Review Article

Common medicinal plants of Uttarakhand from Fabaceae family

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Abstract

The family Fabaceae represents one of the largest and most economically important plant families, widely distributed across diverse ecological regions, including the Himalayan state of Uttarakhand, India. The state is known for its rich biodiversity and traditional knowledge systems. It is also harbors of numerous medicinal plant species used in indigenous therapeutic practices. The present study compiles and highlights common medicinal plants belonging to the Fabaceae family in Uttarakhand along with their traditional uses and pharmacological properties. These plants exhibit a wide range of therapeutic activities such as anti-inflammatory, antidiabetic, antibacterial, antiviral, and anticancer effects. Present study emphasizes the importance of conserving these plant resources and documenting ethnomedicinal knowledge for future pharmacological exploration from the plant wealth of the state.

Keywords: Ethnobotany, Himalayan areas, medicinal potentials, pharmacological properties

Introduction

Medicinal plants have been an integral part of traditional healthcare systems since ancient times (Jena et al., 2025). In India, particularly in the Himalayan region of Uttarakhand, indigenous communities rely heavily on plant-based remedies for primary healthcare (Kumar et al., 2011). The Fabaceae family, commonly known as the legume family, comprises a diverse group of plants with significant medicinal, nutritional, and ecological importance (Maroyi, 2023). Plants belonging to this family are known to produce a wide array of bioactive compounds such as flavonoids, alkaloids, tannins, and glycosides, which contribute to their therapeutic potential (Brilhante et al., 2025). Ethnobotanical knowledge passed down through generations has identified several Fabaceae species used in treating various ailments including respiratory disorders, diabetes, infections, inflammation, and cancer (Usman et al., 2022). The present paper documents common medicinal plants of the Fabaceae family found in Uttarakhand and summarizes their traditional uses supported by scientific studies.

Materials and methods

The present study is based on secondary data compiled from published research articles, reviews, and ethnobotanical studies in different database (Kumar, 2025). The listed plant species were selected based on their occurrence in Uttarakhand and documented medicinal uses. Information regarding their therapeutic applications and pharmacological activities was gathered from peer-reviewed literature (Sahu et al., 2026).

Results and discussion

The Fabaceae family includes several important medicinal plants used in traditional and modern medicine. Table 1 summarized the commonly used medicinal plants species, their local names, uses and sources from Uttarakhand, India.

Table 1: Common medicinal plants of Fabaceae family in Uttarakhand, India

Name	Common Name	Uses	Source
Albizia lebbeck (L.) Benth.	Siris	Plat parts are used in the treatment of respiratory problems.	Balkrishna et al., (2022)
Bauhinia variegata L.	Kachnar	The decoction of the whole plant is taken twice a day after meal to reduce the problems of diabetes.	Kumar et al., (2019)
Butea monosperma (Lam.) Kuntze	Dhak	Leaves have anticancer activity.	Singh et al., (2015)
Cajanus scarabaeoides (L.) Thouars	Chowkhara	Whole plants have anti-inflammatory activity.	Abu Bakar et al., (2018)
Cassia fistula L.	Amaltas	Plant parts showed anti-inflammatory potentials.	Mwangi et al., (2021)
Clitoria ternatea L.	Aprajita	It has antistress properties.	Mukherjee et al., (2008)
Lablab purpureus (L.) Sweet	Chimi	It has antiviral properties.	Bhat et al., (2023)
Macrotyloma uniflorum (Lam.) Verdc.	Gahat	It has antidiarrheal activity.	Oli et al., (2024)
Roylea cinerea (D.Don) Baill.	Kaural	It shows antiproliferative effects.	Bhatia et al., (2020)
Trigonella foenum-graecum L.	Methi	It has antidiabetic activity.	Yadav and Baquer (2024)

Senegalia catechu (L.f.) P.J.H.Hurter & Mabb.	Khair	It has antibacterial activity.	Negi and Dave, (2010)
Mimosa rubicaulis Lam.	Shiahkanta	It has antibacterial activity.	Gurung et al., (2020)
Vachellia nilotica (L.) P.J.H.Hurter & Mabb.	Kikar	Useful in respiratory problems.	Hafez et al., (2024)

The plants listed in this study demonstrated a wide spectrum of pharmacological activities like antidiabetic plants such as *Bauhinia variegata* and *Trigonella foenum-graecum* play a crucial role in managing metabolic disorders (Table 1). Anti-inflammatory species like *Cassia fistula* and *Cajanus scarabaeoides* are useful in treating chronic inflammatory conditions. Antimicrobial plants including *Senegalia catechu* and *Mimosa rubicaulis* are significant in combating infections. Respiratory remedies such as *Albizia lebbeck* and *Vachellia nilotica* are widely used in traditional medicine. Specialized pharmacological effects such as anticancer (*Butea monosperma*) and antiviral (*Lablab purpureus*) activities highlighted the therapeutic diversity of the Fabaceae family (Table 1). The continued use of these plants reflects the strong ethnobotanical heritage of Uttarakhand. However, overexploitation, habitat loss, and lack of conservation strategies pose threats to these valuable resources. Scientific validation and sustainable utilization are essential for their long-term preservation.

Conclusion

The Fabaceae family constitutes a vital component of the medicinal flora of Uttarakhand. The documented species exhibit diverse therapeutic properties and hold significant potential for drug discovery and development. Preservation of traditional knowledge along with scientific validation can contribute to the development of novel herbal medicines. Conservation strategies and sustainable harvesting practices are necessary to protect these valuable plant resources for future generations.

References

Abu Bakar FI, Abu Bakar MF, Abdullah N, Endrini S and Rahmat A. (2018). A review of Malaysian medicinal plants with potential anti-Inflammatory activity. Advances in Pharmacological Sciences. 2018: 8603602. DOI: 10.1155/2018/8603602.

Balkrishna A, Sakshi, Chauhan M, Dabas A and Arya V. (2022). A comprehensive insight into the phytochemical, pharmacological potential, and traditional medicinal uses of *Albizia lebbeck* (L.) Benth. Evidence-Based Complementary and Alternative Medicine. 2022: 5359669. DOI: 10.1155/2022/5359669.

Bhat SS, Pradeep S, Patil SS, Flores-Holguín N, Glossman-Mitnik D, Frau J, Sommano SR, Ali N, Mohanty M, Shivamallu C, Prasad SK and Kollur SP. (2023). Preliminary evaluation of *Lablab purpureus* phytochemicals for anti-BoHV-1 activity using in vitro and in silico approaches. ACS Omega. 8(25): 22684-22697.

Bhatia A, Singh Buttar H, Arora R, Singh B, Singh A, Kaur S and Arora S. (2020). Antiproliferative effects of *Roylea cinerea* (D. Don) Baillon leaves in immortalized L6 rat skeletal muscle cell line: role of reactive oxygen species mediated pathway. Frontiers in Pharmacology. 11: 322. DOI: 10.3389/fphar.2020.00322.

Brilhante ARRAS, de Sousa GR, de Aquino-Vital AKS, de Lima NTR, Souza RBL, de Souza TA, Scotti MT, Barbosa Filho JM, Tavares JF and da Silva MS. (2025). Fabaceae flavonoids beyond the commonplace: a review of chemical diversity, pharmacological activities, mass spectrometric profiling and *in silico* insights into their subclasses. Plants. 14(23): 3549. DOI: 10.3390/plants14233549.

Gurung R, Adhikari S and Parajuli K. (2020). Evaluation of the antibacterial and antioxidant activity of *Mimosa rubicaulis* and *Reinwardtia indica*. Evidence-Based Complementary and Alternative Medicine. 2020: 3862642. DOI: 10.1155/2020/3862642.

Hafez LO, Brito-Casillas Y, Abdelmageed N, Alemán-Cabrera IM, Morad SAF, Abdel-Raheem MH and Wägner AM. (2024). The Acacia (*Vachellia nilotica* (L.) P.J.H. Hurter & Mabb.): traditional uses and recent advances on its pharmacological attributes and potential activities. Nutrients. 16(24): 4278. DOI: 10.3390/nu16244278.

Jena N, Vimala, Singh B, Patra A, Sharma BP, Hossain E and Kumar S. (2025). Methods for ethnobotanical data collection, phytochemistry, antioxidant, anthelmintic, and antimicrobial activities for pharmacological evaluation of medicinal plants. Journal of Biodiversity and Conservation. 9(2): 87-107.

Kumar A, Aswal S, Chauhan A, Semwal RB, Kumar A and Semwal DK. (2019). Ethnomedicinal investigation of medicinal plants of Chakrata Region (Uttarakhand) used in the traditional medicine for diabetes by Jaunsari tribe. Natural Products and Bioprospecting. 9(3):175-200.

Kumar M, Sheikh MA and Bussmann RW. (2011). Ethnomedicinal and ecological status of plants in Garhwal Himalaya, India. Journal of Ethnobiology and Ethnomedicine. 7: 32. DOI: 10.1186/1746-4269-7-32.

Kumar S. (2025). Data collection from literature for biological sciences, medicinal plants research, ethnobotany, and pharmacology: a methodological overview. Journal of Biodiversity and Conservation. 9(2): 167-169.

Maroyi A. (2023). Medicinal uses of the Fabaceae family in Zimbabwe: a review. Plants. 12(6): 1255. DOI: 10.3390/plants12061255.

Mukherjee PK, Kumar V, Kumar NS and Heinrich M. (2008). The Ayurvedic medicine *Clitoria ternatea* from traditional use to scientific assessment. Journal of Ethnopharmacology. 120(3): 291–301.

Mwangi RW, Macharia JM, Wagara IN and Bence RL. (2021). The medicinal properties of *Cassia fistula* L: a review. Biomedicine & Pharmacotherapy = Biomedecine & Pharmacotherapie. 144: 112240. DOI: 10.1016/j.biopha.2021.112240.

Negi BS and Dave BP. (2010). In-vitro antimicrobial activity of *Acacia catechu* and its phytochemical analysis. Indian Journal of Microbiology. 50(4): 369-374.

Oli P, Joshi K and Punetha S. (2024). Traditional uses, phytochemistry, pharmacology, and nutraceutical potential of horse gram (*Macrotyloma uniflorum*): a systematic review. Journal of Food Science. 89(12): 8102–8127.

Sahu JK, Sureshrao A, Majhi S, Dimri R, Sharma BP, Tailor V, Kumar S and Patra A. (2026). Methodology for Writing Review Articles in Biological Sciences: A Systematic and Scholarly Guide. Archives of Current Research International. 26(2): 170-182.

Singh A, Kaur M, Choudhary A and Kumar B. (2015). Effect of *Butea monosperma* leaf extracts on cyclophosphamide induced clastogenicity and oxidative stress in mice. Pharmacognosy Research. 7(1): 85-91.

Usman M, Khan WR, Yousaf N, Akram S, Murtaza G, Kudus KA, Ditta A, Rosli Z, Rajpar MN and Nazre M. (2022). Exploring the phytochemicals and anti-cancer potential of the members of fabaceae family: a comprehensive review. Molecules. 27(12): 3863. DOI: 10.3390/molecules27123863.

Yadav UC and Baquer NZ. (2014). Pharmacological effects of *Trigonella foenum-graecum* L. in health and disease. Pharmaceutical Biology. 52(2): 243–254.