Transactions of the Institute of Molecular Biology & Biotechnologies, MSE AR, vol. 9, No 2, p. 55-58 (2025)

Ethnobotanical overview of selected *Asteraceae* species

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Received: November 30, 2025; Reviewed: December 15, 2025; Accepted: December 24, 2025

This study has reported the overview of the ethnobotanical value of a selected species of Asteraceae used for traditional plant-based medicines. The published ethnobotanical literature was compiled to compare the medicinal uses, the mode of administration and the therapeutic relevance of taxa that commonly occur. The species reviewed had been mostly applied in treating inflammatory diseases, infections, digestive diseases and skin-related diseases. The most common preparation methods were also found to be the decoction, infusion, and topical pastes, a fact that shows the availability and ease of use of traditional measures in health care. This overview proved that the representatives of the Asteraceae family have significant ethnomedicinal potential and remain essential in the rural health care systems. This study overviews the value of conservation of traditional knowledge and offers a scientific foundation for further phytochemical as well as pharmacological research of the medicinal plants.

Keywords: *Asteraceae, disorders, decoctions, ethnomedicine, medicinal plants*

INTRODUCTION

The family *Asteraceae (Compositae)* is one of the most diverse and large flowering plant families that contains over 32,000 species spread across the globe (Devkota, 2022). This family is ecologically diverse and is highly used in the traditional medical systems because of their good phytochemical content, such as flavonoids, sesquiterpene lactones, phenolics and essential oils. These compounds play a role in a diverse range of biological activities, which include anti-inflammatory, anti-microbial, anti-diabetic, hepatoprotectic, and anti-cancer (Kazeminia et al., 2022).

Knowledge about the medicinal usages of Asteraceae has been passed down through generations, especially in rural and indigenous communities where plant-based remedies continue to play a primary role in healthcare (Rolnik & Olas, 2022). The species of this family are usually utilized in the treatment of gastrointestinal diseases, skin infections, respiratory diseases, fever, and metabolic diseases. Nonetheless, regardless of the vast traditional application of these species, the ethnobotanical data on most species are dispersed, thus necessitating systematic documentation (Sharma et al., 2022).

The current research paper aimed to collect and review the ethnobotanical knowledge of selected species of the family Asteraceae, focusing on their traditional medicinal uses, growth, and therapeutic applications as described in earlier

ethnobotanical studies.

MATERIALS AND METHODS

The present study was based on a comprehensive review of ethnobotanical literature related to selected Asteraceae species. Data were collected from peer-reviewed research articles, ethnobotanical surveys, floras, books, and online scientific databases, such as Google Scholar, Scopus, and PubMed. Keywords including *Asteraceae*, *ethnobotany*, *traditional medicine*, *medicinal uses*, and individual plant names were used to retrieve relevant literature. Information regarding plant habit, common names, and ethnomedicinal applications was extracted, compiled, and critically analyzed to ensure accuracy and consistency.

RESULTS

The ethnobotanical descriptions of the selected Asteraceae species revealed a wide range of medicinal applications across different therapeutic categories. The most frequently reported use was for anti-inflammatory purposes, documented in 15 species (Figure 1). Antimicrobial and wound-healing uses were also common, each reported for nine species. They were used in digestive disorder treatment with seven species and four species of the genus were reported to have hepatoprotective, antioxidant, and diuretic uses. Fewer species were linked to the antidiabetic, sedative, anti-hemorrhagic, and hair-growth-promoting attributes. These data show that the plants of the Asteraceae family are widely used in traditional healthcare systems to treat inflammatory and infectious diseases and wounds.

The modes of administration (Table; Figure 2) were analyzed and found that the most frequently used form of preparation was decoction in 11 species, then paste or poultice use in eight species and infusion prep in seven species. Five species were being reported on extract-based preparations, and five to six were reported on juice, seed-based preparations, and whole-plant use. The prevalence of decoctions and topical pastes indicates a heavy dependence on water-based methods of extraction that are simple to use, indicating that there is a heavy dependence on knowledge systems based on the traditional that can be prepared using readily available and affordable means.

Table. Ethnobotanical overview of the selected Asteraceae species.

Species	Habit	Traditional Medicinal Uses	Mode of Preparation / Administration	Citation
Ageratum conyzoides L.	Annual herb	Wound healing, fever, antimicrobial	Leaf paste applied topically; decoction taken orally	Oyeniyi et al. (2025)
Bidens pilosa L.	Annual herb	Anti-inflammatory, antidiabetic	Decoction or infusion of whole plant	Yang, (2014)
Calendula officinalis L.	Annual herb	Skin disorders, ulcers	Flower ointment and infusion	Givol et al. (2019)
Calendula stellata Cav.	Annual herb	Antimicrobial, wound healing	Leaf paste and decoction	Patil et al. (2022)
Carthamus lanatus L.	Annual herb	Digestive ailments, inflammation	Seed infusion	Popov & Kang (2011)
Centaurea calcitrapa L.	Biennial herb	Antimicrobial, tonic	Aerial part decoction	Mekky et al. (2024)
Cichorium intybus L.	Perennial herb	Liver tonic, digestive aid	Root decoction	Das et al. (2016)
Cirsium arvense (L.) Scop.	Perennial herb	Diuretic, anti-inflammatory	Whole plant decoction	Aggarwal et al. (2022)
Dahlia pinnata Cav.	Perennial herb	Skin ailments, inflammation	Leaf paste	Lim, (2013)
Eclipta prostrata (L.) L.	Annual herb	Liver disorders, hair growth	Juice and paste	Tripathy et al. (2024)
Erigeron canadensis L.	Annual herb	Diuretic, anti-hemorrhagic	Infusion of aerial parts	Sharma et al. (2014)
Gazania linearis (Thunb.) Druce	Perennial herb	Anti-inflammatory	Decoction	El Kady et al. (2015)
Gazania rigens L.	Perennial herb	Anti-inflammatory	Decoction	Samy et al. (2025)
Helianthus annuus L.	Annual herb	Anti-inflammatory, diuretic	Seed and leaf decoction	Singh et al. (2022)
Lactuca serriola L.	Annual herb	Sedative, analgesic	Infusion	Abdul-Jalil, (2020)

Fig. 1. Pie graph showing the overview of *Asteraceae* species used to treat different ailments.

Fig. 2. Bar graph overview of the mode of administration utilized by selected Asteraceae species.

CONCLUSION

This study showed that the Asteraceae plants can be considered a good source of traditional medicine. The recorded species were highly utilized in the treatment of inflammatory diseases, infections, digestive ills and skin-related illnesses, and most of the treatment methods were based on decoction and topical application. The study described from the literature the high reliance on plant-based remedies since they are easily available and effective in treatment. The uniform ethnomedicinal application of such species justifies their future pharmacological validation as well as the isolation of bioactive compounds.

ACKNOWLEDGEMENTS

The authors express their sincere gratitude to the Department of Botany, University of Mianwali, Pakistan, and the Department of Plant Sciences, Quaid-i-Azam University, Islamabad, for providing academic support and access to scientific literature and research resources. The authors also acknowledge the contributions of earlier researchers whose ethnobotanical documentation formed the foundation of this review.

ETHICAL CONSIDERATIONS

The authors have carefully respected ethical standards related to the use of traditional knowledge by appropriately acknowledging all sources and avoiding misrepresentation or misuse of indigenous ethnobotanical information.

AUTHOR CONTRIBUTIONS

- *Salman Majeed*: Conceptualization, literature survey, data synthesis, manuscript drafting, and correspondence.

- *Fakhra Bibi*: Data compilation, analysis of ethnobotanical uses, and manuscript review.

- *Yusra Khan*: Interpretation of medicinal applications and preparation methods.

- *Sehrish Rubab*: Organization of reviewed taxa and contribution to methodological structure.

- *Muhammad Zafar*: Supervision, critical revision of the manuscript, and scientific validation.

All authors have read and approved the final version of the manuscript.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest, whether financial, personal, or academic, that could have influenced the work reported in this paper.

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