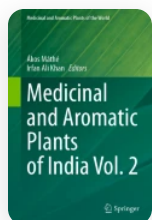


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Mesua ferrea L.: Ethnobotany, Phytochemistry and Pharmacology

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Abstract

The plant kingdom has plenty of plants with herbal activities. Amongst them *Mesua ferrea*, also known as “Nagakesar”, is a species with several medicinal properties. *M. ferrea* is a rare plant species, typically found in the tropical region. Possesses various medicinal properties such as anti-inflammatory, anti-arthritic, analgesic, anti-diabetic, anti-cancer,

cardioprotective etc. Due to its pharmacological potential, *Mesua ferrea* is traditionally used by tribal people. This chapter summarizes knowledge about its traditional use, phytoconstituents and pharmacological properties.

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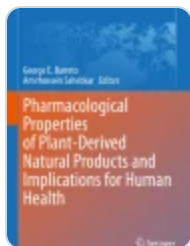
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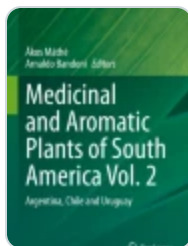
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References

Aggrawal K et al (2014) Efficacy of a standardized herbal preparation (Roidosanal®) in the treatment of hemorrhoids: a randomized, controlled, open-label multicentre study. J Ayurveda Integr Med 5:117–124

[Article](#) [PubMed](#) [PubMed Central](#) [Google Scholar](#)

Alakh NS, Hemalatha S, Sairam K (2014) Phyto-pharmacological review of *Mesua ferrea* Linn. Int J Phytopharmacol 5:6–14

[Google Scholar](#)

Asif M et al (2016) Isoledene from *Mesua ferrea* oleo-gum resin induces apoptosis in HCT 116 cells through ROS-mediated modulation of multiple proteins in the apoptotic pathways: a mechanistic study. Tox Lett 257:84–96

[Article](#) [CAS](#) [Google Scholar](#)

Balekari U, Veeresham C (2015) Insulinotropic activity of Methanolic extract of *Mesua ferrea* Linn. J Basic Appl Sci 11:410–417

[Article](#) [CAS](#) [Google Scholar](#)

Bandaranayake WM et al (1975) Xanthones and 4-phenylcoumarins of *Mesua thwaitesii*. Phytochemistry 14:265

[Article](#) [CAS](#) [Google Scholar](#)

Chahar M et al (2012) In-vivo antioxidant and immunomodulatory activity of mesuol isolated from *Mesua ferrea* L. seed oil. Int Immunopharmacol 13:386–391

[Article](#) [CAS](#) [PubMed](#) [Google Scholar](#)

Choudhury S, Ahmed R, Barthel A, Leclercq PA (1998) Volatile oils of *Mesua ferrea*(L.). J Essent Oil Res 10(5):497–501. <https://doi.org/10.1080/10412905.1998.9700955>

[Article](#) [CAS](#) [Google Scholar](#)

Chow YL, Quon HH (1968) Chemical constituents of the heartwood of *Mesua ferrea*. Phytochemistry 7:1871

[Article](#) [CAS](#) [Google Scholar](#)

Dassanayake MD (1980) Revised handbook of the Flora of Ceylon, vol I. Oxonian Press Pvt. Ltd, Faridabad, p 105

[Google Scholar](#)

Ee GCL, Teh SS, Rahmani M, Taufiq-Yap YH, Go R, Mah SH (2012) A new furanoxanthone from the root bark of *Mesua ferrea*. Lett Org Chem 9:457–459

[Article](#) [CAS](#) [Google Scholar](#)

Fern K Tropical Plants Database. (2022) [Tropical.theferns.info](https://tropical.theferns.info/). 2022-10-21

Garg S, Kameshwar S, Rajeev R, Pankaj A, Parshuram M (2009) *In vivo* antioxidant activity and hepatoprotective effects of methanolic extracts of *Mesua ferrea* L. Int J Pharmatechnol Res 1:1692–1696

[Google Scholar](#)

Gopalakrishnan C et al (1980) Anti-inflammatory and C.N.S. Depressant activities of xanthones from *Calophyllum inophyllum* and *Mesua ferrea*. Indian J Pharmacol 12:181–191

[CAS](#) [Google Scholar](#)

Govindchari TR, Pai BR, Suramaniam PS, Ramdas Rao U, Muthukumarswamy N (1967) Constituents of *Mesua ferrea* L.-I Mesuaxanthone a and Mesuaxanthone B. Tetrahedron 23:243–248

[Article](#) [Google Scholar](#)

Gunasekera SP, Ramachandran S, Selliah S, Sultanbawa MUS (1975) Chemical investigation of ceylonese plants. Part XVII. Isolation and structures of the xanthones in the extractives of

Mesua ferrea L. (form *M. Salicina* Pl. and Tr.) (Guttiferae). J Chem Soc Perkin Trans 1:2447–2450

[Article](#) [Google Scholar](#)

Hassan MT et al (2006) Analgesic activity of *Mesua ferrea* Linn. Dhaka Univ J Pharm Sci 5:73–75

[Article](#) [Google Scholar](#)

Husain A, Virmani OP, Popli SP, Misra LN, Gupta MM, Srivastava GN, Abraham Z, Singh AK (1992) Dictionary of Indian medicinal plants. CIMAP, Lucknow, p 546

[Google Scholar](#)

Islam R, Ahmed I, Sikder AA, Haque MR, Al-Mansur A, Ahmed M, Rasheed M, Rashid MA (2014) Chemical investigation of *Mesua nagassarium* (Burm. f.) Kosterm. J Basic Appl Sci 10:124–128

[Article](#) [CAS](#) [Google Scholar](#)

Jalalpure SS et al (2001) Antiarthritic activity of various extracts of *Mesua ferrea* Linn. seed. J Ethnopharmacol 138:700–704

[Article](#) [Google Scholar](#)

Joy PP, Thomas J, Mathew S, Skaria BP (1998) Kerala agricultural university. Arom Med Plant Res:106–107

[Google Scholar](#)

Keawsa-ard S, Kongtaweelert S (2012) Antioxidant, antibacterial, anticancer activities and chemical constituents of the essential oil from *Mesua ferrea* leaves. Chiang Mai J Sci 39:455–463

[CAS](#) [Google Scholar](#)

Keawsa-ard S, Liawruangrath B, Kongtaweelert S (2015) Bioactive compounds from *Mesua ferrea* stems. Chiang Mai J Sci 42:185–195

[CAS](#) [Google Scholar](#)

Kritikar KR, Basu BD (1956) Indian medicinal plants, vol 171, 2nd edn, Allahabad, pp 267–270

[Google Scholar](#)

Kritikar KR, Basu BD (1981) Indian medicinal plants, vol 1, 2nd edn. International book distributors, Dehradun. p 274

[Google Scholar](#)

Lim TK (2012) Edible medicinal and non-medicinal plants. Springer, New York

[Book](#) [Google Scholar](#)

Mazumder R et al (2003) Emergence of *Mesua ferrea* Linn. Leaf extract as a potent bactericide. Ancient Sci Life 22:160–165

[Google Scholar](#)

Mitra S, Ghose A, Gujre N, Senthilkumar S, Borah P, Paul A, Rangan L (2021) A review on environmental and socioeconomic perspectives of three promising biofuel plants *Jatropha*

curcas, *Pongamia pinnata* and *Mesua ferrea*. Biomass Bioenergy 151:106173

[Google Scholar](#)

Nadkarni KM (1976) Indian Materia Medica. Sangam Books Ltd., London, p 1319

[Google Scholar](#)

Orwa C et al (2009) Agroforestry: a tree reference and selection guide version 4.0;

<http://www.worldagroforestry.org/sites/treedatabase.asp>

Paranjpe P et al (2000) Efficacy of an indigenous formulation in patients with bleeding piles: a preliminary clinical study. Fitoterapia 71:41–45

[Article](#) [CAS](#) [PubMed](#) [Google Scholar](#)

Parukutty B, Chandra GS (1984) Studies on the medicinal uses of plants by the Boro tribals of Assam-II. J Econ Taxon Bot 5:599–604

[Google Scholar](#)

Rahman SMM, Shabnom S, Quader MA, Hossain MA (2008) Phytochemical study on the ethylacetate extract of the leaves of *Mesua ferrea* Linn. Indo J Chem 8:242–244

[Article](#) [Google Scholar](#)

Rai LK, Pankaj P, Sharma E (2000) Conservation threats to some important medicinal plants of the Sikkim Himalaya. Biol Conserv 93:27–33

[Article](#) [Google Scholar](#)

Rajesh KP, Manjunatha H, Krishna V, Kumara Swamy BE (2013) Potential *in vitro* antioxidant and protective effects of *Mesua ferrea* Linn. bark extracts on induced oxidative damage. Ind Crop Prod 47:186–198

[Article](#) [CAS](#) [Google Scholar](#)

Rajopadhye AA, Upadhye AS (2012) Hepatoprotective effect of stamen extracts of *Mesua ferrea* L. against oxidative stress induced by CCl₄ in liver slice culture model. Nat Prod Sci 18:76–82

[CAS](#) [Google Scholar](#)

Raju MS et al (1976) Structure of Mesuaferrone-B a new biflavanone from the stamens of *Mesua ferrea* Linn. Tetrahedron Lett 49:4509

[Article](#) [Google Scholar](#)

Rana AYKMM, Khanam JA, Asad-Ud-Daula M (2004) Antineoplastic screening of some medicinal plants against Ehrlich ascites carcinoma in mice. Int J Med Sci 4:142–145

[Google Scholar](#)

Ranganathaiah P et al (2016) Evaluation of *in vitro* anti-inflammatory activity of stem bark extracts of *Mesua ferrea* Linn. Int J Pharm Pharm Sci 8:173–177

[CAS](#) [Google Scholar](#)

Roshy Joseph C, Iianchezian R, Biswajyoti P, Harish CR (2010) Pharmacognostical study of nagakeshara (*Mesua ferrea* Linn)-an ingredient in Vyaghrihareetaki Avaleha. Int J Res Ayur Pharm 1:264–272

[Google Scholar](#)

Sahni KC (1998) The book of Indian trees. Bombay Natural History Society, Mumbai

[Google Scholar](#)

Sahu Alakh N, Hemalatha S, Sairam K (2013) Quantitative phytochemical and heavy metal estimation of *Mesua ferrea* flowers and *Argyreia speciosa* leaves. Int J Pharm Sci Rev Res 22:276–278

[Google Scholar](#)

Santamaría FJ (1978) Diccionario de Mejianismos, 3rd edn. Mejico, Editorial Porrúa

[Google Scholar](#)

Sharkar P, Rahman MM, Haque Masum GZ, Nayeem MA, Hossen MM, Azad AK (2013) Ethnomedicinal importance of the plants in villages in kushtia sador and mirpur upozila, Bangladesh. Int J Geogr Inf Syst 19(4):401–417

[Google Scholar](#)

Sharma A et al (2017) *Mesua ferrea* Linn.: a review of the Indian medical herb. Syst Rev Pharm 8(1):19

[Article](#) [CAS](#) [Google Scholar](#)

Smith MC, Bleck TP (1991) Convulsive disorders: toxicity of anticonvulsants. Clin Neuropharmacol 14:97–115

[Article](#) [CAS](#) [PubMed](#) [Google Scholar](#)

Teh SS et al (2012) *Mesua beccariana* (Clusiaceae), a source of potential anti-cancer Lead compounds in drug discovery. Molecules 17:10791–10800

Tharakan TS, Kesavan M, Kuttan G, Kuttan R (2003) Immunomodulatory and toxicity study of NCV I AND ACII drugs useful against human immunodeficiency virus. Amala Res Bull 2:64

[Google Scholar](#)

Tharakan TS, Kuttan G, Kesavan M Sr, Austin RK, Kuttan R (2004) Effect of NCV I and ACII in cyclophosphamide-induced immunosuppression in BALB/c mice an implication in HIV infection. Amala Res. Bull. 24:133

[Google Scholar](#)

Tharakan ST, Girija K, Ramadasan K (2006) Effect of ACII, an herbal formulation on radiation-induced immunosuppression in mice. Indian J Exp Biol 44:719–725

[PubMed](#) [Google Scholar](#)

Tiwari P, Patel RK (2011) Evaluation of diuretic potential of draksharishta prepared by traditional and modern methods in experimental rats. Pharmacologyonline 3:566–572

[Google Scholar](#)

Tiwari P, Patel RK (2012) Cardioprotective activity of Ashwagandharishta on isoproterenol induced myocardial infarction. Pharmacologyonline 1:17–24

[Google Scholar](#)

Verotta L et al (2004) 4-alkyl- and 4- phenylcoumarins from *Mesua ferrea* as promising multidrug resistant antibacterials. Phytochemistry 65:2867–2879

Walia S, Mukerjee SK (1984) Ferrrxanthone, a 1,3,5,6-tetraoxygenated xanthone from *Mesua ferrea*. *Phytochemistry* 23:1816–1817

[Article](#) [CAS](#) [Google Scholar](#)

Yadav SS et al (2010) Anti-inflammatory activity of Shirishavaleha: an Ayurvedic compound formulation. *Int J Ayurveda Res* 1:205–207

[Article](#) [PubMed](#) [PubMed Central](#) [Google Scholar](#)

Zakaria R, Choong CY, Faridah-Hanum I (2007) Systematic study on Guttiferae Juss of peninsular Malaysia based on plastid sequences. *Tropics* 16(2):141–150

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