ratnayake, W. S., & Jackson, D. S. (2009). Starch Gelatinization. In *Advances in Food and Nutrition Research* (Issue 55, pp. 221–268). https://doi.org/10.1016/S0091-679X(08)92017-3

Ren, B., Xie, H., Guo, L., Zhong, K., Huang, Y., & Gao, H. (2020). Effect of Konjac Glucomannan on Sensory, Physical and Thermal Properties of Mochi. *International Journal of Food Engineering*, *16*(3), 1–11. https://doi.org/10.1515/ijfe-2019-0227

Rezende, E. S. V., Lima, G. C., & Naves, M. M. V. (2021). Dietary fibers as beneficial microbiota modulators: A proposal classification by prebiotic categories. *Nutrition*, *89*, 111217. https://doi.org/10.1016/j.nut.2021.111217

Rizzatti, G., Lopetuso, L. R., Gibiino, G., Binda, C., & Gasbarrini, A. (2017). Proteobacteria: A Common Factor in Human Diseases. *BioMed Research International*, *2017*, 9351507. https://doi.org/10.1155/2017/9351507

Roberfroid, M. B. (2002). Functional foods: concepts and application to inulin and oligofructose. *British Journal of Nutrition*, *87*(Suppl.2), S139–S143. https://doi.org/10.1079/BJN/2002529

UNIVERSITAS
GADJAH MADA
**Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Ruiz-Capillas, C., Triki, M., Herrero, A. M., & Jiménez-Colmenero, F. (2012). Biogenic amines in low- and reduced-fat dry fermented sausages formulated with konjac gel. *Journal of Agricultural and Food Chemistry*, *60*(36), 9242–9248. https://doi.org/10.1021/jf302540c

Rustanti, N., Murdiati, A., Juffrie, M., & Rahayu, E. S. (2022). Effect of Probiotic Lactobacillus plantarum Dad-13 on Metabolic Profiles and Gut Microbiota in Type 2 Diabetic Women: A Randomized Double-Blind Controlled Trial. *Microorganisms*, *10*(9). https://doi.org/10.3390/microorganisms10091806

Saeed, S. M. G., Ali, S. A., Ali, R., Sayeed, S. A., Mobin, L., & Ahmed, R. (2020). Exploring the potential of black gram (Vigna mungo) flour as a fat replacer in biscuits with improved physicochemical, microstructure, phytochemicals, nutritional and sensory attributes. *SN Applied Sciences*, *2*, 2083. https://doi.org/10.1007/s42452-020-03797-6

Safitri, A. H., Tyagita, N., & Nasihun, T. (2017). Porang glucomannan supplementation improves lipid profile in metabolic syndrome induced rats. *Journal of Natural Remedies*, *17*(4), 131–143. https://doi.org/10.18311/jnr/2017/18125

Saha, S., Gupta, A., Singh, S. R. K., Bharti, N., Singh, K. P., Mahajan, V., & Gupta, H. S. (2011). Compositional and varietal influence of finger millet flour on rheological properties of dough and quality of biscuit. *LWT - Food Science and Technology*, *44*(3), 616–621. https://doi.org/10.1016/j.lwt.2010.08.009

Sahi, S. S. (1994). Interfacial properties of the aqueous phases of wheat flour doughs. *Journal of Cereal Science*, *20*, 119–127. https://doi.org/10.1006/jcrs.1994.1052

Sahin, A. W., Zannini, E., Coffey, A., & Arendt, E. K. (2019). Sugar reduction in bakery products: Current strategies and sourdough technology as a potential novel approach. *Food Research International*, *126*, 108583. https://doi.org/10.1016/j.foodres.2019.108583

Saleem, Q., Wildman, R. D., Huntley, J. M., & Whitworth, M. B. (2005). Material properties of semi-sweet biscuits for finite element modelling of biscuit cracking. *Journal of Food Engineering*, *68*(1), 19–32. https://doi.org/10.1016/j.jfoodeng.2004.05.020

Saleh, N., Rahayuningsih, S. A., Radjit, B. S., Ginting, E., Harnowo, D., & Mejaya, I. M. J. (2015). *Tanaman Porang. Pengenalan, Budidaya, dan Pemanfaatannya*. Pusat Penelitian dan Pengembangan Tanaman Pangan.

Salim, E. (2011). *Mengolah Singkong Menjadi Tepung Mocaf Bisnis Produk Alternatif Pengganti Terigu*. Andy Publisher.

Santiago-García, P. A., Mellado-Mojica, E., León-Martínez, F. M., & López, M. G. (2017). Evaluation of Agave angustifolia fructans as fat replacer in the cookies manufacture. *LWT - Food Science and Technology*, *77*, 100–109.

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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https://doi.org/10.1016/j.lwt.2016.11.028

Sanz, T., Laguna, L., & Salvador, A. (2015). Biscuit dough structural changes during heating: Influence of shortening and cellulose ether emulsions. *LWT - Food Science and Technology*, *62*(2), 962–969. https://doi.org/10.1016/j.lwt.2015.02.036

Sari, D. A. P. (2016). *Pengaruh penambahan tepung porang (Amorphophallus oncophyllus) terhadap kualitas susu Acidophilus*. Universitas Gadjah Mada.

Satrapai, S., & Suphantharika, M. (2007). Influence of spent brewer's yeast β-glucan on gelatinization and retrogradation of rice starch. *Carbohydrate Polymers*, *67*(4), 500–510. https://doi.org/10.1016/j.carbpol.2006.06.028

Savitha, Y. S., Indrani, D., & Prakash, J. (2008). Effect of replacement of sugar with sucralose and maltodextrin on rheological characteristics of wheat flour dough and quality of soft dough biscuits. *Journal of Texture Studies*, *39*(6), 605–616. https://doi.org/10.1111/j.1745-4603.2008.00160.x

Schmelter, L., Rohm, H., & Struck, S. (2021). Gluten-free bakery products: Cookies made from different Vicia faba bean varieties. *Future Foods*, *4*, 100038. https://doi.org/10.1016/j.fufo.2021.100038

Schnorr, S. L., Candela, M., Rampelli, S., Centanni, M., Consolandi, C., Basaglia, G., Turroni, S., Biagi, E., Peano, C., Severgnini, M., Fiori, J., Gotti, R., De Bellis, G., Luiselli, D., Brigidi, P., Mabulla, A., Marlowe, F., Henry, A. G., & Crittenden, A. N. (2014). Gut microbiome of the Hadza hunter-gatherers. *Nature Communications*, *5*, 3654. https://doi.org/10.1038/ncomms4654

Schuchardt, J. P., Wonik, J., Bindrich, U., Heinemann, M., Kohrs, H., Schneider, I., Möller, K., & Hahn, A. (2016). Glycemic index and microstructure analysis of a newly developed fiber enriched cookie. *Food & Function*, *7*, 464–474. https://doi.org/10.1039/c5fo01137j

Segata, N., Izard, J., Waldron, L., Gevers, D., Miropolsky, L., Garrett, W. S., & Huttenhower, C. (2011). Metagenomic biomarker discovery and explanation. *Genome Biology*, *12*(6), R60. https://doi.org/10.1186/gb-2011-12-6-r60

Shah, B. R., Li, B., Wang, L., Liu, S., Li, Y., Wei, X., Weiping, J., & Zhenshun, L. (2015). Health benefits of konjac glucomannan with special focus on diabetes. *Bioactive Carbohydrates and Dietary Fibre*, *5*(2), 179–187. https://doi.org/10.1016/j.bcdf.2015.03.007

Shetty, S., & Lahti, L. (2022). *microbiomeutilities: microbiomeutilities: Utilities for Microbiome Analytics.* (R package version 1.00.17).

Shi, X. D., Yin, J. Y., Cui, S. W., Wang, Q., Wang, S. Y., & Nie, S. P. (2020). Comparative study on glucomannans with different structural characteristics: Functional properties and intestinal production of short chain fatty acids. *International Journal of Biological Macromolecules*, *164*, 826–835. https://doi.org/10.1016/j.ijbiomac.2020.07.186

UNIVERSITAS
GADJAH MADA
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Silva, D. F. D., Ferreira, S. B. D. S., Bruschi, M. L., Britten, M., & Matumoto-Pintro, P. T. (2016). Effect of commercial konjac glucomannan and konjac flours on textural, rheological and microstructural properties of low fat processed cheese. *Food Hydrocolloids*, *60*, 308–316. https://doi.org/https://doi.org/10.1016/j.foodhyd.2016.03.034

Silva, T. F. D., & Conti-Silva, A. C. (2018). Potentiality of gluten-free chocolate cookies with added inulin/oligofructose: Chemical, physical and sensory characterization. *LWT - Food Science and Technology*, *90*, 172–179. https://doi.org/10.1016/j.lwt.2017.12.031

Sim, S. Y., Noor Aziah, A. A., & Cheng, L. H. (2011). Characteristics of wheat dough and Chinese steamed bread added with sodium alginates or konjac glucomannan. *Food Hydrocolloids*, *25*(5), 951–957. https://doi.org/10.1016/j.foodhyd.2010.09.009

Singamayum, K., Chakraborty, S., Das, M. J., Sit, N., & Deka, S. C. (2021). Wheat and Cassava Flour-Based Composite Formulation of Cookies: Optimization of the Ingredient's Level by Simplex Lattice Design and Sensory Evaluation Using Fuzzy Logic. *Journal of Biosystems Engineering*, *46*(1), 93–103. https://doi.org/10.1007/s42853-021-00090-1

Singh, J., Singh, N., Sharma, T. R., & Saxena, S. K. (2003). Physicochemical, rheological and cookie making properties of corn and potato flours. *Food Chemistry*, *83*(3), 387–393. https://doi.org/10.1016/S0308-8146(03)00100-6

Singh Sibian, M., & Singh Riar, C. (2021). Optimization and evaluation of composite flour cookies prepared from germinated triticale, kidney bean, and chickpea. *Journal of Food Processing and Preservation*, *45*(1), 1–11. https://doi.org/10.1111/jfpp.14996

Sman, R. G. M. Van Der, & Renzetti, S. (2019). Understanding functionality of sucrose in biscuits for reformulation purposes. *Critical Reviews in Food Science and Nutrition*, *59*(14), 2225–2239. https://doi.org/10.1080/10408398.2018.1442315

Soronja-Simovic, D., Pajin, B., Subaric, D., Dokic, L., Seres, Z., & Nikolic, I. (2016). Quality, Sensory and Nutritional Characteristics of Cookies Fortified with Chesnut Flour. *Journal of Food Processing and Preservation*, *00*. https://doi.org/10.1111/jfpp.12887

Souza, C. B. D., Lima, G. P. P., Borges, C. V., Dias, L. C. G. D., Spoto, M. H. F., Castro, G. R., Corrêa, C. R., & Minatel, I. O. (2019). Development of a functional rice bran cookie rich in γ-oryzanol. *Journal of Food Measurement and Characterization*, *13*(2), 1070–1077. https://doi.org/10.1007/s11694-018-00022-2

Statista. (2024). *Cookies & Crackers - Worldwide*. Statista. https://www.statista.com/outlook/cmo/food/confectionery-snacks/snack-food/cookies-crackers/worldwide

UNIVERSITAS
GADJAH MADA
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Sudha, M. L., Srivastava, A. K., Vetrimani, R., & Leelavathi, K. (2007). Fat replacement in soft dough biscuits: Its implications on dough rheology and biscuit quality. *Journal of Food Engineering*, *80*(3), 922–930. https://doi.org/10.1016/j.jfoodeng.2006.08.006

Sulieman, A. A., Zhu, K. X., Peng, W., Hassan, H. A., Mahdi, A. A., & Zhou, H. M. (2019). Influence of fermented and unfermented Agaricus bisporus polysaccharide flours on the antioxidant and structural properties of composite gluten-free cookies. *LWT - Food Science and Technology*, *101*, 835–846. https://doi.org/https://doi.org/10.1016/j.lwt.2018.11.007

Sun, Y., Wang, M., Ma, S., & Wang, H. (2020). Physicochemical characterization of rice, potato, and pea starches, each with different crystalline pattern, when incorporated with Konjac glucomannan. *Food Hydrocolloids*, *101*, 105499. https://doi.org/10.1016/j.foodhyd.2019.105499

Sykes, G. B., & Davidson, I. (2020). *Biscuit, Cookie and Cracker: Process and Recipes*. Academic Press.

Taji, R. N. A. S. (2020). *Karakteristik fisik dan sensoris dark chocolate dengan penambahan tepung glukomanan porang (Amorphophallus oncophyllus)*. Universitas Gadjah Mada.

Tarancón, P., Salvador, A., Sanz, T., Fiszman, S., & Tárrega, A. (2015). Use of healthier fats in biscuits (olive and sunflower oil): Changing sensory features and their relation with consumers' liking. *Food Research International*, *69*(1), 91–96. https://doi.org/10.1016/j.foodres.2014.12.013

Tatirat, O., & Charoenrein, S. (2011). Physicochemical properties of konjac glucomannan extracted from konjac flour by a simple centrifugation process. *LWT - Food Science and Technology*, *44*(10), 2059–2063. https://doi.org/10.1016/j.lwt.2011.07.019

Tester, R., & Al-Ghazzewi, F. (2017). Glucomannans and nutrition. *Food Hydrocolloids*, *68*, 246–254. https://doi.org/10.1016/j.foodhyd.2016.05.017

Tester, R., & Al-Ghazzewi, F. H. (2016). Beneficial health characteristics of native and hydrolysed konjac (Amorphophallus konjac) glucomannan. *Journal of the Science of Food and Agriculture*, *96*(10), 3283–3291. https://doi.org/10.1002/jsfa.7571

Tester, R., Al-Ghazzewi, F., Shen, N., Chen, Z., Chen, F., Yang, J., Zhang, D., & Tang, M. (2012). The use of konjac glucomannan hydrolysates to recover healthy microbiota in infected vaginas treated with an antifungal agent. *Beneficial Microbes*, *3*(1), 61–66. https://doi.org/10.3920/BM2011.0021

Thomas, D. J., & Atwell, W. A. (1999). *Eagan Press Handbook Series: Starches*. Eagan Press.

Thongram, S., Tanwar, B., Chauhan, A., & Kumar, V. (2016). Physicochemical and organoleptic properties of cookies incorporated with legume flours. *Cogent*

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Food & Agriculture, *2*, 1172389. https://doi.org/10.1080/23311932.2016.1172389

Tidjani Alou, M., Lagier, J. C., & Raoult, D. (2016). Diet influence on the gut microbiota and dysbiosis related to nutritional disorders. *Human Microbiome Journal*, *1*, 3–11. https://doi.org/10.1016/j.humic.2016.09.001

Tolstoguzov, V. (1997). Thermodynamic aspects of dough formation and functionality. *Food Hydrocolloids*, *11*(2), 181–193. https://doi.org/10.1016/S0268-005X(97)80025-2

Tuncil, Y. E., Thakkar, R. D., Arioglu-Tuncil, S., Hamaker, B. R., & Lindemann, S. R. (2020). Subtle Variations in Dietary-Fiber Fine Structure Differentially Influence the Composition and Metabolic Function of Gut Microbiota. *MSphere*, *5*(3). https://doi.org/10.1128/msphere.00180-20

Tuohy, K. M., Probert, H. M., Smejka, C. W., & Gibson, G. R. (2003). Use of probiotics and prebiotics to improve gut health. *Drug Discovery Today*, *8*(15), 692–700. https://doi.org/10.1016/S1359-6446(03)02746-6

US Department of Agriculture. (2007). *Commercial Item Description Cookies*. https://www.ams.usda.gov/sites/default/files/media/CID Cookies.pdf

Vasques-Monteiro, I. M. L., Silva-Veiga, F. M., Miranda, C. S., de Andrade Gonçalves, É. C. B., Daleprane, J. B., & Souza-Mello, V. (2021). A rise in Proteobacteria is an indicator of gut-liver axis-mediated nonalcoholic fatty liver disease in high-fructose-fed adult mice. *Nutrition Research*, *91*, 26–35. https://doi.org/10.1016/j.nutres.2021.04.008

Vázquez, M. J., Alonso, J. L., Domínguez, H., & Parajó, J. C. (2000). Xylooligosaccharides: manufacture and applications. *Trends in Food Science & Technology*, *11*(11), 387–393. https://doi.org/10.1016/S0924-2244(01)00031-0

Wanders, A. J., Zock, P. L., & Brouwer, I. A. (2017). Trans fat intake and its dietary sources in general populations worldwide: A systematic review. *Nutrients*, *9*(8), 1–14. https://doi.org/10.3390/nu9080840

Wang, K., & He, Z. (2002). Alginate-konjac glucomannan-chitosan beads as controlled release matrix. *International Journal of Pharmaceutics*, *244*(1–2), 117–126. https://doi.org/10.1016/S0378-5173(02)00324-1

Wang, L., Xu, J., Fan, X., Wang, Q., Wang, P., Yuan, J., Yu, Y., Zhang, Y., & Cui, L. (2018). The effect of branched limit dextrin on corn and waxy corn gelatinization and retrogradation. *International Journal of Biological Macromolecules*, *106*, 116–122. https://doi.org/10.1016/j.ijbiomac.2017.07.181

Wang, S., Xiao, Y., Tian, F., Zhao, J., Zhang, H., Zhai, Q., & Chen, W. (2020). Rational use of prebiotics for gut microbiota alterations: Specific bacterial phylotypes and related mechanisms. *Journal of Functional Foods*, *66*, 103838.

UNIVERSITAS GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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https://doi.org/10.1016/j.jff.2020.103838

Watts, A. M., West, N. P., Zhang, P., Smith, P. K., Cripps, A. W., & Cox, A. J. (2021). The Gut Microbiome of Adults with Allergic Rhinitis Is Characterised by Reduced Diversity and an Altered Abundance of Key Microbial Taxa Compared to Controls. *International Archives of Allergy and Immunology*, *182*(2), 94–105. https://doi.org/10.1159/000510536

Weipert, D. (1990). The benefits of basic rheometry in studying dough rheology. *Cereal Chemistry*, *67*(4), 311–317.

Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org

Woś, H., & Brzeziński, W. (2015). Triticale for Food - The Quality Driver. In F. Eudes (Ed.), *Triticale* (pp. 213–232). Springer International Publishing. https://doi.org/10.1007/978-3-319-22551-7

Wu, J., Deng, X., & Lin, X. (2013). Swelling characteristics of konjac glucomannan superabsobent synthesized by radiation-induced graft copolymerization. *Radiation Physics and Chemistry*, *83*, 90–97. https://doi.org/10.1016/j.radphyschem.2012.09.026

Xu, S., Zhan, L., Tang, W., Wang, Q., Dai, Z., Zhou, L., Feng, T., Chen, M., Wu, T., Hu, E., & Yu, G. (2023). MicrobiotaProcess: A comprehensive R package for deep mining microbiome. *The Innovation*, *4*(2), 100388. https://doi.org/10.1016/j.xinn.2023.100388

Xu, T., Huang, W., Liang, J., Zhong, Y., Chen, Q., Jie, F., & Lu, B. (2021). Tuber flours improve intestinal health and modulate gut microbiota composition. *Food Chemistry: X*, *12*, 100145. https://doi.org/10.1016/j.fochx.2021.100145

Xu, W., Xiong, Y., Li, Z., Luo, D., Wang, Z., Sun, Y., & Shah, B. R. (2020). Stability, microstructural and rheological properties of complex prebiotic emulsion stabilized by sodium caseinate with inulin and konjac glucomannan. *Food Hydrocolloids*, *105*, 105772. https://doi.org/10.1016/j.foodhyd.2020.105772

Yamul, D. K., & Navarro, A. S. (2020). Effect of hydrocolloids on structural and functional properties of wheat/potato (50/50) flour dough. *Food Structure*, *24*, 100138. https://doi.org/https://doi.org/10.1016/j.foostr.2020.100138

Yang, C., Mai, J., Cao, X., Burberry, A., Cominelli, F., & Zhang, L. (2023). Genome analysis ggpicrust2: an R package for PICRUSt2 predicted functional profile analysis and visualization. *Bioinformatics*, *39*(8), btad470. https://doi.org/10.1093/bioinformatics/btad470

Yang, J., Vittori, N., Wang, W., Shi, Y., Hoeflinger, J. L., Miller, M. J., & Pan, Y. (2017). Molecular weight distribution and fermentation of mechanically pre-treated konjac enzymatic hydrolysates. *Carbohydrate Polymers*, *159*, 58–65. https://doi.org/10.1016/j.carbpol.2016.12.014

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Yanuriati, A., Marseno, D. W., Rochmadi, & Harmayani, E. (2017). Characteristics of glucomannan isolated from fresh tuber of Porang (Amorphophallus muelleri Blume). *Carbohydrate Polymers*, *156*, 56–63. https://doi.org/10.1016/j.carbpol.2016.08.080

Yasumatsu, K., Sawada, K., Moritaka, S., Misaki, M., Toda, J., Wada, T., & Ishii, K. (1972). Whipping and Emulsifying Properties of Soybean Products. *Agricultural and Biological Chemistry*, *36*(5), 719–727. https://doi.org/10.1080/00021369.1972.10860321

Yatsunenko, T., Rey, F. E., Manary, M. J., Trehan, I., Dominguez-Bello, M. G., Contreras, M., Magris, M., Hidalgo, G., Baldassano, R. N., Anokhin, A. P., Heath, A. C., Warner, B., Reeder, J., Kuczynski, J., Caporaso, J. G., Lozupone, C. A., Lauber, C., Clemente, J. C., Knights, D., … Gordon, J. I. (2012). Human gut microbiome viewed across age and geography. *Nature*, *486*(7402), 222–227. https://doi.org/10.1038/nature11053

Yazar, G., & Rosell, C. M. (2023). Fat replacers in baked products: their impact on rheological properties and final product quality. *Critical Reviews in Food Science and Nutrition*, *63*(25), 7653–7676. https://doi.org/10.1080/10408398.2022.2048353

Yin, J. Y., Ma, L. Y., Xie, M. Y., Nie, S. P., & Wu, J. Y. (2020). Molecular properties and gut health benefits of enzyme-hydrolyzed konjac glucomannans. *Carbohydrate Polymers*, *237*, 116117. https://doi.org/10.1016/j.carbpol.2020.116117

Yu, A. H. M., Phoon, P. Y., Ng, G. C. F., & Henry, C. J. (2020). Physicochemical characteristics of green banana flour and its use in the development of konjac-green banana noodles. *Journal of Food Science*, *85*(10), 3026–3033. https://doi.org/10.1111/1750-3841.15458

Yu, T., Zheng, Y. P., Tan, J. C., Xiong, W. J., Wang, Y., & Lin, L. (2017). Effects of Prebiotics and Synbiotics on Functional Constipation. *American Journal of the Medical Sciences*, *353*(3), 282–292. https://doi.org/10.1016/j.amjms.2016.09.014

Yue, Q., Li, M., Liu, C., Li, L., Zheng, X., & Bian, K. (2020). Extensional rheological properties in mixed and fermented / rested dough and relationships with steamed bread quality. *Journal of Cereal Science*, *93*, 102968. https://doi.org/10.1016/j.jcs.2020.102968

Yulifianti, R., Ginting, E., & Utomo, J. S. (2012). Tepung Kasava Modifikasi Sebagai Bahan Substitusi Terigu Mendukung Diversifikasi Pangan. *Buletin Palawija*, *0*(23), 1–12. https://doi.org/10.21082/bulpa.v0n23.2012.p1-12

Zhang, B., Qiao, D., Zhao, S., Lin, Q., Wang, J., & Xie, F. (2021). Starch-based food matrices containing protein: Recent understanding of morphology, structure, and properties. *Trends in Food Science and Technology*, *114*, 212–231. https://doi.org/10.1016/j.tifs.2021.05.033

UNIVERSITAS
GADJAH MADA
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Universitas Gadjah Mada, 2024 | Diunduh dari http://etd.repository.ugm.ac.id/

Zhang, L., Zeng, L., Wang, X., He, J., & Wang, Q. (2020). The influence of Konjac glucomannan on the functional and structural properties of wheat starch. *Food Science and Nutrition*, *8*(6), 2959–2967. https://doi.org/https://doi.org/10.1002/fsn3.1598

Zhang, Y., Zhao, Y., Yang, W., Song, G., Zhong, P., Ren, Y., & Zhong, G. (2022). Structural complexity of Konjac glucomannan and its derivatives governs the diversity and outputs of gut microbiota. *Carbohydrate Polymers*, *292*, 119639. https://doi.org/10.1016/j.carbpol.2022.119639

Zhao, D., Zhang, X., Wang, Y., Nan, J., Ping, W., & Ge, J. (2020). Purification, biochemical and secondary structural characterisation of β-mannanase from Lactobacillus casei HDS-01 and juice clarification potentia.pdf. *International Journal of Biological Macromolecules*, *154*, 826–834. https://doi.org/10.1016/j.ijbiomac.2020.03.157

Zhao, Y., Jayachandran, M., & Xu, B. (2020). In vivo antioxidant and anti-inflammatory effects of soluble dietary fiber Konjac glucomannan in type-2 diabetic rats. *International Journal of Biological Macromolecules*, *159*, 1186–1196. https://doi.org/10.1016/j.ijbiomac.2020.05.105

Zhou, D. N., Zhang, B., Chen, B., & Chen, H. Q. (2017). Effects of oligosaccharides on pasting, thermal and rheological properties of sweet potato starch. *Food Chemistry*, *230*, 516–523. https://doi.org/10.1016/j.foodchem.2017.03.088

Zhou, Y., Cao, H., Hou, M., Nirasawa, S., Tatsumi, E., Foster, T. J., & Cheng, Y. (2013). Effect of konjac glucomannan on physical and sensory properties of noodles made from low-protein wheat flour. *Food Research International*, *51*(2), 879–885. https://doi.org/10.1016/j.foodres.2013.02.002

Zhou, Y., Dhital, S., Zhao, C., Ye, F., Chen, J., & Zhao, G. (2021). Dietary fiber-gluten protein interaction in wheat flour dough: Analysis, consequences and proposed mechanisms. *Food Hydrocolloids*, *111*, 106203. https://doi.org/10.1016/j.foodhyd.2020.106203

Zhu, F. (2018). Modifications of konjac glucomannan for diverse applications. *Food Chemistry*, *256*, 419–426. https://doi.org/10.1016/j.foodchem.2018.02.151

Zhu, F., & Zhang, Y. (2019). Effect of konjac glucomannan on physicochemical properties of quinoa and maize starches. *Cereal Chemistry*, *00*, 1–7. https://doi.org/10.1002/cche.10188

Zoulias, E. I., Oreopoulou, V., & Tzia, C. (2002). Textural properties of low-fat cookies containing carbohydrate- or protein-based fat replacers. *Journal of Food Engineering*, *55*(4), 337–342. https://doi.org/10.1016/S0260-8774(02)00111-5

Zoulias, E. I., Piknis, S., & Oreopoulou, V. (2000). Effect of sugar replacement by polyols and acesulfame-K on properties of low-fat cookies. *Journal of the*

UNIVERSITAS
GADJAH MADA
Evaluasi Sifat Fisikokimia, Struktur, dan Potensi Prebiotik Kukis Mocaf dengan Penambahan Glukomanan Porang (Amorphophallus oncophyllus)
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Science of Food and Agriculture, *80*(14), 2049–2056. https://doi.org/10.1002/1097-0010(200011)80:14<2049::AID-JSFA735>3.0.CO;2-Q