

REFERENCES

- [1] A. Jiménez, M. J. Fabra, P. Talens, and A. Chiralt, "Edible and Biodegradable Starch Films: A Review," Aug. 2012. doi: 10.1007/s11947-012-0835-4.
- [2] X. Liu, F. Xu, X. Huang, J. Sun, J. Kan, and J. Liu, "Preparation of Hydrophobic Purple Sweet Potato-Based Intelligent Packaging Films by Stearic Acid Coating and Heat Pressing Treatments," *Foods*, vol. 14, no. 7, Apr. 2025, doi: 10.3390/foods14071276.
- [3] H. Hamzah, S. U. T. Pratiwi, A. Jabbar, A. S. Hafifah, B. A. Al-Fajri, and N. Nurhalisah, "Bioactivity Tracing of the Ethanol Extract of Bajakah Tampala (*Spatholobus littoralis* Hassk.) Typical Plant of Kalimantan Island as Antibiofilm of *Staphylococcus aureus*," *Open Access Maced J Med Sci*, vol. 11, no. A, pp. 8–14, Jan. 2023, doi: 10.3889/oamjms.2023.10676.
- [4] D. Rahmadiawan *et al.*, "Synergistic effects of *Uncaria gambir* and zinc oxide in polyvinyl alcohol films for enhanced UV and blue light shielding, antimicrobial properties, and hydrophobicity: improving application performance in sustainable packaging and protective eyewear," *RSC Adv*, vol. 15, no. 4, pp. 2766–2778, Jan. 2025, doi: 10.1039/d4ra08801h.
- [5] H. Molavi, S. Behfar, M. Ali Shariati, M. Kaviani, and S. Atarod, "A REVIEW ON BIODEGRADABLE STARCH BASED FILM," *Journal of microbiology, biotechnology and food sciences*, vol. 4, no. 5, pp. 456–461, Apr. 2015, doi: 10.15414/jmbfs.2015.4.5.456-461.
- [6] C. Sen, "Development of Starch-Polyvinyl Alcohol (PVA) Biodegradable Film: Effect of Cross-Linking Agent and Antimicrobials on Film Characteristics," 2017. [Online]. Available: <http://scholarworks.rit.edu/japr>
- [7] H. Deng *et al.*, "A review of starch/polyvinyl alcohol (PVA) blend film: A potential replacement for traditional plastic-based food packaging film," Jul. 01, 2024, *Elsevier B.V.* doi: 10.1016/j.ijbiomac.2024.132926.
- [8] L. T. Sin, W. A. W. A. Rahman, A. R. Rahmat, and A. A. Samad, "Computational modeling and experimental infrared spectroscopy of hydrogen bonding interactions in polyvinyl alcohol-starch blends," *Polymer (Guildf)*, vol. 51, no. 5, pp. 1206–1211, Mar. 2010, doi: 10.1016/j.polymer.2010.01.021.

- [9] M. Dabhi and P. J. Rathod, "Development of Potato Starch Based Biodegradable Packaging Film." [Online]. Available: <https://www.researchgate.net/publication/352673103>
- [10] E. Setyowati, E. F. Irzani, C. F. Mochtar Luthfi, and H. Hamzah, "TRACING THE ANTIBACTERIAL, ANTIFUNGAL AND ANTI-BIOFILM ACTIVITIES OF ROOT EXTRACT BAJAKAH TAMPALA (SPATHOLOBUS LITTORALIS HASSK)," *Jurnal Farmasi Sains dan Praktis*, pp. 32–41, Jan. 2024, doi: 10.31603/pharmacy.v10i1.8804.
- [11] J. C. Martins da Costa, K. S. Lima Miki, A. da Silva Ramos, and B. E. Teixeira-Costa, "Development of biodegradable films based on purple yam starch/chitosan for food application," *Heliyon*, vol. 6, no. 4, Apr. 2020, doi: 10.1016/j.heliyon.2020.e03718.
- [12] A. H. Dawam Abdu, S. Pudjirahar, M. Karina, O. Dwi Putri, and R. H. Fauziyyah, "Fabrication and Characterization of Sweet Potato Starch-based Bioplastics Plasticized with Glycerol," *Journal of Biological Sciences*, vol. 19, no. 1, pp. 57–64, Dec. 2018, doi: 10.3923/jbs.2019.57.64.
- [13] E. Franco, R. Dussán, D. P. Navia, and M. Amú, "Study of the annealing effect of starch/polyvinyl alcohol films crosslinked with glutaraldehyde," *Gels*, vol. 7, no. 4, Dec. 2021, doi: 10.3390/gels7040249.
- [14] Z. Wu *et al.*, "Preparation and application of starch/polyvinyl alcohol/citric acid ternary blend antimicrobial functional food packaging films," *Polymers (Basel)*, vol. 9, no. 3, Mar. 2017, doi: 10.3390/polym9030102.
- [15] M. Asrofi *et al.*, "Mechanical Properties of Biocomposite Films Based Polyvinyl Alcohol/Potato Starch Filled by Coffee Ground Waste," *International Journal of Agriculture and Biosciences*, vol. 13, no. 3, pp. 525–530, Sep. 2024, doi: 10.47278/journal.ijab/2024.156.
- [16] K. Gulati, S. Lal, and S. Arora, "Synthesis and characterization of PVA/Starch/CMC composite films reinforced with walnut (*Juglans regia* L.) shell flour," *SN Appl Sci*, vol. 1, no. 11, Nov. 2019, doi: 10.1007/s42452-019-1462-8.
- [17] M. H. A. Begum, M. M. Hossain, M. A. Gafur, A. N. M. H. Kabir, N. I. Tanvir, and M. R. Molla, "Preparation and characterization of polyvinyl alcohol–starch

composites reinforced with pulp,” *SN Appl Sci*, vol. 1, no. 9, Sep. 2019, doi: 10.1007/s42452-019-1111-2.

- [18] S. Phattarateera, L. Xin, C. Amphong, V. Limsamran, and P. Threepopnatkul, “Comparative studies of starch blends on the properties of PVA films,” *Carbohydrate Polymer Technologies and Applications*, vol. 6, Dec. 2023, doi: 10.1016/j.carpta.2023.100340.
- [19] Y. Yang, J. Fu, Q. Duan, H. Xie, X. Dong, and L. Yu, “Strategies and Methodologies for Improving Toughness of Starch Films,” Dec. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/foods13244036.
- [20] I. McKay, J. Vargas, L. Yang, and R. M. Felfel, “A Review of Natural Fibres and Biopolymer Composites: Progress, Limitations, and Enhancement Strategies,” Oct. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/ma17194878.
- [21] D. Y. Thimmegowda, J. Hindi, G. B. Markunti, and M. Kakunje, “Enhancement of Mechanical Properties of Natural Fiber Reinforced Polymer Composites Using Different Approaches—A Review,” May 01, 2025, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/jcs9050220.
- [22] H. Xue, L. Ji, K. Zhang, P. Wang, X. Liao, and J. Tan, “Preparation, properties, and applications of polysaccharide-based films: A comprehensive overview,” *Journal of Future Foods*, Aug. 2025, doi: 10.1016/j.jfutfo.2025.05.011.
- [23] K. H. Ozuna-Valencia *et al.*, “Improving the Properties of Polysaccharide-Based Films by Incorporation of Polyphenols Through Free Radical Grafting: A Review,” Dec. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/polysaccharides5040043.
- [24] J. Pan *et al.*, “Polysaccharide-Based Packaging Coatings and Films with Phenolic Compounds in Preservation of Fruits and Vegetables—A Review,” Dec. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/foods13233896.
- [25] T. Periyasamy, S. P. Asrafali, and J. Lee, “Recent Advances in Functional Biopolymer Films with Antimicrobial and Antioxidant Properties for Enhanced

Food Packaging,” May 01, 2025, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/polym17091257.

- [26] A. Dirpan, A. F. Ainani, and M. Djalal, “A Review on Biopolymer-Based Biodegradable Film for Food Packaging: Trends over the Last Decade and Future Research,” Jul. 01, 2023, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/polym15132781.
- [27] M. Yuan, J. Mei, and J. Xie, “Research Progress on Polysaccharide Composite Films and Coatings with Antioxidant and Antibacterial Ingredients to Extend the Shelf Life of Animal-Derived Meat,” Oct. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/coatings14101338.
- [28] J. Liu, Z. Song, Y. Wang, Y. Pei, and K. Tang, “Edible Films Based on Fish Gelatin and Soluble Soybean Polysaccharide Enriched with Tea Polyphenol for Active Food Packaging,” *Polymers (Basel)*, vol. 17, no. 16, Aug. 2025, doi: 10.3390/polym17162174.

