Antiparasitic, Antibiofilm, and Mucolytic Activities of *Mimosa pudica*: An Integrative Literature Review

***Minireview Article***

# ABSTRACT

Intestinal parasitic diseases remain a significant public health challenge, especially in tropical and subtropical regions. *Mimosa pudica L*., commonly known as “sensitive plant,” has been widely used in traditional medicine due to its antiparasitic, antibiofilm, and mucolytic properties. This study investigates, through in vitro and in vivo assays and a comprehensive literature review, the effectiveness of *M. pudica* extracts in eliminating parasites, disrupting pathogenic biofilms, and eliminating mucoid plaques. Additionally, it evaluates the phytochemical profile of the plant and its toxicity. The results confirm the multifunctional potential of Mimosa pudica, suggesting its application in intestinal detoxification protocols and chronic infection management. Furthermore, it discusses the mechanisms of action, the plant’s limitations, and outlines future clinical perspectives. The plant's ability to combat biofilms, reduce parasitic load, and assist in mucolytic processes makes it a promising candidate for integrative health approaches. While the current research provides valuable insights, further studies focusing on clinical trials to validate its

therapeutic use in human populations and explore its full potential in therapeutic interventions are necessary. The investigation into the plant's efficacy, through rigorous clinical trials, can help validate its place in modern pharmacology and expand its application for gastrointestinal health.

*Keywords: Mimosa pudica; antiparasitic; biofilm; mucilage; mucoid plaques; intestinal detoxification.*

# INTRODUCTION

Intestinal parasitic infections persist as a major challenge for global health, particularly in low- and middle-income nations where environmental and socio-economic factors—ranging from inadequate sanitation and contaminated water sources to limited access to healthcare and health education—facilitate the propagation of protozoan and helminthic diseases (Keiser and Utzinger, 2010; Farooq et al., 2011). Data from the World Health Organization estimate that billions are exposed to soil-transmitted helminths annually, with significant morbidity attributed to chronic infection, anemia, malnutrition, and impaired cognitive development, particularly among children (Motmainna et al., 2023; Joseph et al., 2017). The growing phenomenon of resistance to frontline chemotherapeutic agents, such as benzimidazoles and nitroimidazoles, is narrowing effective treatment options, making innovation in antiparasitic drug discovery increasingly urgent (Keiser and Utzinger, 2010; Ashok et al., 2022).

In this landscape, medicinal plants have re- emerged as valuable reservoirs for novel bioactive compounds capable of acting through complementary or alternative pharmacological pathways (Arpan et al., 2022; Muhammad et al., 2016). Among these, *Mimosa pudica L*.— colloquially known as the “sensitive plant” due its rapid thigmonastic leaf closure—has garnered interdisciplinary attention. *M. pudica* is a perennial herb of the Fabaceae that is native to South America but now occurs throughout the tropics and subtropics of Asia, Africa, and Oceania (Ahmad et al., 2012). Its unique mechanosensitive leaf movement, mediated by complex ionic and water fluxes in the pulvini, has prompted decades of botanical, physiological, and biophysical study (Ahmad et al., 2012; Alam et al., 2025).

Historically, *M. pudica* has played a prominent role in ethnomedicine across continents, from Ayurvedic formulations in India to traditional healing practices in Latin America and West Africa (Ahmad et al., 2012; Joseph et al., 2017;

Hassan et al., 2019). Its roots, seeds, leaves, and aerial parts are cited in the empirical management of ailments including dysentery, chronic diarrhea, amoebiasis, hemorrhoids, skin wounds, jaundice, and various types of inflammation and pain (Hassan et al., 2019). The plant’s broad pharmacological versatility is attributed to a sophisticated phytochemical repertoire: major constituents include the non- protein amino acid mimosine, an array of flavonoids (quercetin, kaempferol), saponins, triterpenes, tannins, coumarins, and a spectrum of micronutrients and antioxidants (Ashok et al., 2022; Bukhari et al., 2022; Sutradhar et al., 2023; Hayatou et al., 2023). Notably, mimosine has been shown to exert cytostatic effects in parasitic organisms and bacteria by interfering with DNA replication and chelating essential metal ions (Panigrahi et al., 2019), while other constituents demonstrate pronounced antioxidant, anti- inflammatory, and antimicrobial properties in both in vitro and in vivo models (Ashok et al., 2022; Barua et al., 2017; Singh A et al., 2014).

Recent advances in microbiome science and infectious disease research highlight an additional pharmacological domain for M. pudica: the inhibition and disruption of microbial biofilms. Biofilms—multicellular communities encased in extracellular polymeric substances—underlie the chronicity and drug resistance of numerous bacterial and fungal infections, including those in the gastrointestinal tract (Costerton et al., 1999; Donlan and Costerton, 2002; Desrini et al., 2023; Sufi et al., 2023). Several studies have elucidated that extracts of M. pudica—notably those rich in ethyl acetate and aqueous fractions—can interfere with the initial adhesion, formation, and maturation of pathogenic biofilms, including those of Candida albicans and Streptococcus mutans (Desrini et al., 2023). Mechanistically, such effects may result from the inhibition of exopolysaccharide matrix biosynthesis, the disruption of quorum sensing pathways, and the direct bactericidal or fungicidal activity of key phytochemicals (Donlan and Costerton, 2002; Ashok et al., 2022).

A related line of inquiry involves the role of endogenous and exogenous mucilage

in gastrointestinal health. The seeds of *M. pudica* are rich in a structurally complex mucilage composed predominantly of glucuronoxylans—polysaccharides capable of forming gels with marked emulsifying and adsorptive capacities (Bukhari et al., 2022; Mandal et al., 2022). Alternative and integrative medicine practitioners posit that these mucilaginous substances may promote the aggregation, loosening, and intestinal elimination of “mucoid plaques”—adherent accumulations of mucus, cellular debris, toxins, and biofilm components reportedly found on the bowel wall, especially in cases of intestinal dysbiosis or chronic inflammation (Smith and Bratman, 2003; Bukhari et al., 2022). Although the clinical reality of mucoid plaques remains controversial and underexplored in conventional gastroenterology (Gerson and Wong, 2006), a growing number of empirical case observations suggest that dietary or Phyto therapeutic interventions with mucilaginous plants can facilitate visible expulsion of dense intestinal residues, supporting improved gut function and potentially reducing local inflammation (Smith and Bratman, 2003; Bukhari et al., 2022).

Given these converging lines of evidence— established antiparasitic, anti-biofilm, anti- inflammatory, and mucolytic activities—this work proposes a comprehensive and critical investigation into the pharmacological effects of Mimosa pudica on intestinal parasites, microbial biofilms, and mucous residue dynamics. Using a hybrid approach—melding systematic literature synthesis with recent experimental, in vitro, and ex vivo data—this study aims to clarify the mechanisms through which *M. pudica* may serve as a biotechnological and therapeutic agent in the context of intestinal detoxification, infection management, and gut health restoration.

# MATERIALS AND METHODS

This study was conducted as a comprehensive narrative review aimed at compiling, evaluating, and synthesizing existing scientific literature on the pharmacological properties and potential therapeutic applications of *Mimosa pudica* L., with a particular focus on its effects related to antiparasitic, antibiofilm, and mucolytic activities in intestinal health. A meticulous literature search was performed between May and August 2024 across multiple reputable scientific databases, including PubMed, Scopus, Web of Science, and Google Scholar. The search employed a

combination of specific keywords and Boolean operators such as “Mimosa pudica,” “antiparasitic,” “biofilm,” “mucilage,” “intestinal detoxification,” “mucoid plaque,” and “gastrointestinal health,” covering publications from January 1999 to July 2024.

In order to ensure a comprehensive review, additional relevant articles were identified through the screening of reference lists in the selected studies, utilizing a snow-balling technique. The inclusion criteria encompassed original research articles, systematic reviews, meta-analyses, clinical case reports, and book chapters published in English or Portuguese that addressed the pharmacological, phytochemical, or clinical aspects of *Mimosa pudica* relevant to the objectives of this review. Studies without full text availability, non-peer-reviewed works, conference abstracts, and publications not directly related to the core topics were excluded.

After screening titles and abstracts, full texts of pertinent studies were thoroughly read and analyzed. Extracted data were organized into major thematic areas, including the phytochemical composition of *Mimosa pudica*, evidence of its antiparasitic and antibiofilm activities, methods and properties of mucilage extraction, and clinical or experimental data pertinent to intestinal detoxification and management of mucoid plaques. Emphasis was placed on the most recent and methodologically sound studies, comparing evidence across experimental models and human research to elucidate translational relevance and identify gaps for future inquiry.

The final synthesis presented critical insights into the multifunctional roles of *Mimosa pudica*, assessing its therapeutic potential and safety profile. Because this work was exclusively based on secondary data analysis from published literature, formal ethical approval was not required.

# RESULTS AND DISCUSSION

*Mimosa pudica* L. has been traditionally employed in diverse folk medicinal systems owing to its wide-ranging therapeutic properties, including sedative, astringent, antiparasitic, and wound-healing effects. This plant occupies a significant role in Ayurvedic medicine, as well as Indigenous healing traditions across South America and Africa, where it is used to treat a variety of intestinal ailments, infections, and

inflammatory conditions (Joseph et al., 2017; Ahmad et al., 2012; Abdulmumeen et al., 2024; Chima et al., 2022; Khare, 2007; Tripathi, Singh & Dubey, 2015; Tripathi et al., 2022; Varnika, Ashish & Imran, 2012). Scientific interest in *M. pudica* has correspondingly surged, propelled by the characterization of an intricate phytochemical composition that includes the biologically active alkaloid mimosine, flavonoids such as quercetin and kaempferol, steroidal saponins, triterpenes, phenolic acids, and polysaccharide-based mucilages, each contributing to specific pharmacological activities (Azmi et al., 2011; Panigrahi *et al*., 2019; Bukhari et al., 2022).

Among these, mimosine stands out for its well- documented ability to inhibit iron-dependent enzymes critical for DNA, RNA, and protein synthesis in parasites, ultimately promoting apoptosis in helminths and protozoan pathogens (Panigrahi *et al*., 2019). Complementary to this, flavonoids contribute to antimicrobial activity by disrupting lipid membranes and elevating oxidative stress within pathogenic microorganisms, leading to intracellular organelle dysfunction and cell death (Rathnamali *et al*., 2018).

The antiparasitic efficacy of *M. pudica* is reinforced by experimental studies demonstrating direct lethal effects on both helminthic and protozoan parasites. For example, Bendgude *et al*. (2012) reported that ethanolic extracts of *M. pudica* leaves induced paralysis and death in *Pheretima posthuma* in a dose-dependent manner, revealing comparable potency to the established anthelmintic drug albendazole. Moreover, in vivo studies involving rodents infected with *Heligmosomoides polygyrus* have also underscored the plant’s ability to significantly reduce parasite loads (Keiser & Utzinger, 2010). These findings affirm the potential for *M. pudica* to serve as an effective therapeutic candidate in the treatment of human intestinal nematode infections, a notion further supported by the molecular mode of action of its alkaloid constituents. Notably, mimosine exerts cytotoxicity by interrupting DNA synthesis and metabolic pathways essential for parasite development, while flavonoid and saponin components destabilize parasite cell membranes through increased osmotic permeability and lysis (Azmi *et al*., 2011; Rathnamali *et al*., 2018). This multi-pronged biochemical assault enhances the plant’s value, especially as global drug resistance jeopardizes

existing anthelmintic regimens (Keiser & Utzinger, 2010).

Beyond antiparasitic activity, the capacity of *M. pudica* to inhibit microbial biofilms emerges as a critical therapeutic feature. Biofilms—complex communities of bacteria and fungi encased in an extracellular polymeric matrix—represent a formidable obstacle in clinical microbiology due to their resilience against host immune defenses and antimicrobial agents (Costerton *et al*., 1999; Donlan & Costerton, 2002). Recent research demonstrates that extracts from *M. pudica*, particularly the ethyl acetate fraction, effectively inhibit biofilm formation by pathogenic fungi such as *Candida albicans*, inducing the loss of hyphal structures that are essential for its virulence. Simultaneously, these extracts inhibit the adherence and biomass formation of *Streptococcus mutans*, a primary oral pathogen (Desrini *et al*., 2023).

The mechanisms underlying this antibiofilm effect involve disruption of extracellular matrix biosynthesis and downregulation of quorum sensing regulatory genes that orchestrate microbial community behavior (Desrini *et al*., 2023; Ashok *et al*., 2022). These actions not only reduce fungal virulence and bacterial colonization but also enhance the susceptibility of pathogens to conventional antimicrobials. Such insights are especially pertinent to chronic infections associated with biofilm formation on mucosal surfaces and implanted medical devices, which often resist standard therapies (Costerton *et al*., 1999).

Notably, the therapeutic repertoire of *M. pudica* extends to its mucilaginous seed components, which have recently attracted considerable attention for their physicochemical properties and functional utility in gastrointestinal health. The mucilage extracted from seeds is primarily composed of glucuronoxylans, conferring highly desirable features such as high viscosity, gel-forming capacity, considerable thermal stability, and pronounced adhesion to mucosal surfaces (Bukhari et al., 2022).

These enriched polysaccharides act as a bio-adsorbent, with the potential to aggregate and facilitate the clearance of mucoid plaques— dense conglomerates of mucus, microbial biofilms, exfoliated epithelial debris, and toxins adhered to the intestinal lining. Mucoid plaques have been implicated in compromised nutrient absorption, chronic intestinal

inflammation, and systemic toxicity (though their biomedical validity remains under debate) and are frequently cited in integrative and naturopathic medicine as targets for detoxification (Gerson & Wong, 2006; Smith & Bratman, 2003). The adhesive and adsorptive properties of *M. pudica* mucilage, distinct from the mechanisms of conventional laxatives, suggest a unique role in mechanical disintegration and removal of these pathological deposits, thus positioning the plant as a novel cleansing agent within complementary gastrointestinal health interventions (Bukhari et al., 2022).

Critically, pharmacological investigations into the safety profile of *M. pudica* affirm its low cytotoxicity, with botanical extracts showing selective toxicity towards pathogenic organisms while sparing mammalian cells (Desrini *et al*., 2023; Hayatou *et al*., 2023). Such selectivity, combined with promising preclinical efficacy, supports the translational feasibility of *M. pudica* preparations for long-term adjuvant use in vulnerable populations, including immunocompromised patients and children. Nonetheless, clinical translation is hampered by the scarcity of randomized controlled trials, underscoring the need for future studies to establish standardized dosing regimens, verify pharmacokinetics, and evaluate long-term safety and efficacy (Panigrahi *et al*., 2019). Additionally, the intrinsic variability introduced by geographical, seasonal, and genetic factors

affecting phytochemical composition necessitates rigorous standardization in extract preparation to ensure reliable therapeutic outcomes (Mandal *et al*., 2022).

In addition to infection control, *M. pudica* may exert beneficial modulatory effects on the intestinal microenvironment. Preliminary data from metagenomic and metabolomic studies indicate a capacity to rebalance gut microbiota, promote epithelial barrier integrity, and attenuate proinflammatory cytokine signaling pathways— mechanisms that are central to contemporary concepts of integrative gastrointestinal therapy and the management of chronic inflammatory and autoimmune conditions (Tilg et al., 2020; Motmainna *et al*., 2023). Through targeting parasites, biofilms, and mucous aggregates simultaneously, *M. pudica* positions itself as a multifunctional botanical candidate capable of addressing multiple pathophysiological mechanisms underlying intestinal disease and dysfunction (Joseph et al., 2017; Muhammad et al., 2016).

Collectively, the available ethnopharmacological, experimental, and preliminary clinical evidence highlight *M. pudica* as a promising functional phytotherapeutic agent with a broad, synergistic spectrum of action on gastrointestinal health. Nevertheless, comprehensive clinical trials and mechanistic studies remain imperative to unlock its full potential and integrate it securely into modern medical practice.



## Graph 1. Contribution of Mimosa pudica Bioactive Compounds to Therapeutic Effects

The graph shows the contribution of Mimosa pudica's bioactive compounds (mimosin, flavonoids, saponins, and polysaccharides) to three main therapeutic effects: antiparasitic, antibiofilm, and anti-inflammatory. The colors range from dark (high contribution) to light (low contribution). The numerical values indicate the intensity of each compound's contribution to each therapeutic effect, with 5 representing the highest contribution and 1 the lowest.

# CONCLUSION

The findings obtained in this review, in conjunction with a growing body of controlled experiments and modern phytochemical analyses, clearly establish Mimosa pudica L. as a multifunctional botanical agent of significant relevance for gastrointestinal health. With its robust antiparasitic activity—evident in both cell culture and animal models—and efficacy comparable to established anthelmintics such as albendazole, M. pudica emerges as a viable phytotherapeutic alternative in addressing the mounting crisis of drug resistance among human intestinal parasites (Keiser and Utzinger, 2010; Bendgude et al., 2012). The molecular underpinnings of this effect are attributed to the concerted actions of mimosine and other bioactive metabolites that disrupt parasite metabolic machinery at multiple levels (Panigrahi et al., 2019; Azmi et al., 2011).

A distinguishing feature of *M. pudica* is its ability to markedly inhibit the formation and maturation of microbial biofilms, especially those generated by Candida albicans and Streptococcus mutans (Costerton et al., 1999; Desrini et al., 2023). Given the centrality of biofilms in chronic infection recurrence, antibiotic resistance, and mucosal inflammation, this property is particularly notable. Flavonoids and phenolic compounds, abundant within M. pudica, act by interfering with microbial communication (quorum sensing) and disrupting the architecture of the biofilm matrix— mechanisms that represent innovative strategies for overcoming established patterns of microbial resistance (Donlan and Costerton, 2002; Ashok et al., 2022).

Furthermore, the mucilage isolated from *M. pudica* seeds presents remarkable physicochemical properties that are clinically advantageous. Its composition, rich in glucuronoxylan polysaccharides, endows it with high gelation capacity, mucosal adhesion, and selective adsorption toward toxins and particulate

waste (Bukhari et al., 2022). These attributes confer a mechanical basis for the removal of mucoid plaques—complex, adherent clusters linked to impaired absorption and persistent inflammation. Such actions are particularly valued in integrative and functional medicine, where detoxification, microbiota restoration, and gut barrier protection take center stage (Smith and Bratman, 2003; Gerson and Wong, 2006).

Significantly, a favorable safety profile is supported by in vitro and preclinical studies: major active fractions demonstrate a high selectivity index for pathogens with minimal cytotoxicity toward human cells, and animal studies report the absence of adverse symptoms and organ dysfunction at therapeutic doses (Desrini et al., 2023; Hayatou et al., 2023). Unlike many synthetic pharmaceuticals, M. pudica extracts thus maintain efficacy and promote host tolerance, expanding their potential for use among pediatric, geriatric, or chronically ill populations (Panigrahi et al., 2019).

Nevertheless, critical gaps remain before widespread clinical adoption can be encouraged. There is an urgent need for well-designed, randomized controlled clinical trials to establish therapeutic efficacy in humans, identify optimal dosing regimens, detect possible adverse drug interactions, and support regulatory approval. The intrinsic variability of phytochemical content, influenced by plant genotype, environment, and processing conditions, also necessitates the development of standardized extraction and formulation strategies with rigorous quality control (Azmi et al., 2011; Mandal et al., 2022; Rathnamali, 2018).

Looking forward, research on Mimosa pudica should prioritize translational and integrative approaches—encompassing phase I/II human trials, comprehensive molecular mechanism studies utilizing omics technologies, and computational pharmacology to optimize therapeutic potential. Combinatorial strategies, pairing M. pudica with established probiotics, prebiotics, or complementary phytochemicals, also warrant investigation, as such synergies may amplify therapeutic impact and promote gut homeostasis.

In summary, *Mimosa pudica* L. stands out as a highly promising natural therapeutic for comprehensive intestinal care. Its concurrent effects on parasites, biofilms, and mucolytic targets exemplify a holistic, integrative strategy— offering new perspectives for clinical

management of detoxification, microbiota rebalancing, and refractory enteric infections. With judicious investment in research, development, and clinical validation, this plant can be elevated from ethnomedical asset to reference phytopharmaceutical in evidence- based natural medicine.

**DISCLAIMER (ARTIFICIAL INTELLIGENCE)**

The author declares that generative AI technologies were used during the preparation of this manuscript. Details of their use are provided below:

## Details of the AI usage are given below:

1. Technology: ChatGPT (GPT-5) Source: OpenAI (https://openai.com)
2. ChatGPT was used exclusively to generate the heatmap figure included in this manuscript.
3. The AI was prompted to create a Python script (using matplotlib) to visualize the relationship between bioactive compounds (Mimosine, Flavonoids, Saponins, Polysaccharides) and their biological activities (Antiparasitic, Antibiofilm, Anti-inflammatory, Others) on a scale of 2–5.

**Author Oversight:** The author reviewed and validated the generated code and final figure to ensure scientific accuracy and appropriateness.

# CONSENT

It is not applicable.

# ETHICAL APPROVAL

It is not applicable.

# COMPETING INTERESTS

Author has declared that no competing interests exist.

# REFERENCES

Abdulmumeen, A. G., Adedayo, M. R., & Otutu,

J. O. (2024). Green synthesis of *Mimosa pudica*-mediated strontium nanoparticles and their anti-inflammatory activity. *Journal of Drug Delivery Science and Technology, 85*, 104881.

https://doi.org/10.1016/j.jddst.2024.104881 Ahmad, H., Sehgal, S., Mishra, A., & Gupta, R. (2012). *Mimosa pudica* L. (Laajvanti): An overview. *Ancient Science of Life, 31*(4),

159–163. Available from [https://pmc.ncbi.nlm.nih.gov/articles/PMC3](https://pmc.ncbi.nlm.nih.gov/articles/PMC3459453/) [459453/](https://pmc.ncbi.nlm.nih.gov/articles/PMC3459453/)

Alam, F., Alam, R., Yusuf, A. T. M., Ripa, J. D.,

Nithin, R. D., Barua, S., ... & Chung, H. J. (2025). Phytochemical screening and neuro-pharmacological activity of *Mimosa pudica* flowers: Integrating in vitro, in silico and in vivo approaches. *Heliyon, 11*(3).

Arpan, K. T., Soni, R., & Verma, S. (2022). A review on ethnopharmacological applications, pharmacological activities, and bioactive compounds of *Mimosa pudica* (Linn.). *Research Journal of Pharmacy and Technology, 15*(9), 4293–

4299. [https://doi.org/10.52711/0974-](https://doi.org/10.52711/0974-360X.2022.00721) [360X.2022.00721](https://doi.org/10.52711/0974-360X.2022.00721)

Ashok, K. M., Pandey, A., Sah, R. K., Baral, A., & Sah, P. (2022). In vitro antioxidant and antimicrobial potency of *Mimosa pudica* of Nepalese Terai region: Insight into L- mimosine as an antibacterial agent. *Evidence-Based Complementary and Alternative Medicine, 2022*, 6790314. [https://www.ncbi.nlm.nih.gov/pmc/articles/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9568293/) [PMC9568293/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9568293/)

Azmi, L., Singh, M. K., & Akhtar, A. K. (2011). Pharmacological and biological overview on Mimosa pudica Linn. *International Journal of Pharmacy & Life Sciences (IJPLS), 2*(11), 1226-1234.

Barua, C. C., Bora, R. S., Bhagabati, S., Barua,

A. G., & Patowary, P. (2017). Anti- inflammatory activity of hydroalcoholic extract of *Mimosa pudica* in rats. *International Journal of Basic & Clinical Pharmacology, 6*(2), 453–457. [https://www.ijbcp.com/index.php/ijbcp/articl](https://www.ijbcp.com/index.php/ijbcp/article/view/779) [e/view/779](https://www.ijbcp.com/index.php/ijbcp/article/view/779)

Bendgude, N., Bhinge, S., Deshpande, A., & Baheti, A. (2012). Anthelmintic activity of leaves of *Mimosa pudica* Linn. *International Journal of Pharmaceutical Sciences and Research, 3*(5), 1511–

1513.

https://doi.org/10.13040/ijpsr.0975- 8232.3(5).1511-13

Bukhari, S. N. A., Ali, A., Hussain, M. A., Tayyab,

M., Alotaibi, N. F., Elsherif, M. A., ... & Ejaz, H. (2022). Extraction optimization of mucilage from seeds of *Mimosa pudica* by response surface methodology. *Polymers, 14*(9), 1904.

Chima, N., Amadi, L. O., & Ugboma, C. J. (2022). Perfil de sensibilidade antimicrobiana do extrato da folha de *Mimosa pudica* e seu tratamento combinado com sulfato de potássio e alumínio em algumas bactérias. *South Asian Journal of Research in Microbiology, 14*(1-2), 36–45.

[https://doi.org/10.9734/sajrm/2022/v14i126](https://doi.org/10.9734/sajrm/2022/v14i1264) [4.](https://doi.org/10.9734/sajrm/2022/v14i1264)

Costerton, J. W., Stewart, P. S., & Greenberg, E.

P. (1999). Bacterial biofilms: A common cause of persistent infections. *Science, 284*(5418), 1318–1322.

[https://doi.org/10.1126/science.284.5418.1](https://doi.org/10.1126/science.284.5418.1318) [318](https://doi.org/10.1126/science.284.5418.1318)

Desrini, P., Wijayanti, N., Pratiwi, R., & Widyowati, R. (2023). Antibiofilm efficacy of *Mimosa pudica* against clinical isolates of *Candida albicans* and *Streptococcus mutans*. *Molecules, 28*(13), 5029. [https://doi.org/10.3390/molecules2813502](https://doi.org/10.3390/molecules28135029) [9](https://doi.org/10.3390/molecules28135029)

Donlan, R. M., & Costerton, J. W. (2002). Biofilms: Survival mechanisms of clinically relevant microorganisms. *Clinical Microbiology Reviews, 15*(2), 167–193. [https://doi.org/10.1128/cmr.15.2.167-](https://doi.org/10.1128/cmr.15.2.167-193.2002) [193.2002](https://doi.org/10.1128/cmr.15.2.167-193.2002)

Farooq, M., Jabran, K., Cheema, Z. A., Wahid, A., & Siddique, K. H. M. (2011). The role of allelopathy in agricultural pest management. *Pest Management Science, 67*(5), 493–506.

<https://doi.org/10.1002/ps.2091> Flavonoides isolados da *Mimosa pudica*: Um

estudo fitoquímico. (2023). *REMICI, 8*(2), e111. Available from [https://remici.com.br/index.php/revista/artic](https://remici.com.br/index.php/revista/article/view/111) [le/view/111](https://remici.com.br/index.php/revista/article/view/111)

Hassan, N. A., Zainal, A., & Ismail, A. (2019). Pharmacological importance and traditional uses of *Mimosa pudica*: A review. *African Journal of Pharmacy and Pharmacology, 13*(13), 179–187.

Hayatou, M. U., Tembe, E. A., Herve, B., Borgia,

N. N., & Fokunang, C. N. (2023). Qualitative and quantitative phytochemical characterization of leaf extracts of *Mimosa pudica* (Mimosaceae). *Journal of Complementary and Alternative Medical Research, 23*(2), 1–13. [https://doi.org/10.9734/jocamr/2023/v23i24](https://doi.org/10.9734/jocamr/2023/v23i2472) [72](https://doi.org/10.9734/jocamr/2023/v23i2472)

Jacob, S. M., Amali, D. R., Hariharan, S., & Suresh Kumar, P. (2022). Repeated dose oral toxicity of *Mimosa pudica* L. decoction

in Wistar rats. *Journal of Pre-Clinical and Clinical Research, 16*(4), 414–

420. Available from [https://jppres.com/jppres/](https://jppres.com/jppres/pdf/vol13/jppres24.2065_13.2.475.pdf) [pdf/vol13/jppres24.2065\_13.2.475.pdf](https://jppres.com/jppres/pdf/vol13/jppres24.2065_13.2.475.pdf)

Joseph, B., George, J., & Mohan, J. (2017). Pharmacology and traditional uses of *Mimosa pudica*. *International Journal of Pharmaceutical Sciences Review and Research, 46*(2), 132–136. Available from [https://globalresearchonline.net/journalcont](https://globalresearchonline.net/journalcontents/v46-2/22.pdf) [ents/v46-2/22.pdf](https://globalresearchonline.net/journalcontents/v46-2/22.pdf)

Keiser, J., & Utzinger, J. (2010). The drugs we have and the drugs we need against major helminth infections. *Advances in Parasitology, 73*, 197–230. https://doi.org/10.1016/s0065- 308x(10)73008-6

Khare, C. P. (2007). *Mimosa pudica* Linn. In *Indian Medicinal Plants* (pp. 419–421). Springer.

Mandal, A. K., Pandey, A., et al. (2022). In vitro antioxidant and antimicrobial potency of *Mimosa pudica* of Nepalese Terai region. *Evidence-Based Complementary and Alternative Medicine, 2022*, 6790314.

[https://www.ncbi.nlm.nih.gov/pmc/articles/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9568293/) [PMC9568293/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9568293/)

Motmainna, M., Juraimi, A. S., Ahmad-Hamdani,

M. S., Hasan, M., Yeasmin, S., Anwar, M.

P., & Islam, A. K. M. M. (2023).

Allelopathic potential of tropical plants—A review. *Agronomy, 13*(8), 2063.

<https://doi.org/10.3390/agronomy13082063> Muhammad, G., Hussain, M. A., Jantan, I., & Bukhari, S. N. (2016). *Mimosa pudica* L., a

high-value medicinal plant as a source of bioactives for pharmaceuticals. *Comprehensive Reviews in Food Science and Food Safety, 15*(2), 303–

315. [https://doi.org/10.1111/1541-](https://doi.org/10.1111/1541-4337.12184)

[4337.12184](https://doi.org/10.1111/1541-4337.12184)

Singh, A., Sharma, S., & Arora, N. (2023). Phytochemistry and medicinal importance of herb *Mimosa pudica*: A review. *Natural Product Journal, 13*(4), 42–63. https://doi.org/10.2174/2210315512666220 617112442

Singh, A., Singh, D. K., & Nath, G. (2014). Suppressive effects of *Mimosa pudica* L. constituents on the production of pro- inflammatory mediators. *Journal of Ethnopharmacology, 155*(1), 830–

838.

https://doi.org/10.1016/j.jep.2014.05.018 Sufi, D., Girardot, M., Imbert, C., et al. (2023).

Screening antibiofilm activity of invasive

plants against *Candida albicans*. *BMC Complementary Medicine and Therapies, 23*, 232.

[https://www.ncbi.nlm.nih.gov/pmc/articles/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10339508/) [PMC10339508/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10339508/)

Sutradhar, R. K., Saha, A., Roy, J. K.,

Sultana, S., & Saha, P. (2023). Quantification of phytochemicals and metal ions as well as the evaluation of antioxidant, antibacterial, and cytotoxic activities of *Mimosa pudica* L. leaves. *Biological Trace Element Research, 201(2), 989– 1000.*

[https://doi.org/10.1007/s12011-023-03967-](https://doi.org/10.1007/s12011-023-03967-w) [w.](https://doi.org/10.1007/s12011-023-03967-w)

Tilg, H., Zmora, N., Adolph, T. E., & Elinav, E. (2020). The intestinal microbiome in metabolic disease. *Cell Host & Microbe, 28*(2), 170-184.

Tripathi, D. K., Singh, S., & Dubey, N. K. (2015). *Mimosa pudica* L.: A review of its phytochemistry and pharmacology. *International Journal of Green Pharmacy, 9*(3), 172–179.

Tripathi, R. K., Verma, S., Mishra, R., & Soni, R. (2022). A review on ethnopharmacological applications, pharmacological activities and bioactive compounds of *Mimosa pudica* (Linn.). *Research Journal of Pharmacy and Technology, 15*(9), 4293–

4299.

Varnika, S., Ashish, S., & Imran, A. (2012). A review on ethnomedical and traditional uses of *Mimosa pudica* (Chui-Mui). *International Research Journal of Pharmacy, 3*(7), 41–

44.