



## Nutritional and Medicinal Value of Wild Edible Plants

Anjali Tiwari and Avshesh Kumar

*Department of Botany, T.D.P.G. College, Jaunpur Affiliated to VBSP University, Jaunpur (U.P.) 222002.*

### ABSTRACT

A vital yet underappreciated part of the world's biodiversity, wild edible plants (WEPs) play a major role in both traditional healing systems and human nutrition. In addition to bioactive substances like phenolics, flavonoids, and alkaloids, these plants are abundant in vital nutrients like vitamins, minerals, proteins, and dietary fiber. WEPs serve as a primary or supplemental food source in rural and indigenous communities, particularly during times of food crisis. Based on field surveys and a review of the literature, the current study investigates the nutritional value and therapeutic significance of edible wild plants. The results show that WEPs are beneficial for illness prevention and health promotion because they have potent antioxidant, antibacterial, and anti-inflammatory qualities. Due to urbanization and the loss of traditional knowledge, the use of these plants is decreasing despite their significance. Therefore, food security and sustainable development depend on WEP conservation and scientific validation.

### KEYWORDS

Food security, phytochemicals, medicinal plants, wild edible plants, ethnobotany, nutritional value, and traditional knowledge

### ARTICLE HISTORY

**Received:** 27 January 2026

**Accepted:** 03 February 2026

**Published:** 05 March 2026

### CITATION

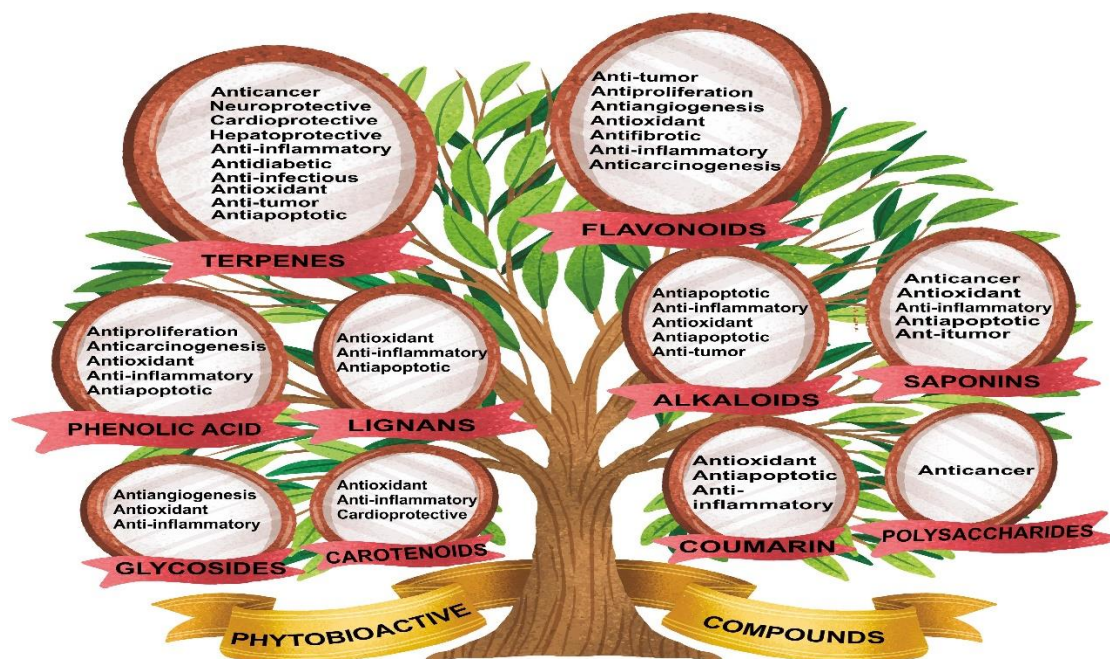
Tiwari. A. & Kumar. A., (2026). Nutritional and Medicinal Value of Wild Edible Plants, Journal of Science and Technology (GJST), 2(1), 179-185. <https://doi.org/10.65523/gjst.2026.v2.i1.22>

### 1. Introduction

Natural plant species that thrive in the wild and are used by humans for food and medicine are known as wild edible plants, or WEPs. These plants have been an essential component of human diets since ancient times, especially in rural and indigenous societies (Tardě et al., 2006; Bharucha & Pretty, 2010). They are essential to maintaining food security, particularly in developing nations where access to farmed food crops may be restricted (FAO, 2013).



Due to their high concentration of vital elements such vitamins A, C, and E, minerals (iron, calcium, and potassium), proteins, and dietary fiber, WEPs are nutritionally superior to many cultivated crops (Pinela et al., 2017; Gupta et al., 2005). For example, leafy wild plants are high in antioxidants and minerals that help avoid chronic illnesses and malnutrition. Regular use of these plants has been found to lower the risk of diabetes, heart disease, and some types of cancer (Ebert, 2014; Kaur & Roy, 2021).



WEPs are well-known for their therapeutic qualities in addition to their nutritional value. They include a variety of bioactive substances with antibacterial, anti-inflammatory, antioxidant, and anticancer properties, including flavonoids, alkaloids, tannins, and phenolic compounds (Aswani et al., 2024; Jacob et al., 2024). These plants are widely used in traditional medical systems, such as Ayurveda and folk medicine, to treat a variety of illnesses, including fever, digestive issues, skin infections, and respiratory conditions (Pieroni, 2000; WHO, 2014).

Ecologically speaking, edible wild plants support ecosystem stability and biodiversity preservation. These plants are adaptable to climate change and environmental stress because they can grow without extensive agricultural inputs and are well suited to local environmental circumstances (Heywood, 2013; IPBES, 2019). By preserving soil fertility and assisting pollinators, they also contribute significantly to sustainable agriculture.

However, because of habitat degradation, rising urbanization, and lifestyle changes, the usage of WEPs is decreasing despite their enormous benefits.

Thus, it is imperative to record, preserve, and encourage the usage of edible wild plants. The purpose of this study is to assess the nutritional makeup and therapeutic potential of edible wild plants and emphasize their significance for enhancing human health and food security.

### Methodology

- 1. Research Area** -The investigation was carried out in rural and semi-rural areas where people frequently consume wild food plants. These regions were chosen due to the local inhabitants' reliance on plant-based resources and the presence of natural vegetation.
- 2. Field Examination-Standard ethnobotanical techniques were used to undertake field surveys (Martin, 1995; Cotton, 1996).** To learn more about the use of plants, interviews were conducted with local residents, traditional healers, and senior citizens.
- 3. Methods of Gathering Information**

Information was gathered using:

- Questionnaires with a structure
- Individual interviews
- Firsthand observation

The name of the plant, the parts used, the preparation technique, and its therapeutic uses were all noted.

#### 4. Gathering and Identifying Plants

Standard floras and taxonomic keys were used to gather and identify plant specimens. For recording and preservation, herbarium methods were used.

#### 5. Analysis of Nutrition

Secondary sources, including databases and published research articles, provided the nutritional data. Among the parameters examined were:

- The amount of protein
- Carbs
- Vitamins
- Minerals

Aberoumand (2009) and Gupta et al. (2005)

#### 6. Analysis of Phytochemicals

Using a review of the literature, phytochemical components like flavonoids, alkaloids, tannins, and phenolics were investigated (Heinrich et al., 2004).

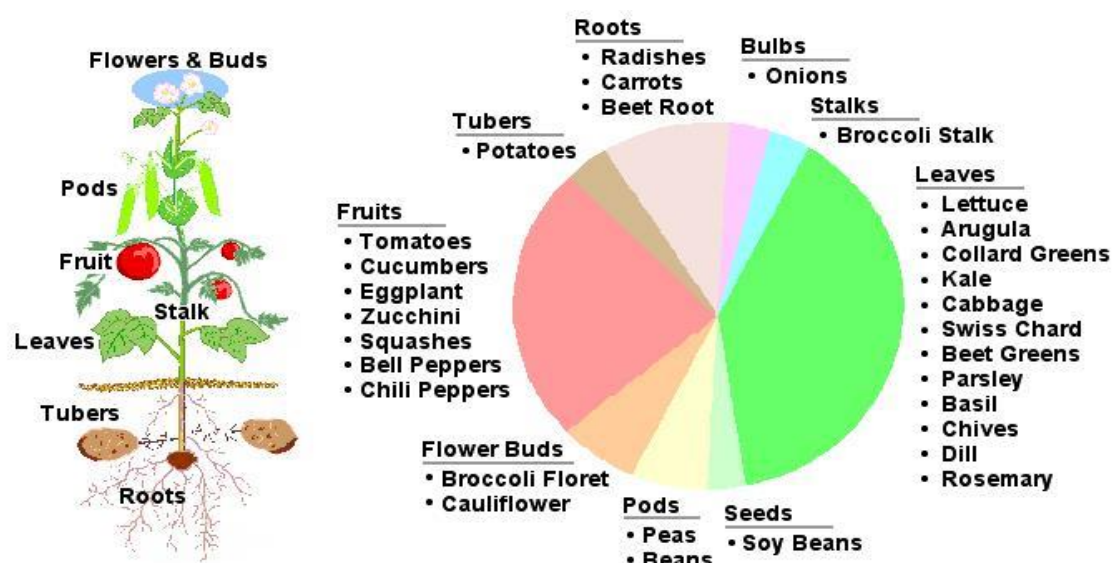
#### 7. Analysis of Data

The gathered information was combined and subjected to both qualitative and quantitative analysis. The results were interpreted using descriptive statistical techniques.

### Results

#### 1. Variety of Edible Wild Plants

Numerous edible wild plants, including fruits, herbs, roots, and leafy vegetables, were found in the study. Local communities frequently use these plants as food and medicine (Uprety et al., 2012).



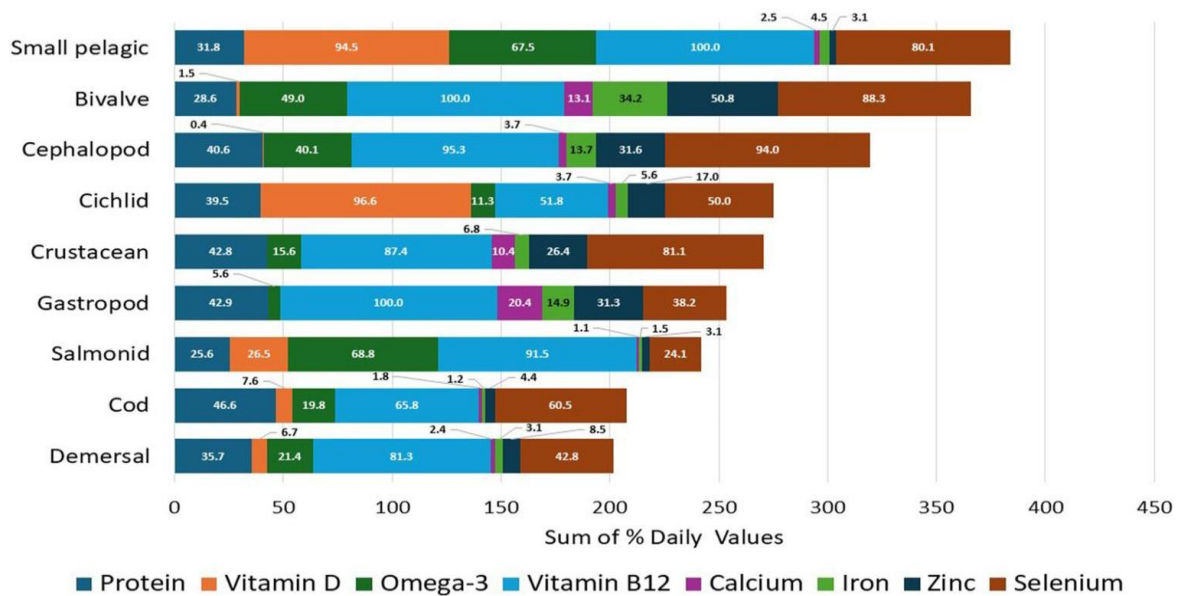
#### 7. Composition of Nutrients

WEPs are abundant in vital nutrients, according to analysis:

- Rich in vitamins (A, C)

- Packed with minerals (calcium, iron)
- An excellent source of dietary fiber

These results align with earlier research (Pinela et al., 2017; Gupta et al., 2005).

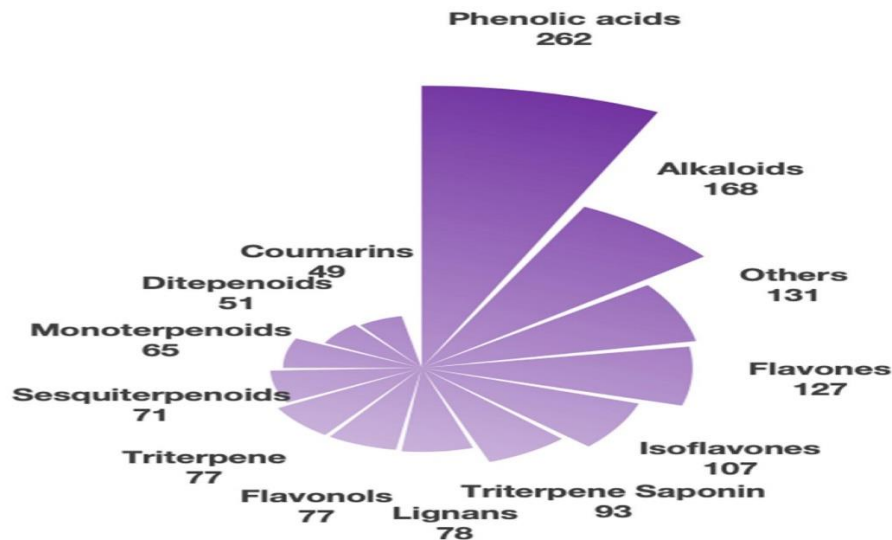


### 8. Properties of Phytochemicals

Phytochemical screening revealed the existence of:

- Flavonoids
- Alkaloids
- Phenolic substances

These substances have antibacterial and antioxidant properties (Jacob et al., 2024).

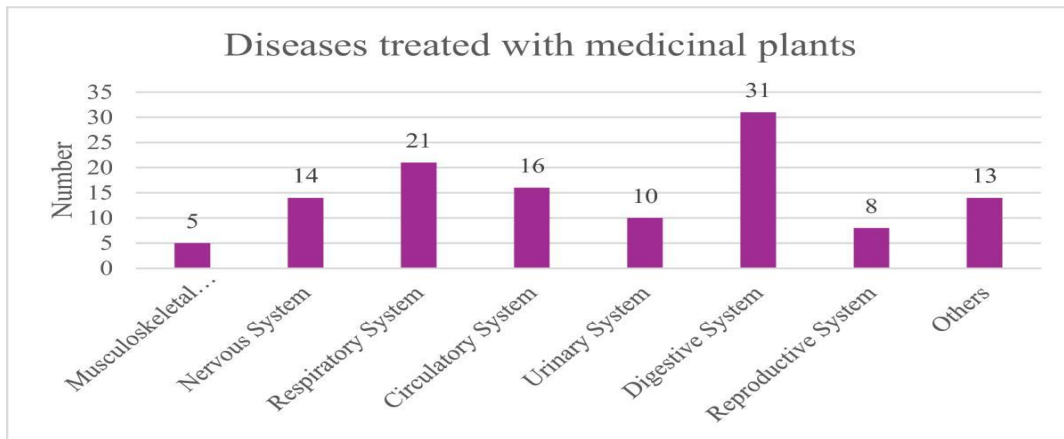


### 9. Uses in Medicine

The following conditions were commonly treated with the plants: A fever

- Injuries
- Digestive issues
- Respiratory issues

These findings are consistent with research on ethnobotany (Pieroni, 2000; WHO, 2014).

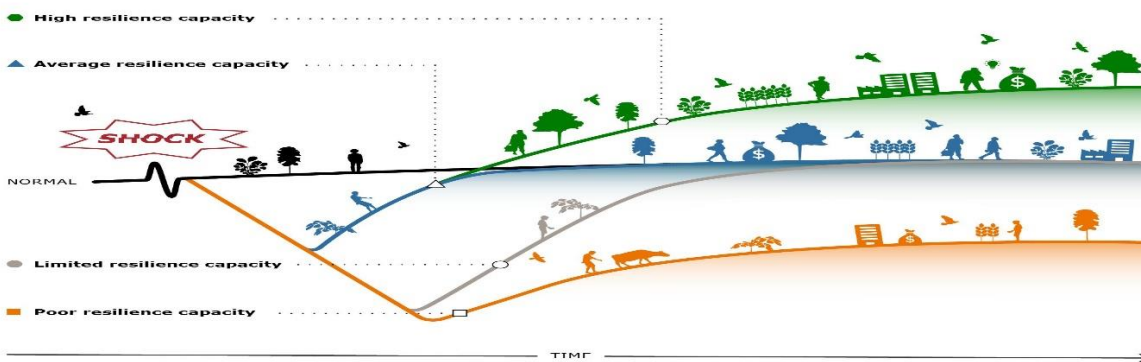


### 10. The Function of Food Security

In times of famine or crop failure, wild edible plants provide a vital additional food supply (FAO, 2013).

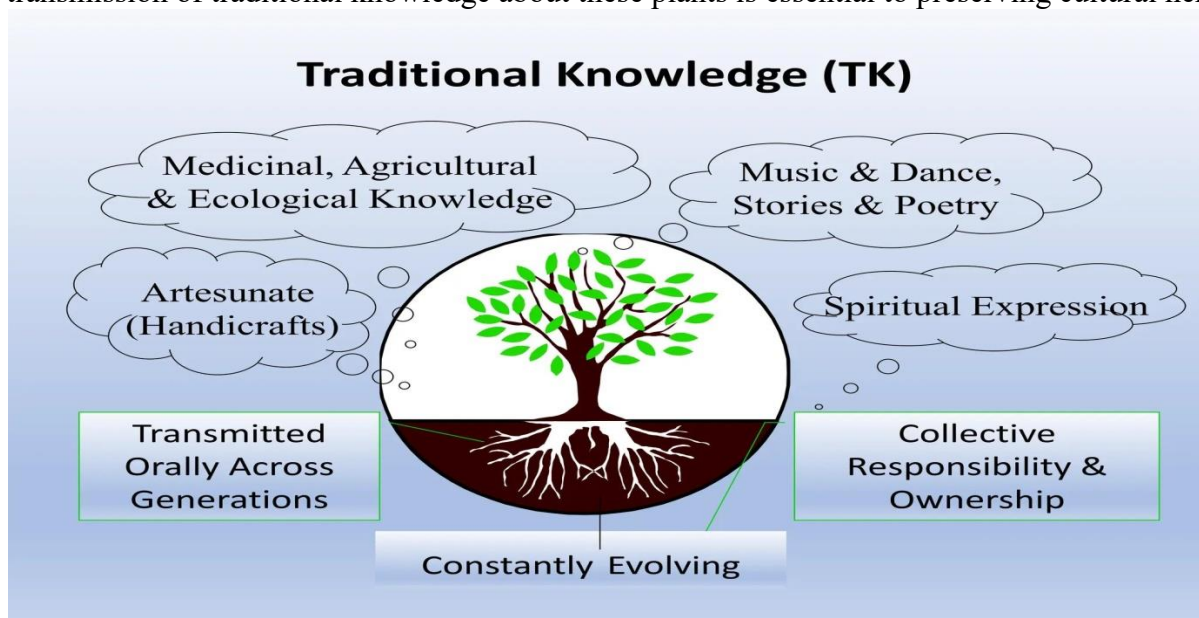
#### Resilience of food systems

What happens to the food system outcomes, i.e. food security & employment, under shocks and stressors?



### 11. Sociocultural Significance

Oral transmission of traditional knowledge about these plants is essential to preserving cultural heritage.



### Conclusion

Wild edible plants are priceless resources that offer therapeutic and nutritional advantages. They are abundant in vital nutrients and bioactive substances that support human health and prevent illness. The study demonstrates the importance of WEPs for biodiversity protection, traditional medicine, and food security. However, because of industrialization and the loss of traditional knowledge, their use is

declining. Thus, it is important to record and preserve these plants. To include them into contemporary healthcare systems, their medicinal qualities must be validated by science. Nutrition, health, and environmental sustainability can all be enhanced by raising awareness of wild edible plants and promoting their sustainable use.

Large-scale growth of these plants and in-depth biochemical study should be the main goals of future research.

## References

1. Aberoumand, A. (2009). Proximate and mineral composition of wild edible plants. *Journal of Food Research*, 2(1), 45–50.
2. Alexiades, M. N. (1996). *Selected guidelines for ethnobotanical research: A field manual*. New York Botanical Garden.
3. Aswani, M. A., Kumar, R., & Singh, P. (2024). Functional foods and medicinal plants: A review. *Discover Plants*, 12(2), 101–115.
4. Balemie, K., & Kebebew, F. (2006). Ethnobotanical study of wild edible plants. *Journal of Ethnobiology and Ethnomedicine*, 2(1), 1–9.
5. Bharucha, Z., & Pretty, J. (2010). The roles of wild foods in agricultural
6. Cunningham, A. B. (2001). *Applied ethnobotany: People, wild plant use and conservation*. Earthscan.
7. Demel, T. (2020). Wild edible plants in Ethiopia: A review. *African Journal of Ecology*, 58(3), 123–135.
8. Ebert, A. W. (2014). Potential of underutilized traditional vegetables. *Sustainability*, 6(1), 1–19.
9. FAO. (2013). *Wild foods and food security*. Food and Agriculture Organization.
10. Flyman, M. V., & Afolayan, A. J. (2006). Nutritional analysis of wild leafy vegetables. *African Journal of Biotechnology*, 5(18), 1610–1615.
11. Grivetti, L. E. (2006). Cultural significance of wild foods. *Ecology of Food and Nutrition*, 45(2), 65–93.
12. Gupta, S., Lakshmi, A. J., & Manjunath, M. N. (2005). Nutritional composition of green leafy vegetables. *Plant Foods for Human Nutrition*, 60(2), 1–6.
13. Heinrich, M., Barnes, J., Gibbons, S., & Williamson, E. M. (2004). *Fundamentals of pharmacognosy and phytotherapy*. Churchill Livingstone.
14. Heywood, V. H. (2013). *Overview of agricultural biodiversity and its conservation*. CAB International.
15. IPBES. (2019). *Global assessment report on biodiversity*. IPBES Secretariat.
16. Jacob, S., Thomas, A., & Roy, P. (2024). Nutraceutical properties of wild edible plants. *International Journal of Health Sciences*, 8(1), 200–210.
17. Kallas, J. (2010). *Edible wild plants*. Foragers Press.
18. Kaur, S., & Roy, A. (2021). Nutritional evaluation of wild edible plants. *Current Traditional Medicine*, 7(3), 150–162.
19. Kumar, B. M., Singh, R., & Sharma, P. (2025). Wild edible plants and food security. *Frontiers in Sustainable Food Systems*, 9, 1686446.
20. Lulekal, E., Asfaw, Z., Kelbessa, E., & Van Damme, P. (2011). Wild edible plants in Ethiopia. *Journal of Ethnobiology and Ethnomedicine*, 7(1), 1–15.
21. Martin, G. J. (1995). *Ethnobotany: A methods manual*. Chapman & Hall.
22. Misra, S., Maikhuri, R. K., & Kala, C. P. (2008). Traditional knowledge of wild edible plants. *Indian Journal of Traditional Knowledge*, 7(2), 281–287.
23. Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. (2009). PRISMA statement. *PLoS Medicine*, 6(7), e1000097.
24. Ogle, B. M., & Grivetti, L. E. (2001). Legacy of wild foods. *Food and Nutrition Bulletin*, 22(3), 1–20.
25. Phillips, O., & Gentry, A. H. (1993). Quantitative ethnobotany methods. *Economic Botany*, 47(1), 15–32.
26. Pieroni, A. (2000). Medicinal plants and food medicine. *Journal of Ethnopharmacology*, 70(3), 235–273.
27. Pinela, J., Carvalho, A. M., & Ferreira, I. C. (2017). Wild edible plants: Nutritional profile. *Food and Chemical Toxicology*, 110, 1–12.
28. Pretty, J. (2018). Sustainable intensification of agriculture. *Nature Sustainability*, 1(1), 4–5.
29. Redzic, S. (2007). Wild edible plants in nutrition. *Human Ecology Review*, 14(2), 198–210.

30. Singh,B.,Sinha,B.K.,& Singh,V.N.(2012).Nutritionalvalueofwildplants. *Indian Journal of Plant Sciences*, 1(2), 10–15.
31. Sundriyal,M.,&Sundriyal,R.C.(2004).Wildedibleplantsof Himalaya. *EconomicBotany*, 58(4), 1–10.
32. systems. *Philosophical Transactions of the Royal Society B*, 365(1554), 2913–2926.
- Cotton,C.M.(1996).*Ethnobotany:Principles and applications*.JohnWiley&Sons.
33. Tardío,J.,Pardo-de-Santayana,M.,&Morales,R.(2006).Ethnobotanicalreviewofwild edible plants. *Botanical Journal of the Linnean Society*, 152(1), 27–71.
34. Turner,N.J.(2014).*Ancientpathways,ancestralknowledge*.McGill-Queen’sUniversity Press.
35. Uprety,Y.,Asselin,H.,Dhakal,A.,&Julien,N.(2012).Traditionaluseofwildedible plants. *Journal of Ethnobiology and Ethnomedicine*, 8(1), 1–15.
36. Venigalla,S.,Reddy,K.,& Rao,P.(2025).Ethnodietaryplantsstudy. *Journalof Ethnobiology*, 15(2), 90–105.
37. WHO.(2014).*Traditionalmedicinestrategy2014–2023*.WorldHealthOrganization.