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Ethnobotanical Study of Medicinal Plants Used by Traditional Healers for the Prevention and Treatment of Constipation in the Tafila Region, Jordan

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ABSTRACT

Background and Objective: Constipation is a common gastrointestinal disorder managed in many communities through traditional medical practices, including medicinal plants. This study aimed to identify medicinal plants used by traditional healers in the Tafila region of Jordan for the prevention and treatment of constipation and assess their ethnobotanical importance.

Methods: This ethnobotanical study was conducted in February 2026 in Tafila, Jordan, involving 35 local informants. Information on medicinal plants traditionally used for constipation was collected through ethnobotanical fieldwork. Plant specimens were taxonomically identified, and voucher specimens were prepared and preserved. Data were analyzed using qualitative and quantitative ethnobotanical methods.

Results: Seven plant species from seven families were documented for constipation management: *Crocus pallasii* (Iridaceae; bulb; fresh), *Euphorbia hierosolymitana* (Euphorbiaceae; latex and root; ointment in olive oil), *Ficus carica* (Moraceae; leaves and fruits; fresh fruit or leaf decoction), *Lepidium sativum* (Brassicaceae; seeds; decoction), *Malva parviflora* (Malvaceae; leaves; infusion), *Matricaria aurea* (Asteraceae; flowers; infusion), and *Olea europaea* (Oleaceae; fruits; oil). The informant consensus factor (ICF) was 0.928, indicating high agreement among informants. *Ficus carica* had the highest use value (UV = 0.571), followed by *Olea europaea* (UV = 0.514).

Conclusions: The diversity of documented medicinal plants and high informant agreement highlight the importance of traditional plant-based knowledge in managing constipation in the Tafila region. Species with relatively high use values, particularly *Ficus carica* and *Olea europaea*, warrant further pharmacological and clinical investigation to evaluate their therapeutic potential and mechanisms of action.

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Introduction

Constipation is one of the most common gastrointestinal disorders, which is characterized by difficult, infrequent, or incomplete defecation (Forootan et al., 2018). It can substantially impair quality of life and may result from a range of interacting physiological, dietary, and lifestyle-related factors (Camilleri et al., 2017). Dietary habits, inadequate fluid intake, and insufficient physical activity are among the major contributing factors, while age and lifestyle may also influence its occurrence (Lembo & Camilleri, 2003).

Constipation can be managed using various therapeutic approaches, and several pharmacological agents are available for symptom control (Wald, 2016). Nevertheless, medicinal plants continue to play an important role in the management of constipation in many communities, particularly in regions with long-standing herbal medicine traditions (Cirillo & Capasso, 2015). Some medicinal plants exert laxative effects, while others stimulate intestinal motility. Certain species may also facilitate bowel movements by increasing stool bulk or intestinal water content (Cirillo & Capasso, 2015).

Knowledge of medicinal plants is commonly transmitted from one generation to the next and constitutes an important component of the cultural heritage of local communities (Ford, 1994). However, the rapid adoption of modern lifestyles has placed some traditional knowledge at risk of erosion and loss. Declining reliance on traditional medicine among younger generations may further accelerate this process. In parallel, habitat degradation and biodiversity loss pose additional threats to medicinal plant resources. Therefore, systematic documentation and preservation of traditional ethnobotanical knowledge are of considerable scientific and cultural importance (Ford, 1994).

Ethnobotany examines the complex relationships between human societies and plants, with the medicinal uses of plants representing one of its major areas of investigation (Jain, 1986). Ethnobotanical studies can identify plant species traditionally used by local populations and document the specific plant parts employed for medicinal purposes (Rahman et al., 2019).

They can also provide information on methods of preparation and administration. Such knowledge may serve as a valuable basis for subsequent pharmacological research and the scientific evaluation of traditional remedies (Jain, 1986).

Despite its relatively small geographical area, Jordan possesses considerable botanical diversity. Its geographic position contributes substantially to this diversity, as the country lies at the intersection of Asian, African, and European floristic regions. Marked climatic and ecological variation across the country further contributes to its rich plant resources. Approximately 2,000 plant species belonging to around 700 genera have been reported from Jordan. In addition, more than 120 plant species representing over 49 families have been documented as being used in Jordanian traditional medicine (Afifi & Abu-Irmaileh, 2000, Atta & Alkofahi, 1998, Lev & Amar, 2002).

Tafila is an important region in southern Jordan, characterized by diverse geographical and climatic conditions that support a wide range of plant species. In Tafila, local communities have a long-established tradition of utilizing medicinal plants, with ethnobotanical knowledge being passed down through generations. However, information on medicinal plants traditionally used for the management of constipation in this region remains limited.

Documenting this traditional knowledge may therefore have both scientific and cultural significance. Identifying plants used for constipation may reveal valuable botanical resources for further laboratory investigation and pharmacological evaluation. Moreover, assessing the degree of agreement among traditional healers may provide useful evidence regarding the consistency of plant use and the cultural importance of particular remedies. Accordingly, the present study aimed to identify the medicinal plants traditionally used by healers in the Tafila region of Jordan for the management of constipation. In addition, the ethnobotanical importance of the documented plants was evaluated using qualitative and quantitative ethnobotanical indices.

Methods

Ethnobotanical Survey and Data Collection

This ethnobotanical study was conducted in February 2026 in the Tafila region of southern Jordan (Figure 1). Data on the traditional management of constipation were collected through individual interviews with 35 local informants. During the interviews, information was systematically recorded on the plant species used for the management of constipation, the plant parts employed, methods of preparation, and modes of administration.

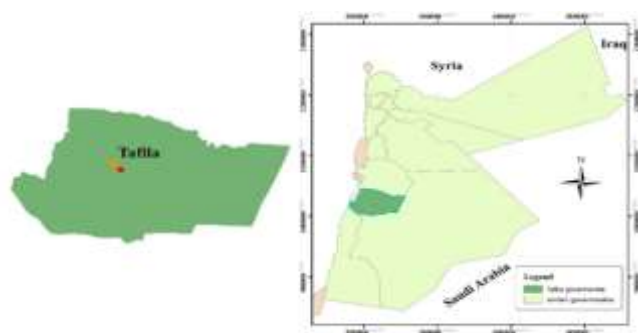


Figure 1. Geographical map showing the location of Tafila region of southern Jordan.

Mature plant specimens were collected during field surveys and taxonomically identified with the assistance of a botanist. Voucher specimens were prepared, labelled, and preserved for reference and subsequent verification. Both qualitative and quantitative analyses were performed on the collected ethnobotanical data.

Quantitative Ethnobotanical Analysis

The ethnobotanical data were quantitatively analysed using the Informant Consensus Factor (Fic) and Use Value (UV) indices. The Fic was used to assess the degree of agreement among informants concerning the medicinal plants used for the management of constipation. It was calculated using the following equation:

$$Fic = (nur - nt) / (nur - 1)$$

where nur represents the total number of use reports for the disease category under investigation, and nt denotes the number of plant species used for that disease category. Fic values range from 0 to 1, with values approaching 1

indicating a high degree of consensus among informants regarding the plants used to manage the condition.

The Use Value (UV) was calculated to estimate the relative importance of each plant species within the local traditional knowledge system. The UV was determined using the following equation:

$$UV = \sum U / n$$

where U represents the number of use reports for a given plant species and n is the total number of informants. Higher UV values indicate that a plant species was reported more frequently and may therefore have greater relative cultural importance within the study community.

Results

Among the 35 informants, 23 (65.7%) were male and 12 (34.3%) were female, with the largest proportion aged 30–50 years (45.7%). Regarding occupation, farmers represented the largest group (48.6%), followed by traditional healers (28.6%) (Table 1).

Table 1. Socio-demographic characteristics of informants participating in the ethnobotanical survey (n = 35)

Variable	Category	n	%
Gender	Male	23	65.7
	Female	12	34.3
Age group (years)	30–50	16	45.7
	51–70	13	37.1
	>70	6	17.1
Occupation	Traditional healer	10	28.6
	Farmer	17	48.6
	Other occupations*	8	22.9

*herbal collectors, livestock keepers, etc.

The ethnobotanical survey conducted in the Tafila region documented several medicinal plant species traditionally used for the management of constipation (Table 2). A total of seven medicinal plant species were recorded. Each species belonged to a different genus and botanical family, indicating the absence of taxonomic overlap at both the genus and family levels. The seven species represented seven botanical families: Iridaceae, Euphorbiaceae, Moraceae, Brassicaceae, Malvaceae, Asteraceae, and Oleaceae.

Table 2. Medicinal plant species traditionally used for the management of constipation in the Tafila region of Jordan

Scientific name	Local name	Family	Plant part used	Mode of preparation/administration
<i>Crocus pallasii</i> Goldb.	Shaheem	Iridaceae	Corm	Fresh
<i>Euphorbia hierosolymitana</i> Boiss.	Halabloob	Euphorbiaceae	Latex and root	Ointment prepared in olive oil
<i>Ficus carica</i> L.	Teen	Moraceae	Leaves and fruit	Fresh fruit and leaf decoction
<i>Lepidium sativum</i> L.	Habb al-Rashad	Brassicaceae	Seeds	Decoction
<i>Malva parviflora</i> L.	Hobazeh	Malvaceae	Leaves	Infusion
<i>Matricaria aurea</i> (Loefl.) Sch. Bip.	Babonej	Asteraceae	Flowers	Infusion
<i>Olea europaea</i> L.	Zaitoon	Oleaceae	Fruit	Oil

Thus, the medicinal plants documented for the traditional management of constipation showed considerable taxonomic heterogeneity, with each recorded species representing a distinct genus and family. The quantitative ethnobotanical indices calculated for the documented medicinal plants are presented in Table 3.

The Informant Consensus Factor (Fic) for constipation was 0.928, indicating a high level of agreement among informants regarding the use of medicinal plants for the traditional management of this condition. Among the documented species, *Ficus carica* had the highest Use Value (UV = 0.571), followed by *Olea europaea* (UV = 0.514). In contrast, *Euphorbia hierosolymitana* had the lowest Use Value (UV = 0.200). The remaining species had intermediate UV values ranging from 0.229 to 0.343. Overall, the quantitative analysis indicated that *Ficus carica* and *Olea europaea* were the most frequently reported medicinal species within the local traditional knowledge system for the management of constipation, whereas *Euphorbia hierosolymitana* had the lowest relative use value.

Table 3. Quantitative ethnobotanical indices of medicinal plants used for the traditional management of constipation

Scientific name	Number of use reports (U)	Use Value (UV)
<i>Crocus pallasii</i> Goldb.	12	0.343
<i>Euphorbia hierosolymitana</i> Boiss.	7	0.200
<i>Ficus carica</i> L.	20	0.571
<i>Lepidium sativum</i> L.	8	0.229
<i>Malva parviflora</i> L.	10	0.286
<i>Matricaria aurea</i> (Loefl.) Sch. Bip.	9	0.257
<i>Olea europaea</i> L.	18	0.514

Overall Informant Consensus Factor (Fic) for constipation: 0.928

Discussion

The findings of the present study demonstrate that medicinal plants continue to contribute to the traditional management of constipation in the Tafila region of Jordan. A total of seven medicinal species representing seven botanical families were documented.

The representation of multiple botanical families suggests that local traditional knowledge draws on a range of plant resources for managing constipation. However, the relatively small number of documented species should be interpreted in the context of the specific geographical and cultural scope of the present study.

The relatively high Informant Consensus Factor (Fic = 0.928) indicates a high level of consensus regarding the use of medicinal plants for the management of constipation within the study population. Such a high level of consensus may reflect the continuity and stability of locally transmitted therapeutic knowledge. However, Fic reflects the degree of agreement within the disease category and should not be interpreted as direct evidence of the efficacy of any particular plant species. Among the documented species, *Ficus carica* (UV = 0.571) and *Olea europaea* (UV = 0.514) had the highest use values, indicating that these species were the most frequently reported within the local traditional knowledge system. Their relatively high UVs identify them as important candidates for further pharmacological investigation.

The findings of the present study are broadly consistent with reports from other geographical regions, although differences in species composition, plant parts used, and preparation methods are evident. Wintola and Afolayan

reported 10 species belonging to eight families that were traditionally used to manage constipation in South Africa. Leaves and roots were among the most frequently used plant parts, while decoction was the predominant preparation method (Wintola & Afolayan, 2010). In contrast, fruits and leaves were the most frequently represented plant parts in the present study. Such differences may reflect variation in local floristic composition, climatic conditions, plant availability, and culturally established therapeutic practices.

Prsaei et al. documented 41 plant species belonging to 27 families from different regions of Iran for the management of constipation. Asteraceae, Brassicaceae, and Rosaceae represented a substantial proportion of the recorded species, and *Ficus carica* was among the plants traditionally used for constipation (Parsaei, 2016). The occurrence of *F. carica* in both Iranian and Jordanian traditional medicine suggests that this species may have broader regional significance in traditional approaches to constipation management. Nevertheless, similarities in traditional use do not establish equivalent pharmacological efficacy and require confirmation through comparative pharmacological and clinical studies.

In the Arasbaran region of Iran, 13 species belonging to 11 families were identified as traditional remedies for constipation. Fruits, leaves, and roots were the most commonly used plant parts, while decoction was the predominant preparation method (Bahmani et al., 2023). These findings are comparable with those of the present study, particularly regarding the frequent use of fruits and leaves and the reliance on relatively simple preparation methods. Such similarities may reflect shared ethnobotanical practices across parts of the broader Middle Eastern region, although differences in local plant availability and cultural traditions may also contribute.

A study conducted in Sikonge, Tanzania, documented 15 species belonging to 12 families and 14 genera as traditional remedies for constipation. Roots were the most frequently used plant part, accounting for 44% of reported uses, while decoction was the predominant preparation method (73%) (Kacholi & Amir, 2024). The greater number of medicinal species reported in the Tanzanian study compared with the present study

may be related to differences in floristic diversity, ecological conditions, availability of medicinal plants, and local cultural practices. Differences in sampling approaches and informant characteristics may also have contributed to the observed variation.

In India, Valluru et al. reported 116 plant species belonging to 55 families used traditionally for gastrointestinal disorders. Constipation accounted for 13.74% of the reported therapeutic indications and represented one of the major gastrointestinal conditions managed using medicinal plants. Leaves and roots were the most frequently utilised plant parts (Valluru et al., 2025). The substantially smaller number of species identified in the present study is likely attributable, at least in part, to the narrower scope of the investigation, which focused specifically on constipation rather than gastrointestinal disorders as a broader category. Differences in study area, sampling intensity, local biodiversity, and ethnobotanical practices may also explain the discrepancy.

Taken together, ethnobotanical studies from different geographical regions demonstrate the continued importance of medicinal plants in traditional approaches to constipation management. Nevertheless, substantial variation exists in the species selected, plant parts utilised, and preparation methods employed. These differences are likely influenced by geographical and ecological conditions, floristic composition, plant availability, and culturally transmitted therapeutic practices. In the present study, *Ficus carica* and *Olea europaea* had the highest use values and therefore warrant particular attention in future pharmacological research. However, high ethnobotanical use values should not be interpreted as evidence of clinical efficacy. Laboratory and animal studies, followed by appropriately designed clinical trials, are required to establish their pharmacological activities, therapeutic effectiveness, mechanisms of action, and safety profiles.

Conclusion

This study documented the continued use of medicinal plants in the traditional management of constipation in the Tafila region of Jordan. Seven medicinal species belonging to seven botanical

families were identified. The high Informant Consensus Factor (Fic = 0.928) indicates a high level of consensus regarding the use of medicinal plants for constipation within the study population. *Ficus carica* and *Olea europaea* had the highest Use Values, indicating their relatively prominent position within the local traditional knowledge system. The range of plant parts utilised and preparation methods documented further reflects the diversity of traditional practices used for the management of constipation in the study area. These findings underscore the importance of systematically documenting and preserving local ethnobotanical knowledge in Tafila, particularly in the context of ongoing social and cultural change. Medicinal species with relatively high use values, particularly *F. carica* and *O. europaea*, may represent promising candidates for further pharmacological investigation. However, ethnobotanical importance alone does not establish therapeutic efficacy or safety. Rigorous experimental and clinical studies are therefore required to determine their pharmacological activities, mechanisms of action, potential therapeutic applications, appropriate dosage, and safety profiles.

Declarations Conflict of Interest

The authors declare no conflicts of interest.

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Consent for Publications

The authors certify that that this work in its final form has been thoroughly reviewed and approved for publication.

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Validation: Ahed J Alkhatib

Visualization: Ahed J Alkhatib

Writing – original draft: Ahed J Alkhatib

Writing – review & editing: Ahed J Alkhatib

Ethical Considerations

Not applicable. This letter does not report new studies involving human participants, animal subjects, or patient data.

AI Use Disclosure

The authors declare that AI tools were not used to generate or develop the scientific content of this manuscript. AI was used solely for English language editing, grammar correction, and improving sentence clarity and readability. The authors take full responsibility for the final content.

References

- Afifi, F. U. and Abu-Irmaileh, B. (2000). Herbal medicine in Jordan with special emphasis on less commonly used medicinal herbs. *Journal of Ethnopharmacology*, 72(1-2), 101-110. doi:10.1016/s0378-8741(00)00215-4.
- Atta, A. H. and Alkofahi, A. (1998). Anti-nociceptive and anti-inflammatory effects of some Jordanian medicinal plant extracts. *Journal of Ethnopharmacology*, 60(2), 117-124. doi:10.1016/s0378-8741(97)00137-2.
- Bahmani, E., Bahmani, F. and Abbaszadeh, S. (2023). Ethnobotanical study of effective medicinal plants as laxative (Anti-constipation): A case study in arasbaran forests, northwest Iran. *Journal of Biochemicals and Phytomedicine*, 2(2), 59-63. doi:10.34172/jbp.2023.12.
- Camilleri, M., Ford, A. C., Mawe, G. M., Dinning, P. G., Rao, S. S., Chey, W. D., et al. (2017). Chronic constipation. *Nature Reviews Disease Primers*, 3, 17095. doi:10.1038/nrdp.2017.95.

- Cirillo, C. and Capasso, R. (2015). Constipation and botanical medicines: An overview. *Phytotherapy Research*, 29(10), 1488-1493. doi:10.1002/ptr.5410.
- Ford, R. I. (1994). The Nature and Status of Ethnobotany, 2nd Ed, University of Michigan Press.
- Forootan, M., Bagheri, N. and Darvishi, M. (2018). Chronic constipation: A review of literature. *Medicine (Baltimore)*, 97(20), e10631. doi:10.1097/md.00000000000010631.
- Jain, S. K. (1986). Ethnobotany. *Interdisciplinary Science Reviews*, 11(3), 285-292.
- Kacholi, D. S. and Amir, H. M. (2024). Ethnobotanical survey of anti-constipation medicinal plants used in Sikonge District, Tanzania. *Ethnobotany Research and Applications*, 28, 1-11. <https://ethnobotanyjournal.org/index.php/era/article/view/5443>.
- Lembo, A. and Camilleri, M. (2003). Chronic constipation. *New England Journal of Medicine*, 349(14), 1360-1368. doi:10.1056/NEJMr020995
- Lev, E. and Amar, Z. (2002). Ethnopharmacological survey of traditional drugs sold in the Kingdom of Jordan. *Journal of Ethnopharmacology*, 82(2-3), 131-145. doi:10.1016/s0378-8741(02)00182-4.
- Parsaei, P. (2016). The most important medicinal plants effective on constipation by the ethnobotanical documents in Iran: A review. *Der Pharmacia Lettre*, 8(2), 188-194.
- Rahman, I. U., Afzal, A., Iqbal, Z., Ijaz, F., Ali, N., Shah, M., et al. (2019). Historical perspectives of ethnobotany. *Clinics in Dermatology*, 37(4), 382-388. doi:10.1016/j.clindermatol.2018.03.018
- Valluru, J. R., Bonela, S. S., P.K, R. K. and Uddandapu, P. K. (2025). Quantitative ethnobotanical evaluation of medicinal flora utilized for Digestive system disorders in Parvathipuram Manyam District, Eastern Ghats, India. *Ethnobotany Research and Applications*, 32, 1-19. <https://ethnobotanyjournal.org/index.php/era/article/view/7582>.
- Wald, A. (2016). Constipation: Advances in Diagnosis and Treatment. *Jama*, 315(2), 185-191. doi:10.1001/jama.2015.16994
- Wintola, O. and Afolayan, A. (2010). Ethnobotanical survey of plants used for the treatment of constipation within Nkonkobe Municipality of South Africa. *African Journal of Biotechnology*, 9(45), 7767.