

REFERENCES

- Abdullah, M. Z., Mohd Ali, J., Abolmaesoomi, M., Abdul-Rahman, P. S., & Hashim, O. H. (2017). Anti-proliferative, in vitro antioxidant, and cellular antioxidant activities of the leaf extracts from *Polygonum minus* Huds: Effects of solvent polarity. *International Journal of Food Properties*, 20(sup1), 846–862. doi:10.1080/10942912.2017.1315
- Adiletta, G., Di Matteo, M., & Petriccione, M. (2021). Multifunctional Role of Chitosan Edible Coatings on Antioxidant Systems in Fruit Crops: A Review. *International journal of molecular sciences*, 22(5), 2633. <https://doi.org/10.3390/ijms22052633>
- Aevela-Bustillos, R. J., Olsen, C. W., Olson. D. A., Chiou, B., Yee, E., Bechtel. P. J., & Mchugh, T. H. (2006). Water Vapor Permeability of Mammalian and Fish Gelatin Films. *JOURNAL OF FOOD SCIENCE—Vol. 71, Nr. 4*,
- Ahmad, R., Baharum, S., Bunawan, H., Lee, M., Mohd Noor, N., Rohani, E., Ilias, N., & Zin, N. (2014). Volatile profiling of aromatic traditional medicinal plant, *Polygonum minus* in different tissues and its biological activities. *Molecules*, 19(11), 19220–19242. <https://doi.org/10.3390/molecules191119220>
- Ahmad, R., Sahidin, I., Taher, M., Low, C., Noor, N. M., Sillapachaiyaporn, C., Chuchawankul, S., Sarachana, T., Tencomnao, T., Iskandar, F., Rajab, N. F., & Baharum, S. N. (2018). Polygonumins A, a newly isolated compound from the stem of *Polygonum minus* Huds with potential medicinal activities. *Scientific reports*, 8(1), 4202. <https://doi.org/10.1038/s41598-018-22485-5>
- Ahmed, I., Lin, H., Zou, L., Brody, A. L., Li, Z., Qazi, I. M., ... Lv, L. (2017). A comprehensive review on the application of active packaging technologies to muscle foods. *Food Control*, 82, 163–178. doi:10.1016/j.foodcont.2017.0
- Alexandre, E. M. C., Lourenco R. V., Bittante, A. M. Q. B., Moraes, I. C. F., & Sobral, P. J. A., (2016). Gelatin-based film reinforced with montmorillonite and activated with nanoemulsion of ginger essential oil for food packaging applications. *Food Packaging and Shelf Life*, 10, 97-96.

- Ali, A., Muhammad, M. T. M., Sijam, K., & Siddiqui, Y. (2010). Potential of chitosan coating in delaying the postharvest anthracnose (*Colletotrichum gloeosporioides* Penz.) of Eksotika II papaya.
- Aljilji, Ajka & Mahmutovic, Omer & Bašić, Hazim & Prazina, Nedzad. (2020). Mechanical properties of dried fruit packaging materials. 8. 2547-2552. doi:10.21533/pen.v8i4.1487.g736.
- Arcan, I.; Yemenicio glu, A (2011). Incorporating phenolic compounds opens a new perspective to use zein films as flexible bioactivepackaging materials. Food Res. Int. 2011,44, 550–556. Chan, H.M.; Nyam, K.L.; Yusof, Y.A.; Pui, L.P. (2020). Investigation of properties of polysaccharide-based edible film with functionalMelastoma Malabathricum extract. Carpathian J. Food Sci. Technol. 2020,12, 120–134.
- Arifin, H. R., Indiarto, R., & Ciptaningtiyas, D. (2020). Physical Characteristics of Edible film from Atarés, L., & Chiralt, A. (2016). Essential oils as additives in biodegradable films and coatings for active food packaging. Trends in Food Science and Technology, 48, 51–62. doi:10.1016/j.tifs.2015.12.001
- Aydin, G., & Zorlu, E. B. (2022). Characterisation and antibacterial properties of novel biodegradable films based on alginate and Roselle (*Hibiscus Sabdariffa* L.) extract. Waste and Biomass Valorization, 13(6), 2991–3002. doi:<https://doi.org/10.1007/s12649-022-01710-3>
- Bai, J., Zhang, Y., Tang, C., Hou, Y., Ai, X., Chen, X., ... Meng, X. (2021). Gallic acid: Pharmacological activities and molecular mechanisms involved in inflammation-related diseases. Biomedicine & Pharmacotherapy, 133, 110985. doi:10.1016/j.biopha.2020.1109
- Benbettaïeb, N., Chambin, O., Assifaoui, A., Al-Assaf, S., Karbowiak, T., & Debeaufort, F. (2016). Release of coumarin incorporated into chitosan-gelatin irradiated films. Food Hydrocolloids, 56, 266-276.
- Benbettaïeb, N., Kurek, M., Bornaz, S., & Debeaufort, F. (2014). Barrier, structural and mechanical properties of bovine gelatin-chitosan blend films related to biopolymer

- interactions. *Journal of the Science of Food and Agriculture*, 94(12), 2409–2419. doi:10.1002/jsfa.6570
- Biji, K. B., Ravishankar, C. N., Mohan, C. O., & Srinivasa Gopal, T. K. (2015). Smart packaging systems for food applications: a review. *Journal of food science and technology*, 52(10), 6125–6135. <https://doi.org/10.1007/s13197-015-1766-7>
- Bonilla, J., & Sobral, P. J. A. (2016). Investigation of the physicochemical, antimicrobial and antioxidant properties of gelatin-chitosan edible film mixed with plant ethanolic extracts. *Food Bioscience*, 16, 17–25. doi:10.1016/j.fbio.2016.07.003
- Borges, A., Ferreira, C., Saavedra, M. J., & Simões, M. (2013). Antibacterial Activity and Mode of Action of Ferulic and Gallic Acids Against Pathogenic Bacteria. *Microbial Drug Resistance*, 19(4), 256–265. doi:10.1089/mdr.2012.0244
- Cardoso, G. P., Dutra, M. P., Fontes, P. R., Ramos, A. de L. S., Gomide, L. A. de M., & Ramos, E. M. (2016). Selection of a chitosan gelatin-based edible coating for color preservation of beef in retail display. *Meat Science*, 114, 85–94.
- Carraher, C. E., Hess, G., & Sperling, L. H. (1987). Polymer nomenclature - or what's in a name? *Journal of Chemical Education*, 64(1), 36–39. doi:10.1021/ed064p36
- Chaudhary, V., Thakur, N., & Bishnoi, S. (2022). Edible packaging: A vehicle for functional bioactive compounds. *Edible Food Packaging*, 489–512. https://doi.org/10.1007/978-981-16-2383-7_26
- Chawla, R., Sivakumar, S., & Kaur, H. (2021). Antimicrobial edible films in food packaging: Current scenario and recent nanotechnological advancements- a review. *Carbohydrate Polymer Technologies and Applications*, 2, 100024. doi:10.1016/j.carpta.2020.1000
- Chen, Z., Mo, X., He, C., & Wang, H. (2008). Intermolecular interactions in electrospun collagen-chitosan nanofibers. *Carbohydrate Polymers*, 72, 410-418.
- Chisenga, S. M., Tolesa, G. N., & Workneh, T. S. (2020). Biodegradable Food Packaging Materials and Prospects of the Fourth Industrial Revolution for Tomato Fruit and Product Handling.

- Christapher, P. V., Parasuraman, S., Christina, J. M., Asmawi, M. Z., & Vikneswaran, M. (2015). Review on Polygonum minus. Huds, a commonly used food additive in Southeast Asia. *Pharmacognosy research*, 7(1), 1–6. <https://doi.org/10.4103/0974-8490.147125>
- Christapher, P. V., Parasuraman, S., Raj, P. V., Mohammed Saghir, S. A., Asmawi, M. Z., & Vikneswaran, M. (2016). Influence of Extracting Solvent on Pharmacological Activity and Cytotoxicity of Polygonum minus, a Commonly Consumed Herb in Southeast Asia. *Pharmacognosy magazine*, 12(Suppl 4), S424–S430. <https://doi.org/10.4103/0973-1296.191451>
- Commission Regulation (EU) (2011) *Lex - 32011R0010 - en - EUR-lex, EUR*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011R0010&qid=1681204755064> (Accessed: 14 June 2023).
- Davis, S. P. (2011). Chitosan: Manufacture, Properties, and Usage (Biotechnology in Agriculture, Dahham, S., Tabana, Y., Iqbal, M., Ahamed, M., Ezzat, M., Majid, A., & Majid, A. (2015). The Anticancer, Antioxidant and Antimicrobial Properties of the Sesquiterpene β-Caryophyllene from the Essential Oil of Aquilaria crassna. *Molecules*, 20(7), 11808–11829. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/molecules200711808>
- Dawson, P. L., & Acton, J. C. (2018). Impact of proteins on food color. *Proteins in Food Processing: Second Edition (Second Edition)* (pp. 599-638). Elsevier Ltd. doi:10.1016/B978-0-08-100722-8.00023-1
- Derek W., & Gerriets, V. (2022). Penicillin - statpearls - NCBI bookshelf. <https://www.ncbi.nlm.nih.gov/books/NBK554560/>
- Díaz-Montes, E., & Castro-Muñoz, R. (2021). Edible Films and Coatings as Food-Quality Preservers: An Overview. *Foods* (Basel, Switzerland), 10(2), 249. <https://doi.org/10.3390/foods10020249>
- Dordevic, S., Dordevic, D., Sedlacek, P., Kalina, M., Tesikova, K., Antonic, B., Tremlova, B., Treml, J., Nejezchlebova, M., Vapenka, L., Rajchl, A., & Bulakova, M. (2021). Incorporation of Natural Blueberry, Red Grapes and Parsley Extract By-Products into the Production of

- Chitosan Edible Films. Polymers, 13(19), 3388.
<https://doi.org/10.3390/polym13193388>
- Dzoyem, J., NKuite, A., Kuete, V., Tala, M., Wabo, H., Guru, S., ... Tan, N.-H. (2012). Cytotoxicity and Antimicrobial Activity of the Methanol Extract and Compounds from *Polygonum limbatum*. *Planta Medica*, 78(08), 787–792. doi:10.1055/s-0031-1298431
- Ekrami, M., & Emam-Djomeh, Z. (2013). Water Vapor Permeability, Optical and Mechanical Properties of Poly(Lactic Acid) Composites for Use in Food Packaging Films. *Scientific reports*, 7, 46767. <https://doi.org/10.1038/srep46767>
- El-Hadi A. M. (2017). Increase the elongation at break of poly (lactic acid) composites for use in food packaging films. *Scientific reports*, 7, 46767. <https://doi.org/10.1038/srep46767>
- Elsabee, M. Z., & Abdou, E. S. (2013). Chitosan based edible films and coatings: A review. *Materials Science and Engineering: C*, 33(4), 1819–1841. doi:10.1016/j.msec.2013.01.010
- Fakhouri, F. M., Martelli, S. M., Caon, T., Velasco, J. I., & Mei, L. H. I. (2015). Edible films and coatings based on starch/gelatin: Film properties and effect of coatings on quality of refrigerated Red Crimson grapes. *Postharvest Biology and Technology*, 109, 57-64.
- Farzaneh, V., & Carvalho, I. S. (2015). A review of the health benefit potentials of herbal plant infusions and their mechanism of actions. *Industrial Crops and Products*, 65, 247–258. doi:10.1016/j.indcrop.2014.10.057
- Galus, S., & Kadzińska, J. (2016). Moisture Sensitivity, Optical, Mechanical and Structural Properties of Whey Protein-Based Edible Films Incorporated with Rapeseed Oil. *Food technology and biotechnology*, 54(1), 78–89. <https://doi.org/10.17113/ftb.54.01.16.3889>
- Ghaderi, J., Hosseini, S. F., Keyvani, N., & Gómez-Guillén, M. C. (2019). Polymer blending effects on the physicochemical and structural features of the chitosan/poly(vinyl alcohol)/fish gelatin ternary biodegradable films. *Food Hydrocolloids*. doi:10.1016/j.foodhyd.2019.04
- Goy, R. C., Britto, D. D., & Assis, O. B. G. (2009). A Review of the Antimicrobial Activity of Chitosan. *Polímeros*, 19(3), 241–247.
- Gyawali, R., & Ibrahim, S. A. (2014). Natural products as antimicrobial agents. *Food Control*, 46, 412–429. doi:10.1016/j.foodcont.2014.05.047

- Han, J. H. (2013). Emerging Technologies in Food Packaging. Plastic Films in Food Packaging, 121–126.
- Handayasaki, F., Suyatma, N. E., & Nurjanah, S. (2019). Physiochemical and antibacterial analysis of gelatin–chitosan edible film with the addition of nitrite and garlic essential oil by response surface methodology. *Journal of Food Processing and Preservation*, 43(12). doi:10.1111/jfpp.14265
- Hopewell, J., Dvorak, R., & Kosior, E. (2009). Plastics recycling: Challenges and opportunities. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1526), 2115–2126. <https://doi.org/10.1098/rstb.2008.0311>
- Hoque, M. S., Benjakul, S., & Prodpran, T. (2011). Properties of film from cuttlefish (*Sepia pharaonis*) skin gelatin incorporated with cinnamon, clove and star anise extracts. *Food Hydrocolloids*, 25, 1085e1097.
- Hosseini, S. F., Rezaei, M., Zandi, M., & Ghavi, F. F. (2013). Preparation and functional properties of fish gelatin–chitosan blend edible films. *Food Chemistry*, 136(3-4), 1490–1495. doi:10.1016/j.foodchem.2012.09
- Hossain, S. I., Saha, S. C., & Deplazes, E. (2021). Phenolic compounds alter the ion permeability of phospholipid bilayers via specific lipid interactions. *Physical Chemistry Chemical Physics*, 23(39), 22352–22366. <https://doi.org/10.1039/d1cp03250j>
- Imelda, F., Faridah, D. N., & Kusumaningrum, H. D. 2014. Bacterial inhibition and cell leakage by extract of *Polygonum minus* Huds. leaves. *International Food Research Journal* 21: 553–560. Industry and Medicine) (UK ed.). Nova Science Publishers, Inc International Journal of Food Science, 2020, 1–17.
- Jaróz, m E., Kulawik, P., Guzik, P., & Duda, I. (2019). The verification of intelligent properties of furcellaran films with plant extracts on the stored fresh Atlantic mackerel during storage at 2 °C. *Food Hydrocolloids*, 97, 105211. doi:10.1016/J.FOODHYD.2019.105211
- Japanesse Standards Association 2. (1975). Japanese Industrial Standard 1707.
- Ju, A., & Song, K. Bin. (2019). Incorporation of yellow onion peel extract into the funoran-based biodegradable films as an antioxidant packaging material. *International Journal of Food Science and Technology*, 55(4), 1671–1678. doi:10.1111/ijfs.14436

- Ju, A., & Song, K. Bin. (2020). Active biodegradable films based on water soluble polysaccharides from white jelly mushroom (*Tremella fuciformis*) containing roasted peanut skin extract. *LWT*, 126, 109293. doi:10.1016/J.LWT.2020.109293
- Kaewprachu, P., Rungraeng, N., Osako, K., & Rawdkuen, S. (2017). Properties of fish myofibrillar protein film incorporated with catechin-Kradon extract. *Food Packaging and Shelf Life*, 13, 56–65. doi:10.1016/J.FPSL.2017.07.003
- Kalkan, S., Otağ, M. R., & Engin, M. S. (2020). Physicochemical and bioactive properties of edible methylcellulose films containing *Rheum ribes* L. extract. *Food Chemistry*, 307, 125524. doi:10.1016/J.FOODCHEM.2019.125524
- Kan, J., Liu, J., Yong, H., Liu, Y., Qin, Y., & Liu, J. (2019). Development of active packaging based on chitosan-gelatin blend films functionalized with Chinese hawthorn (*Crataegus pinnatifida*) fruit extract. *International Journal of Biological Macromolecules*. doi:10.1016/j.ijbiomac.2019.0
- Kanatt, S. R., Rao, M. S., Chawla, S. P., Sharma, A. (2012). Active chitosan-polyvinyl alcohol films with natural extracts. *Food Hydrocolloids* 29, 290-297
- Kaya, M., Khadem, S., Cakmak, Y. S., Mujtaba, M., Ilk, S., Akyuz, L., Salaberria, A. M., Labidi, J., Abdulqadir, A. H., & Deligöz, E. (2018). Antioxidative and antimicrobial edible chitosan films blended with stem, leaf and seed extracts of *pistacia terebinthus* for active food packaging. *RSC Advances*, 8(8), 3941–3950. <https://doi.org/10.1039/c7ra12070b>
- Kola, V. (2020). Plant extracts as additives in biodegradable films and coatings in active food packaging: Effects and applications. *UNIVERSIDADE DO ALGARVE FACULDADE DE CIÊNCIAS E TECNOLOGIA*.
- Kong, I., Heng, Z. W., & Pui, L. P. (2022). Development of chitosan edible film incorporated with curry leaf and Kesum for the packaging of Chicken Breast Meat. *Asia Pacific Journal of Molecular Biology and Biotechnology*, 91–104. <https://doi.org/10.35118/apjmbb.2022.030.3.08>
- Kong, Ianne & Lamudji, Ivana & Angkow, Kathleen & Insani, Rayyane & Mas, Muhammad & Pui, Liew Phing. (2023). Application of Edible Film with Asian Plant Extracts as an Innovative Food Packaging: A Review. *Coatings*. 13. 245. 10.3390/coatings13020245.

- Kong, M., Chen, X. G., Xing, K., & Park, H. J. (2010). Antimicrobial properties of chitosan and mode of action: A state of the art review. *International Journal of Food Microbiology*, 144(1), 51–63. doi:10.1016/j.ijfoodmicro.2010
- Kurek, M., Ščetar, M., Voilley, A., Galić, K., & Debeaufort, F. (2012). Barrier properties of chitosan coated polyethylene. *Journal of Membrane Science*, 403-404, 162–168. doi:10.1016/j.memsci.2012.02.0
- Khushboogoyal (2021) Diffusion in solids, liquids, and gases, GeeksforGeeks. Available at: <https://www.geeksforgeeks.org/diffusion-in-solids-liquids-and-gases/> (Accessed: 15 June 2023).
- Le, T., Maki, H., Okazaki, E., Osako, K., & Takahashi, K. (2018). Influence of various phenolic compounds on properties of gelatin film prepared from horse mackerel trachurus japonicus scales. *Journal of Food Science*, 83(7), 1888–1895. <https://doi.org/10.1111/1750-3841.14193>
- Lestari, R. B., Permadi, E., & Harahap, R. P. (2020). Decrease Quality during Storage Packaged Beef Sausage Edible Coating by Durian Seeds Starch-Chitosan with the Addition of Kesum Leaf Extract. *IOP Conference Series: Earth and Environmental Science*, 478, 012036. doi:10.1088/1755-1315/478/1/012036
- Lestari, R., Hartanti, L., & Permadi, E. (2020). EFFECTS OF KESUM LEAF EXTRACT SUPPLEMENTATION ON CHARACTERISTICS OF DURIAN SEEDS STARCH (DURIO ZIBETHINUS) - CHITOSAN EDIBLE FILM. *Scientific Study and Research: Chemistry and Chemical Engineering*. 21. 473-482.
- Liu, G., Song, Z., Yang, X., Gao, Y., Wang, C., & Sun, B. (2016). Antibacterial mechanism of bifidocin A, a novel broad-spectrum bacteriocin produced by *Bifidobacterium animalis* BB04. *Food Control*, 62, 309–316. doi:10.1016/j.foodcont.2015.10
- Lola, G. (2016, August 22). Edible food packaging made from milk. STEAM Register - Heating up S.T.E.M. and making STEAM. Retrieved March 22, 2023, from <https://steamregister.com/edible-food-packaging-made-from-milk/>
- Lu, Y., Luo, Q., Chu, Y., Tao, N., Deng, S., Wang, L., & Li, L. (2022). Application of gelatin in food packaging: A Review. *Polymers*, 14(3), 436. <https://doi.org/10.3390/polym14030436>

- Ma, X., Zhuang, X., & Ma, G. (2020). Transparent Windows on Food Packaging Do Not Always Capture Attention and Increase Purchase Intention. *Frontiers in psychology*, 11, 593690. <https://doi.org/10.3389/fpsyg.2020.593690>
- Martins, V. G., Romani, V. P., Martins, P. C., & Filipini, G. da S. (2019). Innovative packaging that saves food. *Saving Food* (pp. 172-202). doi:10.1016/b978-0-12-815357-4.00006-7
- Melro, E., Antunes, F. E., da Silva, G. J., Cruz, I., Ramos, P. E., Carvalho, F., & Alves, L. (2020). Chitosan Films in Food Applications. Tuning Film Properties by Changing Acidic Dissolution Conditions. *Polymers*, 13(1), 1
- Miltz J, Passy N, Mannheim CH. Trends and applications of active packaging systems. In: Jagerstad M, Ohlsson M, editors. AckermanP. London, England: Food and packaging materials-Chemical interaction. The Royal Society of Chemistry; 1995. pp. 201–210
- Modified Breadfruit Starch (*Artocarpus altilis* F.) with Glycerol. IOP Conference Series:Earth and Environmental Science, 443(1), 012028
- Mohapatra, S. S., Dwibedy, S. K., & Padhy, I. (2021). Polymyxins, the last-resort antibiotics: Mode of action, resistance emergence, and potential solutions. *Journal of biosciences*, 46(3), 85. <https://doi.org/10.1007/s12038-021-00209-8>
- Moeini, A. et al. (2022) “Edible polymers and secondary bioactive compounds for food packaging applications: Antimicrobial, mechanical, and gas barrier properties,” *Polymers*, 14(12), p. 2395. Available at: <https://doi.org/10.3390/polym14122395>.
- MOO, C. H. E. W.-L. I., YANG, S. H. U. N.-K. A. I., OSMAN, M. O. H. D.-A. Z. U. R. A. I. D. I., YUSWAN, M. O. H. D. H. A. F. I. S., LOH, J. I. U. N.-Y. A. N., LIM, W. E. I.-M. E. N. G., LIM, S. W. E. E.-H. U. A.-E. R. I. N., & LAI, K. O. K.-S. O. N. G. (2020). Antibacterial activity and mode of action of β -caryophyllene on bacillus cereus. *Polish Journal of Microbiology*, 69(1), 49–54. <https://doi.org/10.33073/pjm-2020-007>
- Munir, S., Hu, Y., Liu, Y., & Xiong, S. (2019). Enhanced properties of silver carp surimi-based edible films incorporated with pomegranate peel and grape seed extracts under acidic condition. *Food Packaging and Shelf Life*, 19, 114–120. doi:10.1016/J.FPSL.2018.12.001
- Nagarajan, M., Rajasekaran, B., Benjakul, S., & Venkatachalam, K. (2021). Influence of chitosan-gelatin edible coating incorporated with longkong pericarp extract on

- refrigerated black tiger Shrimp (*Penaeus monodon*). Current research in food science, 4, 345–353. <https://doi.org/10.1016/j.crfb.2021.05.003>
- Naseri, H. R., Beigmohammadi, F., Mohammadi, R., & Sadeghi, E. (2020). Production and characterization of edible film based on gelatin–chitosan containing *Ferulago angulata* essential oil and its application in the prolongation of the shelf life of turkey meat. *Journal of Food Processing and Preservation*. doi:10.1111/jfpp.14558
- Nemazifard, M., Kavoosi, G., Marzban, Z., & Ezedi, N. (2017). Physical, mechanical, water binding, and antioxidant properties of cellulose dispersions and cellulose film incorporated with pomegranate seed extract. *International Journal of Food Properties*, 20(2), 1501–1514. doi:10.1080/10942912.2016.1219369
- Nešić, A., Cabrera-Barjas, G., Dimitrijević-Branković, S., Davidović, S., Radovanović, N., & Delattre, C. (2019). Prospect of Polysaccharide-Based Materials as Advanced Food Packaging. *Molecules*, 25(1), 135.
- Nguyen, T. T., Thi Dao, U. T., Thi Bui, Q. P., Bach, G. L., Ha Thuc, C. N., & Ha Thuc, H. (2020). Enhanced antimicrobial activities and physicochemical properties of edible film based on chitosan incorporated with *Sonneratia caseolaris* (L.) Engl. leaf extract. *Progress in Organic Coatings*, 140, 105487. doi:10.1016/J.PORGCOAT.2019.105487
- Nieto G. (2020). How Are Medicinal Plants Useful When Added to Foods?. *Medicines* (Basel, Switzerland), 7(9), 58. <https://doi.org/10.3390/medicines7090058>
- Nowzari, F., Shábanpour, B., & Ojagh, S. M. (2013). Comparison of chitosan–gelatin composite and bilayer coating and film effect on the quality of refrigerated rainbow trout. *Food Chemistry*, 141(3), 1667–1672. doi:10.1016/j.foodchem.2013.0
- Olabarrieta, I. (2005). STRATEGIES TO IMPROVE THE AGING, BARRIER AND MECHANICAL PROPERTIES OF CHITOSAN, WHEY AND WHEAT GLUTEN PROTEIN FILMS. KTH Fibre and Polymer Technology
- Opitz, S., Kunert, G., & Gershenson, J. (2008). Increased terpenoid accumulation in cotton (*Gossypium hirsutum*) foliage is a general wound response. *Journal of Chemical Ecology*, 34, 508–522.

Optimization Using Response Surface Methodology. *Journal of Food Science and Technology*, 52(5), 2530–2543

Ortiz-Zarama, M. A., Jiménez-Aparicio, A. R., & Solorza-Feria, J. (2016). Obtainment and partial characterization of biodegradable gelatin films with tannic acid, bentonite and glycerol. *Journal of the Science of Food and Agriculture*, 96(10), 3424–3431. doi:10.1002/jsfa.7524

Oong , G. C., & Tadi, P. (2022, July 4). Chloramphenicol - StatPearls - NCBI Bookshelf. Chloramphenicol. <https://www.ncbi.nlm.nih.gov/books/NBK555966/>

Pereda, M., Ponce, A. G., Marcovich, N. E., Ruseckaite, R. A., & Martucci, J. F. (2011). Chitosan-gelatin composites and bi-layer films with potential antimicrobial activity. *Food Hydrocolloids*, 25(5), 1372–1381. doi:10.1016/j.foodhyd.2011.01

Pop, O. L., Pop, C. R., Dufrechou, M., Vodnar, D. C., Socaci, S. A., Dulf, F. V., Minervini, F., & Suharoschi, R. (2019). Edible films and coatings functionalization by Probiotic Incorporation: A Review. *Polymers*, 12(1), 12. <https://doi.org/10.3390/polym12010012>

Poverenov, E. et al. (2014) “Effects of a composite chitosan–gelatin edible coating on postharvest quality and storability of Red Bell peppers,” *Postharvest Biology and Technology*, 96, pp. 106–109. Available at: <https://doi.org/10.1016/j.postharvbio.2014.05.015>.

Pranoto, Y., Lee, C. M., & Park, H. J. (2007). Characterizations of fish gelatin films added with gellan and k-carrageenan. *LWT – Food Science and Technology*, 40, 766–774.

Prodpran, T., Benjakul, S., & Phatcharat, S. (2012). Effect of phenolic compounds on protein cross-linking and properties of film from fish myofibrillar protein. *International Journal of Biological Macromolecules*, 51(5), 774–782. doi:10.1016/j.ijbiomac.2012.07.

Qiao, C., Ma, X., Zhang, J., & Yao, J. (2017). Molecular interactions in gelatin/chitosan composite films. *Food Chemistry*, 235, 45–50. doi:10.1016/j.foodchem.2017.05

Ramos, M., Valdés, A., Beltrán, A., & Garrigós, M. (2016). Gelatin-based films and coatings for Food Packaging Applications. *Coatings*, 6(4), 41. <https://doi.org/10.3390/coatings6040041>

- Ramziia, S., Ma, H., Yao, Y., Wei, K., & Huang, Y. (2017). Enhanced antioxidant activity of fish gelatin-chitosan edible films incorporated with procyanidin. *Journal of Applied Polymer Science*, 135(10), 45781. doi:10.1002/app.45781
- Rasha, S., Jiyauddin, K., Viviganath, K., Fadli, A., & Eddy, Y. (2014). Effect of Different Extraction Techniques of *Persicaria odorata* Extracts Utilizing Anti-bacterial Bioassay. *British Journal of Pharmaceutical Research* 4(18): 2146-2154, 2014. ISSN: 2231-2919
- Riaz, A., Lagnika, C., Luo, H., Nie, M., Dai, Z., Liu, C., ... Song, J. (2020). Effect of Chinese chives (*Allium tuberosum*) addition to carboxymethyl cellulose based food packaging films. *Carbohydrate Polymers*, 235, 115944. doi:10.1016/J.CARBPOL.2020.115944
- Ridzuan, P. M., Hamzah, H. A., Shahb, A. Hassanc, M. N., & Roesnitad, B. (2014). Synergistic effects of *Persicaria odorata* (Daun Kesom) leaf extracts with standard antibiotics on pathogenic bacteria
- Rivas da Silva, A. C., Lopes, P. M., Barros de Azevedo, M. M., Costa, D. C., Alviano, C. S., & Alviano, D. S. (2012). Biological activities of α -pinene and β -pinene enantiomers. *Molecules* (Basel, Switzerland), 17(6), 6305–6316. <https://doi.org/10.3390/molecules17066305>
- Rodrigues, M. Á. V., Bertolo, M. R. V., Marangon, C. A., Martins, V. C. A., & de Guzzi Plepis, A. M. (2020). Chitosan and gelatin materials incorporated with phenolic extracts of grape seed and jabuticaba peel: Rheological, physicochemical, antioxidant, antimicrobial and barrier properties. *International Journal of Biological Macromolecules*. doi:10.1016/j.ijbiomac.2020.05
- Rooney ML (1995) Overview of active food packaging. In: Rooney ML (ed) Active food packaging. Blackie Academic & Professional, Glasgow, pp 1–37
- Sadegh-Hassani, F., & Mohammadi Nafchi, A. (2014). Preparation and characterization of bionanocomposite films based on potato starch/halloysite nanoclay. *International Journal of Biological Macromolecules*, 67, 458–462. doi:10.1016/j.ijbiomac.2014.04
- Said, N. S., & Sarbon, N. M. (2022). Physical and mechanical characteristics of gelatin-based films as a potential food packaging material: A Review. *Membranes*, 12(5), 442. <https://doi.org/10.3390/membranes12050442>

- Shaikh, S., Yaqoob, M., & Aggarwal, P. (2021). An overview of biodegradable packaging in food industry. *Current Research in Food Science*, 4, 503–520. <https://doi.org/10.1016/j.crf.2021.07.005>
- Silva, V.D.M.; Macedo, M.C.C.; Rodrigues, C.G.; Santos, A.N.; Loyola, A.C.F.; Fante, C.A. (2020). Biodegradable edible films of ripebanana peel and starch enriched with extract of *Eriobotrya japonica* leaves. *Food Biosci.* 2020,38, 100750.
- Singh, T. P., Chatli, M. K., & Sahoo, J. (2014). Development of Chitosan Based Edible Films: Process
- Singh, T. P., Chatli, M. K., & Sahoo, J. (2015). Development of chitosan based edible films: process optimization using response surface methodology. *Journal of food science and technology*, 52(5), 2530–2543. <https://doi.org/10.1007/s13197-014-1318-6>
- Sinha, A., & Bhargav, A. (2020). Young's modulus estimation in food samples: Effect of experimental parameters. *Mechanics & Industry*, 21(4), 404. <https://doi.org/10.1051/meca/2020025>.
- Sridhar, A., Ponnuchamy, M., Kumar, P. S., & Kapoor, A. (2020). Food preservation techniques and nanotechnology for increased shelf life of fruits, vegetables, beverages and spices: A review. *Environmental Chemistry Letters*, 19(2), 1715–1735. <https://doi.org/10.1007/s10311-020-01126-2>
- Suhag, R., Kumar, N., Petkoska, A. T., & Upadhyay, A. (2020). Film formation and deposition methods of edible coating on food products: A Review. *Food Research International*, 136, 109582. <https://doi.org/10.1016/j.foodres.2020.109582>
- Tan, L.F.; Elaine, E.; Pui, L.P.; Nyam, K.L.; Yusof, Y.A. Development of chitosan edible film incorporated with *Chrysanthemummorifolium* essential oil. *Acta Sci. Pol. Technol. Aliment.* 2021,20, 55–66
- Taylor, M. M., Lee, J., Bumanlag, L. P., Latona, R. J., Brown, E. M., & Liu, C. K. (2014). Biopolymers produced from gelatin and whey protein concentrate using polyphenols. *J. Am. Leather Chem. Assoc.* 109, 82-88.

- Thakhiew, W., Champahom, M., Devahastin, S., & Soponronnarit, S. (2015). Improvement of mechanical properties of chitosan-based films via physical treatment of film-forming solution. *Journal of Food Engineering*, 158, 66–72. doi:10.1016/j.jfoodeng.2015.0
- Thompson, R. C., Moore, C. J., vom Saal, F. S., & Swan, S. H. (2009). Plastics, the environment and human health: current consensus and future trends. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 364(1526), 2153–2166. <https://doi.org/10.1098/rstb.2009.0053>
- Trinetta, V. (2016). Edible Packaging. Reference Module in Food Science
- Vaou, N., Stavropoulou, E., Voidarou, C., Tsigalou, C., & Bezirtzoglou, E. (2021). Towards Advances in Medicinal Plant Antimicrobial Activity: A Review Study on Challenges and Future Perspectives. *Microorganisms*, 9(10), 2041. <https://doi.org/10.3390/microorganisms9102041>.
- Vikram, P., Chiruvella, K. K., Abdullah Ripain, I. H. & Arifullah, M. (2014). A recent review on phytochemical constituents and medicinal properties of kesum (*Polygonum minus* Huds.). *Asian Pacific Journal of Tropical Biomedicine*, 4(6), 430-435.
- Wang, H., Ding, F., Ma, L., & Zhang, Y. (2021). Edible films from chitosan-gelatin: Physical properties and food packaging application. *Food Bioscience*, 40, 100871.
- World Health Organization. (2015). Who's first ever global estimates of Foodborne Diseases find children under 5 account for almost one third of deaths. World Health Organization. Retrieved March 24, 2023, from <https://www.who.int/news-room/detail/03-12-2015-who-s-first-ever-global-estimates-of-foodborne-diseases-find-children-under-5-account-for-almost-one-third-of-deaths>
- Wibowo M A 2009 Anti-microbial test of methanol and diethyl ether fraction of leaves of kesum polygonum minus huds Agripura 4 26-31
- Wibowo, A. M., Parmanto, R. T., & Andriani. (2015), Uji Aktivitas Antibakteri Fraksi Metanol Daun Kesum (*Polygonum minus* Huds.) Terhadap *Shigella flexneri*.
- Wu, J., Chen, S., Ge, S., Miao, J., Li, J., & Zhang, Q. (2013). Preparation, properties and antioxidant activity of an active film from silver carp (*Hypophthalmichthys molitrix*)

- skin gelatin incorporated with green tea extract. *Food Hydrocolloids*, 32(1), 42–51. doi:10.1016/j.foodhyd.2012.11
- Wu, S., Li, G., Li, B. & Duan, H. (2022). Chitosan-based antioxidant films incorporated with root extract of *Aralia continentalis* Kitagawa for active food packaging applications. *e-Polymers*, 22(1), 125-135. <https://doi.org/10.1515/epoly-2022-0017>
- Yaldagard, M. et al. (2008). The principles of ultra high pressure technology and its application in food processing/preservation: A review of microbiological and quality aspects. *African Journal of Biotechnology*. 7. 2739-2767.
- Yan, D., Li, Y., Liu, Y., Li, N., Zhang, X., & Yan, C. (2021). Antimicrobial Properties of Chitosan and Chitosan Derivatives in the Treatment of Enteric Infections. *Molecules* (Basel, Switzerland), 26(23), 7136. <https://doi.org/10.3390/molecules26237136>
- Yasmin, R., Shah, M., Khan, S. A., & Ali, R. (2017). Gelatin nanoparticles: A potential candidate for medical applications. *Nanotechnology Reviews*, 6(2), 191–207. <https://doi.org/10.1515/ntrev-2016-0009>
- Yildirim, S., & Röcker, B. (2018). Active packaging. *Nanomaterials for Food Packaging: Materials, Processing Technologies, and Safety Issues*, 173–202. doi:10.1016/B978-0-323-51271-8.00007-3
- Yilmaz Atay, H. (2019). Antibacterial activity of chitosan-based systems. *Functional Chitosan*, 457–489. https://doi.org/10.1007/978-981-15-0263-7_15
- Yong, H., Wang, X., Zhang, X., Liu, Y., Qin, Y., & Liu, J. (2019). Effects of anthocyanin-rich purple and black eggplant extracts on the physical, antioxidant and pH-sensitive properties of chitosan film.
- Yu, D., Xu, Y., Jiang, Q., & Xia, W. (2016). Effects of chitosan coating combined with essential oils on quality and antioxidant enzyme activities of grass carp (*Ctenopharyngodon idellus*) fillets stored at 4 °C. *International Journal of Food Science & Technology*, 52(2), 404–412. doi:10.1111/ijfs.13295
- Yuan, G., Chen, X., & Li, D. (2016). Chitosan films and coatings containing essential oils: The antioxidant and antimicrobial activity, and application in food systems. *Food Research International*, 89, 117–128. doi:10.1016/j.foodres.2016.10.

- Yuan, G., Jia, Y., Pan, Y., Li, W., Wang, C., Xu, L., ... Chen, H. (2020). Preparation and characterization of shrimp shell waste protein-based films modified with oolong tea, corn silk and black soybean seed coat extracts. *Polymer Testing*, 81, 106235. doi:10.1016/J.POLYMERTESTING.2019.106235
- Yuvraj, D., Iyyappan, J., Gnanasekaran, R., Ishwarya, G., Harshini, R. P., Dhithya, V., Chandran, M., Kanishka, V., & Gomathi, K. (2021). Advances in bio food packaging – an overview. *Heliyon*, 7(9). <https://doi.org/10.1016/j.heliyon.2021.e07998>
- Zhang, W., Li, X., & Jiang, W. (2019). Development of antioxidant chitosan film with banana peels extract and its application as coating in maintaining the storage quality of apple. *International Journal of Biological Macromolecules*, 154, 1205–1214 doi:10.1016/J.IJBIOMAC.2019.10.275
- Zhang, X., Lian, H., Shi, J., Meng, W., & Peng, Y. (2020). Plant extracts such as pine nut shell, peanut shell and jujube leaf improved the antioxidant ability and gas permeability of chitosan films. *International Journal of Biological Macromolecules*, 148, 1242–1250. doi:10.1016/J.IJBIOMAC.2019.11.108
- Zhao, Y.; Li, Z.; Yang, W.; Xue, C.; Wang, Y.; Dong, J.; Xue, Y. Modification of gelatine with galla chinensis extract, a natural crosslinker. *Int. J. Food Prop.* 2016, 19, 731–744
- Zou, J. et al. (2022). Influence of Gelatin-Chitosan-Glycerol Edible Coating Incorporated with Chlorogenic Acid, Gallic Acid, and Resveratrol on the Preservation of Fresh Beef. *Foods*, 11(23), 3813. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/foods11233813>