

# Antibacterial Activity of Fruit Extract of *Anacardium occidentale* and Seed Extract of *Mangifera indica* L.

Pratiksha R Phadke<sup>1</sup>, Hrutuja M Maydeo<sup>2</sup>, Sonu R Tanwar<sup>3</sup>, Kirti J Mhatre<sup>4</sup>

Department of Biotechnology, Mahatma Phule A.S.C. College, Panvel, Raigad, Maharashtra, India

phsdkepratiksha25@gmail.com<sup>1</sup>, kjmhatre2@gmail.com<sup>4</sup>

**Abstract:** *Mangifera indica* L. and *Anacardium occidentale* members of the Anacardiaceae family have gained the attention due to their therapeutic property. The present study evaluated the presence of phytochemicals and antibacterial activity of ethanolic and methanolic extraction of both plants. Phytochemical screening showed the presence of glycosides, saponin, flavonoid, tannin, alkaloid, steroid, phenolic compound, and triterpenoid in both solvent extracts. Gram-positive and Gram-negative organisms were found to be sensitive to the ethanolic and methanolic extraction of both plants. The MIC of mango seed extract was found to be 50 µg/ml and cashew fruit extract was 8 µg/ml. The study indicates the potential future application of mango seed & Cashew fruit extract as an antibacterial agent which would be an alternative to the current chemical antibacterial agent.

**Keywords:** Mango Seed Extract, Cashew Fruit Extract, Antibacterial Activity, MIC

## REFERENCES

- [1]. Russell, A. D., and M. J. Day. 1996. "Antibiotic and Biocide Resistance in Bacteria." *Microbios* 84(342): 45–65.
- [2]. Kittiphoom, S. 2012. "Utilization of Mango Seed." *International Food Research Journal* 19(4): 1325–35.
- [3]. A. Awad El-Gied, Amgad et al. 2012. "Antimicrobial Activities of Seed Extracts of Mango" *Advances in Microbiology* 02(04): 571–76. <http://www.scirp.org/journal/doi.aspx?DOI=10.4236/aim.2012.24074>.
- [4]. Monte, Joana et al. 2014. "Antimicrobial Activity of Selected Phytochemicals against *Escherichia Coli* and *Staphylococcus Aureus* and Their Biofilms." *Pathogens* 3(2): 473–98.
- [5]. Aiswarya.G\*, and S.Mohamed Farook . , K.H.Reza, Radhika.G. 2011. "Study for Antibacterial Activity of Cashew Apple (*Anacardium Occidentale*) Extracts." 3(1): 193–200.
- [6]. Laxmanaswami, Bhagirathi, and Asna Urooj. 2018. "Phytochemical Profile and Antimicrobial Activity of Cashew Apple (*Anacardium Occidentale* L.) Extract." *GSC Biological and Pharmaceutical Sciences* 5(3): 095–098.
- [7]. Diarra, S.S. 2014. "Potential of Mango (*Mangifera Indica* L.) Seed Kernel as a Feed Ingredient for Poultry: A Review." *World's Poultry Science Journal* 70(2): 279–88. <https://www.tandfonline.com/doi/full/10.1017/S0043933914000294>.
- [8]. Liangpanth, Mooksupang, Mae Fah, and Wirongrong Tongdeesoontorn. 2018. "Antioxidant and Antimicrobial Properties of Cashew (*Anacardium Occidentale* L.) Leaf Extracts Wirongrong Tongdeesoontorn The International Conference on Food and Applied Bioscience 2018 Proceeding Book Antioxidant and Antimicrobial Properties of Cashew (An.) (August). <https://www.researchgate.net/publication/327163443>.
- [9]. Rehab et al. 2018. "The Phytochemical and Antimicrobial Effect of *Mallus Domestica* (Apple) Dried Peel Powder Extracts on Some Animal Pathogens as Eco-Friendly." *International Journal of Veterinary Science* 7(2): 88–92.

- [10]. Abdalla, Ahmed E.M., Saeid M. Darwish, Eman H.E. Ayad, and Reham M. El-Hamahmy. 2007. "Egyptian Mango By-Product 1. Compositional Quality of Mango Seed Kernel." *Food Chemistry* 103(4): 1134–40. <https://linkinghub.elsevier.com/retrieve/pii/S0308814606008016>.
- [11]. Schiber, A., Berardini, N. and Carle, R. 2003. Identification of flavonol and xanthol glycosides from mango peels by HPLC. *Journal of Agricultural and Food Chemistry* 51: 5006-5011.
- [12]. Anandan, Satish, Namratha Pai Kotebagilu, Lohith Mysuru Shivanna, and Asna Urooj. 2017. "Inhibitory Potency of C-Glycosyl Flavonoids from *Morus Sp.* on Advanced Glycation End Products." *Journal of Biologically Active Products from Nature* 7(5): 391–400. <https://www.tandfonline.com/doi/full/10.1080/22311866.2017.1398680>.
- [13]. Karen Slinkard, Vernon L. Singleton. 1977. "Total Phenol Analysis: Automation and Comparison with Manual Methods." *American Journal of Enology and Viticulture* 28(1): 49–55.
- [14]. Kamath, K. Krishnananda, and A. Shabaraya. 2016. "Antibacterial Poly-Herbal Semisolid Formulations Containing Leaves Extracts of *Tectona Grandis*, *Mangifera Indica* and *Anacardium Occidentale*." *International Journal of Pharmaceutical Sciences and Drug Research* 8(05): 36–39. <https://innovareacademics.in/journals/index.php/ijcpr/article/view/16602/8982>.
- [15]. Toobpeng, Naritsara, Pannapa Powthong, and Pattra Suntornthiticharoen. 2017. "Evaluation Of Antioxidant And Antibacterial Activities Of Fresh And Freeze-Dried Selected Fruit Juices." *Asian Journal of Pharmaceutical and Clinical Research* 10(9): 156. <https://innovareacademics.in/journals/index.php/ajpcr/article/view/19099>.
- [16]. Monte, Joana et al. 2014. "Antimicrobial Activity of Selected Phytochemicals against *Escherichia Coli* and *Staphylococcus Aureus* and Their Biofilms." *Pathogens* 3(2): 473–98.
- [17]. A. Awad El-Gied, Amgad et al. 2012. "Antimicrobial Activities of Seed Extracts of Mango (&I&gt;Mangifera Indica&lt;I&gt; L.)" *Advances in Microbiology* 02(04): 571–76.
- [18]. Kaur, Jasminder et al. 2010. "Preliminary Investigation on the Antibacterial Activity of Mango (*Mangifera Indica L.*: Anacardiaceae) Seed Kernel." *Asian Pacific Journal of Tropical Medicine* 3(9): 707–10. <http://linkinghub.elsevier.com/retrieve/pii/S1995764510601708>.
- [19]. Elumalai, EK, M Ramachandran, T Thirumalai, and P Vinothkumar. 2011. "Antibacterial Activity of Various Leaf Extracts of *Merremia Emarginata*." *Asian Pacific Journal of Tropical Biomedicine* 1(5): 406–8. <http://linkinghub.elsevier.com/retrieve/pii/S2221169111600890>.