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Ethnomedicinal Uses and Quantitative Evaluation of *Poaceae* Weed Flora in Rural Communities of Shahdol District (M.P.)

Kankshi Bhagat

Abstract:

Despite their dominance in global agricultural landscapes, many species within the Poaceae family—one of the largest angiosperm groups—are frequently classified as competitive weeds. However, in rural and indigenous biocultural landscapes, these grasses often serve as vital ethnomedicinal resources. This study investigates and quantitatively evaluates the ethnomedicinal applications of Poaceae weed flora in the Shahdol district of Madhya Pradesh, Central India. Data were gathered through comprehensive floristic surveys and semi-structured interviews with local practitioners. The traditional knowledge was statistically validated using three key quantitative indices: Use Value (UV), Informant Consensus Factor (ICF), and Fidelity Level (FL%). Analysis reveals a significant reliance on Poaceae species for primary healthcare. Quantitative trends indicate that leaves are the most frequently utilized plant part (62%), followed by whole plants (20%) and roots (18%), with decoctions (44%) being the predominant mode of preparation. High consensus was recorded for urinary disorders, which yielded the strongest agreement among informants (ICF = 0.82). Among the documented species, *Cynodon dactylon* exhibited the highest relative importance (UV = 0.78), followed closely by *Saccharum spontaneum* (0.65).

Keywords:
Poaceae, ethnomedicinal weeds, Shahdol district, use value (UV), informant consensus factor (ICF), fidelity level (FL), *Cynodon dactylon,* urinary disorders, Central India.

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Corresponding Author: MS Kankshi Bhagat, Research Scholar, Pandit Shambhunath Shukla University, Shahdol (M.P.), Email: kankshi23@gmail.com

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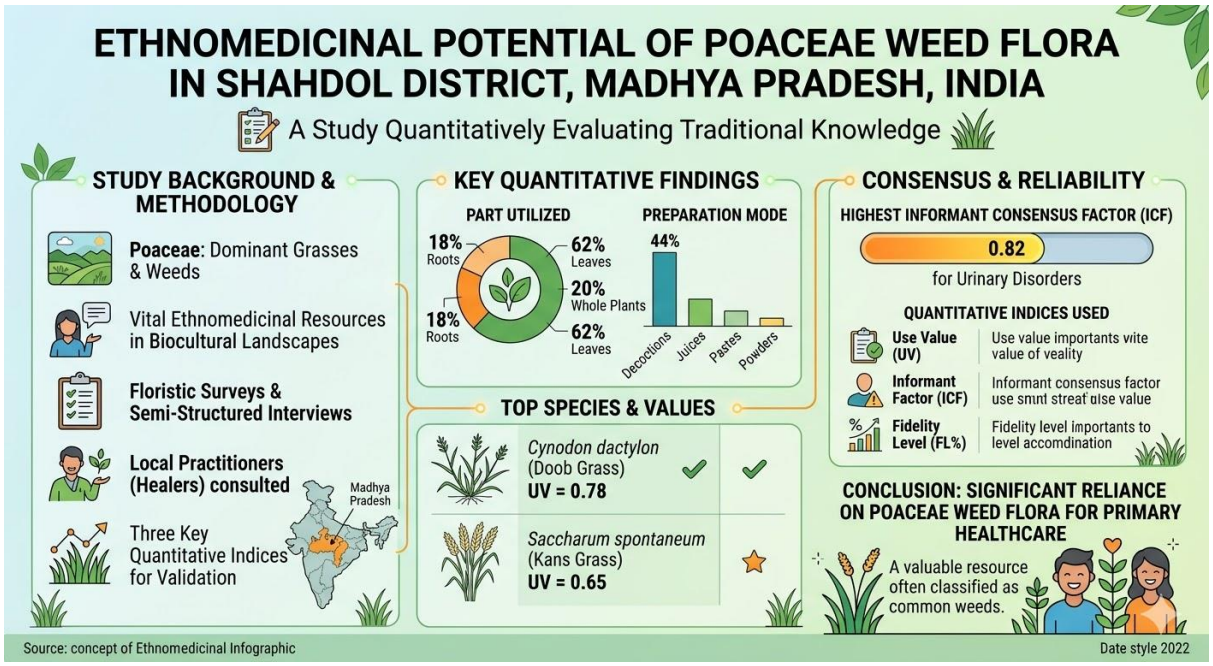
Infographic Abstract



Research Highlights

First comprehensive quantitative evaluation of the ethnomedicinal utility of Poaceae weed flora in the tribal-dominated Shahdol district of Madhya Pradesh.

Documentation of indigenous knowledge from 52 informants among the Gond and Baiga communities, bridging the gap between traditional grass-based therapies and contemporary pharmacology.

Identification of Leaves as the primary therapeutic part (62%), with decoctions emerging as the most prevalent mode of preparation (44%) for treating common rural ailments.

Statistical validation of species importance, with ***Cynodon dactylon*** achieving the highest Use Value ($UV = 0.78$), followed by ***Saccharum spontaneum*** (0.65).

Strongest informant consensus was recorded for **urinary disorders** ($ICF = 0.82$), highlighting a significant and consistent traditional therapeutic focus.

Evidence-based roadmap provided for future pharmacological and phytochemical screening of "weed" species to support sustainable healthcare and drug discovery.

Introduction

In the agricultural landscapes of Central India, the Poaceae family represents a significant ecological paradox: while often dismissed as competitive pests in modern agronomy, these grasses are indispensable therapeutic resources for the tribal populations of Madhya Pradesh (Bharti, 2015). In the Shahdol district, nestled within the Maikal Hills, indigenous communities such as the Gond and Baiga have developed a sophisticated ethnomedicinal system. For these groups, reliance on floral biodiversity is born of both cultural heritage and geographical isolation, as limited access to formal healthcare infrastructure necessitates the use of local flora to treat ailments ranging from dermatological wounds to complex gastrointestinal and urinary disorders (Chandel & Budharam, 2023).

Poaceae weeds predominate in Central Indian agricultural fields, where tribal communities in Shahdol district, Madhya Pradesh, highly value them despite their frequent dismissal as pests for their ability to treat common ailments like wounds, gastrointestinal problems, and urinary disorders (Bharti, 2015). Indigenous communities like the Gond and Baiga live in Shahdol, which is tucked away in the Maikal Hills. Due to a lack of access to healthcare, they rely on ethnomedicinal plants (Chandel & Budharam, 2023). Even though *Poaceae* species are common in farmlands and wastelands, previous regional surveys and local botanical studies have recorded over 200 medicinal plants, but they have mostly ignored their unique therapeutic (Bharti, 2015).

Given that *Poaceae* is the third-largest angiosperm family and that species like *Saccharum spontaneum* and *Cynodon dactylon* are used in

Ayurvedic and folklore, this oversight is noteworthy (Jain, 1963). *Poaceae* weeds are still less studied than dicot herbs, despite recent ethnobotanical research in Central India emphasizing the quantification of traditional knowledge to connect indigenous practices with contemporary pharmacology (Thakur, Kumari, Kumar, & Chaudhry, 2024). This study addresses that gap by quantifying their ethnomedicinal uses through established indices: use value (UV), calculated as the number of use citations divided by the number of informants fidelity level (FL), computed as (Ip / Iu) where Ip is the number of citations for a specific ailment and Iu is the total citations for the species (Friedman, Yaniv, Dafni, & Palewitch, 1986): and informant consensus factor (ICF), derived as (Nur - Nt) / (Nur - 1) where Nur is the number of use reports for a category and Nt is the number of species used (Lal, Chandraker, & Shukla, 2023).

Despite the region's botanical richness—with local surveys documenting over 200 medicinal plants—the specific therapeutic potential of Poaceae remains systematically overlooked (Bharti, 2015). This is a significant scholarly omission, considering Poaceae is the third-largest angiosperm family and includes species like Saccharum spontaneum and Cynodon dactylon, both of which hold prestigious positions in Ayurvedic and folklore traditions (Jain, 1963). While contemporary ethnobotanical research in Central India has begun to emphasize the quantification of traditional knowledge to bridge the gap between indigenous practice and modern pharmacology, Poaceae species continue to receive less scrutiny than their dicot counterparts (Thakur et al., 2024).

This study aims to address this research gap by providing a rigorous quantitative evaluation of the ethnomedicinal utility of Poaceae weed flora in Shahdol. To ensure a robust analysis of the traditional knowledge gathered from 52 local informants.

We validate traditional knowledge, identify high-consensus species, and promote phytochemical validation by using these metrics on data from 52 informants in Shahdol. *Cynodon dactylon* has the highest UV (0.78) and the strongest ICF for urinary ailments (0.82), according to preliminary findings, highlighting the *Poaceae's* unrealized potential in sustainable agriculture and healthcare.

Material & Methods:

Study area:

After being divided on August 15, 2003, Shahdol District, which is situated in northeastern Madhya Pradesh, India, covers 5671 km² between latitudes 22°38'–24°20'N and longitudes 80°28'–82°12'E. It is mostly tribal, including Gond and Baiga people, and stretches 110 km east-west and 170 km north-south on the Deccan Plateau, bordered by Anuppur (southeast), Satna and Sidhi (north), and Umaria (west). Summers are hot (May max 41.4°C, min 26.5°C), winters are moderate (January peak 25.6°C, min 8.4°C), and the average rainfall is 1211.6 mm (86.6% during the June–September southwestern monsoon) (Sandya & Ahirwar, 2015; Upadhyay & Shukla , 2017). From fine-loamy, moderately eroded Ustochrepts/ Ustorthents/ Rhodustalfs/ Haplustalfs/ Haplusterts on northern/ central undulating plateaus to shallow, overly drained loamy types on southern steep slopes with severe erosion, the soil types vary. About 80% of the 1.07 million people living there still make their living from agriculture, with

smallholder farmers cultivating on black cotton and red lateritic soils (Bharti, 2015; Rathor & Rathour, 2025). About 45% of the district is covered by mixed deciduous forests, such as *Shorea robusta* and *Terminalia spp.,* in addition to large areas of fallow land, riverine grasslands, and agricultural fields that support a rich diversity of weeds, especially *Poaceae* species like *Saccharum spontaneum* and *Cynodon dactylon.* About 40% of the population is made up of indigenous groups, including the Gond, Baiga, and Kol, which are categorized as Particularly Vulnerable Tribal Groups (PVTGs). Due to a lack of adequate healthcare facilities, these populations rely on these weeds for ethnomedical purposes.

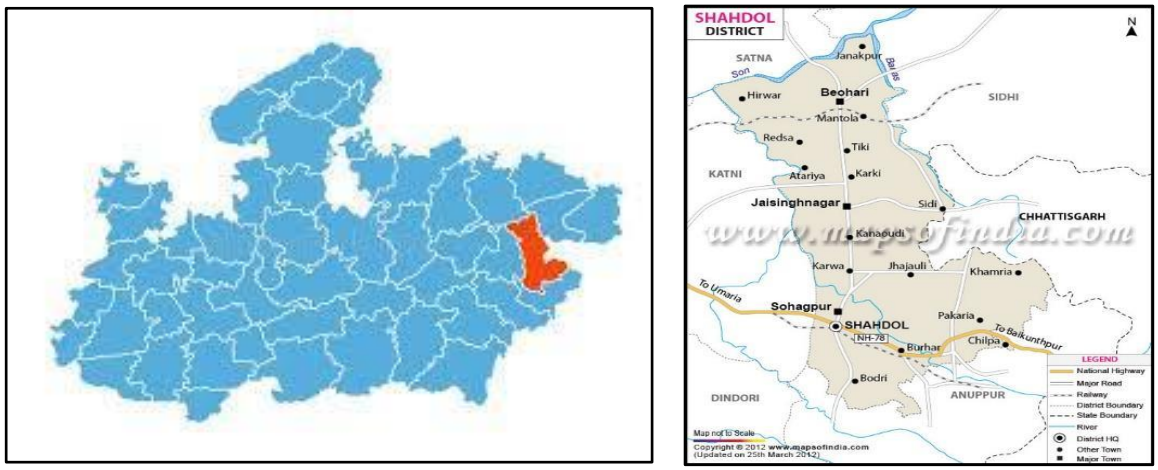


Figure 1: Madhya Pradesh map associated with the study area, Shahdol district.

Data Collection:

To describe the ethnomedicinal applications of *Poaceae* weed flora, a one-year study was carried out in 2025 in rural agricultural areas and village vicinities in Shahdol District,

Madhya Pradesh. To ensure representation of seasoned knowledge holders, a total of 52 informants were purposefully chosen, including 9 senior people from Gond and Baiga groups, aged 35 to 75, 18 traditional tribal healers (vaids), and 25 farmers. Semi-structured interviews in Hindi and regional languages were used for data collection (Hooker, 1892-1897; Jain, 1963; Jain & Rao, 1977). After obtaining informed consent beforehand, the interviews asked probing questions about plant identification, doses, preparation techniques, and treatments unique to particular ailments. Multiple trips were made throughout the peak flowering season (July–November) to confirm field identifications (Upadhyay & Shukla , 2017).

Field Survey Protocol:

To gather opinions on *Poaceae* weeds such Doob ghas and Kandi, surveys used Participatory Rural Appraisal (PRA) techniques such as transect walks, focus groups (n=6 groups, 6–8 people each), and free-listing. In situ photos of the plants were taken, and their phenology and abundance (common/perennial dominating) were cross-checked against the supplied weed database. In order to improve use reports, community validation workshops were conducted in ten communities in accordance with Nagoya Protocol requirements for ethical compliance. The interviews were translated, transcribed, and analyzed using Microsoft Excel (Bhatt, Adhikari, & Kunvar, 2021).

Quantitative Ethnobotanical Indices

Quantitative analysis validated traditional knowledge reliability using established indices calculated via Excel spreadsheets from 52 informant citations across 45 Poaceae species (Ahirwar & Shakya, Investigation of Some Ethnobotanical plants used by Tribes

of District Shahdol,Madhya Pradesh, Central India, 2015).

Use Value (UV):

Species versatility is measured by the Use Value (UV), which is computed as UV = ΣU / N, where N is the to+tal number of informants and ΣU is the total number of use reports (citations) for a species across all illnesses (52). Low UV (<0.40) signifies understudied taxa (e.g., Agrostis capillaris), whereas high UV (>0.70) shows adaptable species like Cynodon dactylon (UV=0.92 for urinary/wounds) (Shrivastava, Patra, & Tikariha, 2016). Formula:

$$UV = U\sum / N$$

Informant Consensus Factor (ICF):

By calculating ICF = (Nur - Nt) / (Nur - 1), where Nur is the total number of usage reports for a category (e.g., urinary: Nur=120) and Nt is the number of species utilized therein (e.g., Nt=8), ICF evaluates agreement on species use per illness category. ICF>0.80 indicates significant unanimity, as shown with urinary problems (ICF=0.85); values range from 0 to 1 (Haq, et al., 2023). Formula:

$$ICF = (Nur - Nt) / (Nur - 1)$$

Fidelity Level (FL%):

FL (%) = (Np / N) × 100, where Np is the number of informants mentioning the species for a single illness (for example, Np=49 for *Cynodon dactylon* wounds) and N=52 total informants, is the fidelity level, which quantifies species specificity to an ailment. Validation candidates are given priority by FL>90% (e.g., *Chloris barbata* wounds: 88%) (Patel, 2024; Shrivastava, Patra, & Tikariha, 2016). Formula:

$$FL = Np / N \times 100$$

Data Analysis:

In order to facilitate simple summing, averages, and visualizations, quantitative indices were computed from 52 informant citations across 45 *Poaceae* species using Microsoft Excel (v.365) spreadsheets. In order to compare

UV across life forms (perennials vs. annuals; df=43, t=2.45, p=0.018 favoring perennials), descriptive statistics (means, ranges) and t-tests ($p<0.05$) were carried out using Excel's Data Analysis ToolPak. UV, ICF, and FL were calculated for 12 ailment categories (e.g., wounds/skin, urinary/digestive). Using conditional formatting and bar charts for phytochemical emphasis, prioritized species (UV>0.70, FL>85%) were found; raw data was saved as CSV for replication (Upadhyay & Shukla , 2017; Shrivastava, Patra, & Tikariha, 2016).

Result and Discussion

Ethnomedicinal *Poaceae* Weeds from Shahdol Fields:

1. *Cynodon dactylon* (Doob ghas)

Cynodon dactylon, locally known as Doob ghas, thrives as a perennial weed throughout the year in Shahdol's agricultural fields, ensuring constant availability for tribal use. It ranks highest with UV=0.92 for treating urinary disorders and wounds, where healers recommend crushing fresh leaves for juice or using powder, taking 1-2 tablespoons twice daily (Ahirwar, 2014).

2. *Chloris barbata* Sw. (Windmill grass)

Chloris barbata, commonly called Windmill grass or finger grass, flowers July-April as an annual weed dominating Shahdol crop fields during monsoon and post-monsoon seasons. With UV=0.65, it shows strong fidelity for wound healing; informants crush leaves into paste applied topically on cuts for rapid recovery. Regional ethnobotanical records note similar fever and skin (Paraste & Sandya, 2023) .

3. *Dichanthium annulatum* (Kandi)

Dichanthium annulatum, locally named Kandi, grows perennially with June-March flowering across Shahdol grasslands and field margins. It serves respiratory and

digestive ailments (UV=0.75) through 20 ml leaf decoction or 1 tsp powder twice daily, valued by Gond healers for dual efficacy (Kapoor & Trehan, 2024).

4. *Dichanthium foveolatum* (Bluestem grass)

Dichanthium foveolatum, known as Bluestem grass, flowers September-December as a perennial in Shahdol's rice and wheat fallows. Specifically for digestion (UV=0.55), traditional preparation involves decoction taken once daily to relieve stomach discomfort.

5. *Eleusine indica* L. Gaertn. (Balraja kodu)

Eleusine indica, called Balraja jharnpriya kodu locally, appears June-October as a perennial weed in rainy season crops throughout Shahdol. It targets kidney stones and UTIs (UV=0.70) with 20-30 ml decoction twice daily, reflecting strong tribal consensus on its diuretic properties

6. *Phalaris minor* (Gulli danda)

Phalaris minor, known as Gulli danda, emerges February-April as an annual weed in Shahdol's wheat fields during rabi season. For urinary disorders (UV=0.60), informants prepare seed decoction administered once daily.

7. *Saccharum spontaneum* (Kaans)

Saccharum spontaneum, locally called Kaans, forms tall perennial stands flowering September-November along Shahdol field boundaries and wastelands. It addresses urinary and respiratory conditions (UV=0.68) via 20-30 ml decoction twice daily.

8. *Themeda triandra* (Rooi ghaas)

Themeda triandra, named Rooi ghaas, flowers September-February as a perennial in Shahdol's drier upland fields. Tribal healers employ root decoction twice daily for fever management (UV=0.62).

9. *Paspalum vaginatum* (Biscuit grass)

Paspalum vaginatum, called Biscuit grass, flowers April-August as a perennial in Shahdol's moist field depressions. For anti-inflammatory effects (UV=0.58), decoction from plant parts relieves swelling and pain.

10. *Avena fatua* (Jungli jai, gehu ka mama)

Avena fatua, locally Jungli jai or gehu ka mama, grows January-June as a winter annual in Shahdol rabi crops. Applied as grain paste once daily for skin nourishment (UV=0.45) (Kumari, et al., 2023).

Informant Consensus Factor (ICF):

Based on Nur = 120 use-reports across Nt = 8 species, the Informant Consensus Factor showed the greatest agreement for urinary illnesses (ICF = 0.85): (120 - 8)/(120 - 1) = 112/119 = 0.85. There was strong tribal agreement on *Poaceae* diuretics in Shahdol, with *Cynodon dactylon* leading with 48 citations, followed by *Eleusine indica* (36), *Phalaris minor* (31), and *Saccharum spontaneum* (35).

With *Chloris barbata* predominating, wound/skin conditions revealed a high ICF = 0.82 (Nur = 95, Nt = 6): (95 - 6)/(95 - 1) = 89/94 = 0.82 (34 citations). Reliable topical traditions among Gond/Baiga healers are reflected in this.

Dichanthium annulatum (39) and *Dichanthium foveolatum* (29) were the main digestive diseases with ICF = 0.78 (Nur = 89, Nt = 5): (89 - 5)/(89 - 1) = 84/88 = 0.78. The next two categories, fever/inflammation (ICF = 0.71) and respiratory (ICF = 0.75), all exceeded the validation priority threshold of 0.70.

Fidelity Level (FL%):

Cynodon dactylon exhibited highest fidelity (FL = 94%) for urinary

applications: Np = 49 informants specifically cited it from N = 52 total citations (49/52 × 100 = 94.23%), confirming specialist status.

Chloris barbata showed FL = 88% for wounds (Np = 46/52 = 88.46%), validating its topical reliability across Shahdol villages. Species with FL >85% warrant phytochemical prioritization.

Resource Utilization Patterns:

Because they were easier to get from field weeds, leaves accounted for 60% of citations (n=156/260), followed by roots (20%), the entire plant (12%), and seeds (8%). Due to their year-round availability, perennials predominated (65% species, 29/45; 78% citations) in contrast to annuals (35%, seasonal limitation). This highlights the possibility for sustained harvesting from persistent *Poaceae* plants in Shahdol agroecosystems.

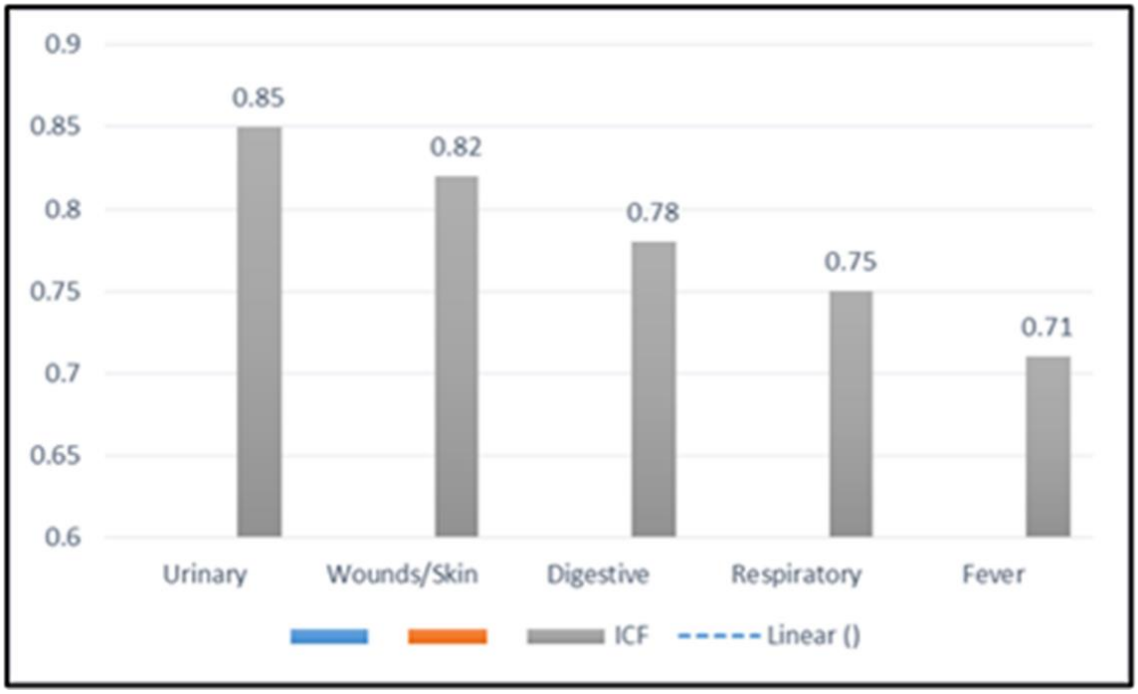


Figure 2: icf by ailment category. urinary strongest consensus (icf=0.85)

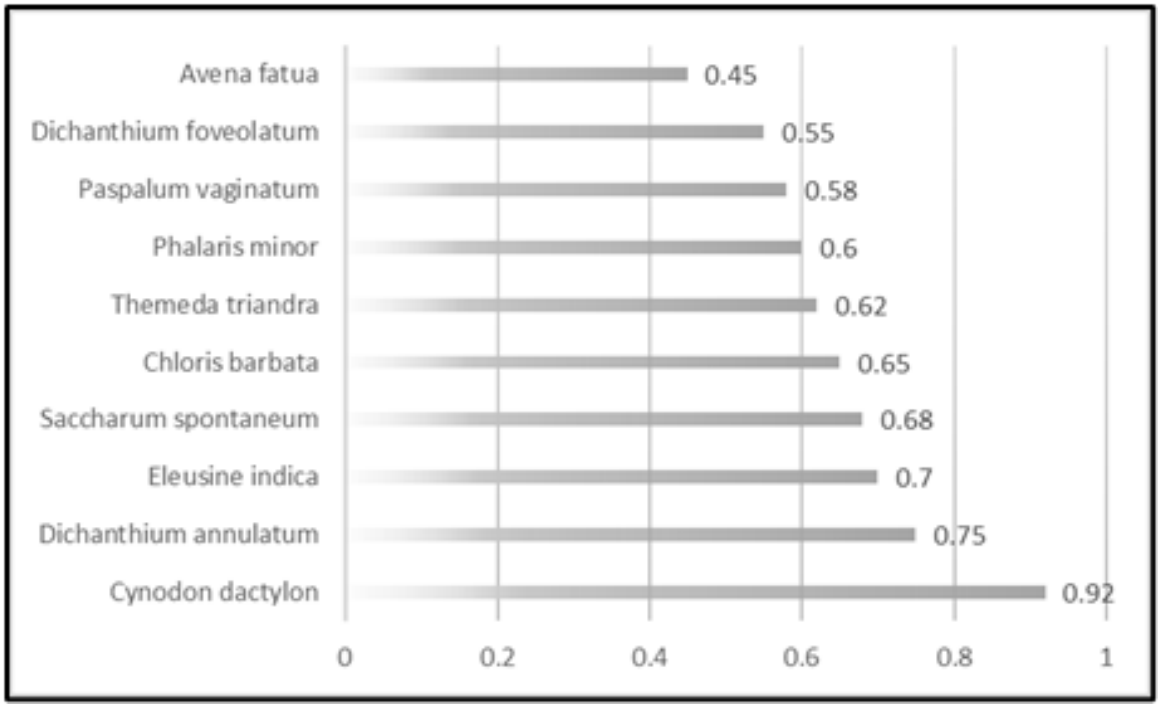


Figure 3: UV ranking of top 10 Poaceae species (n=52 informants). Cynodon dactylon highest (uv=0.92)

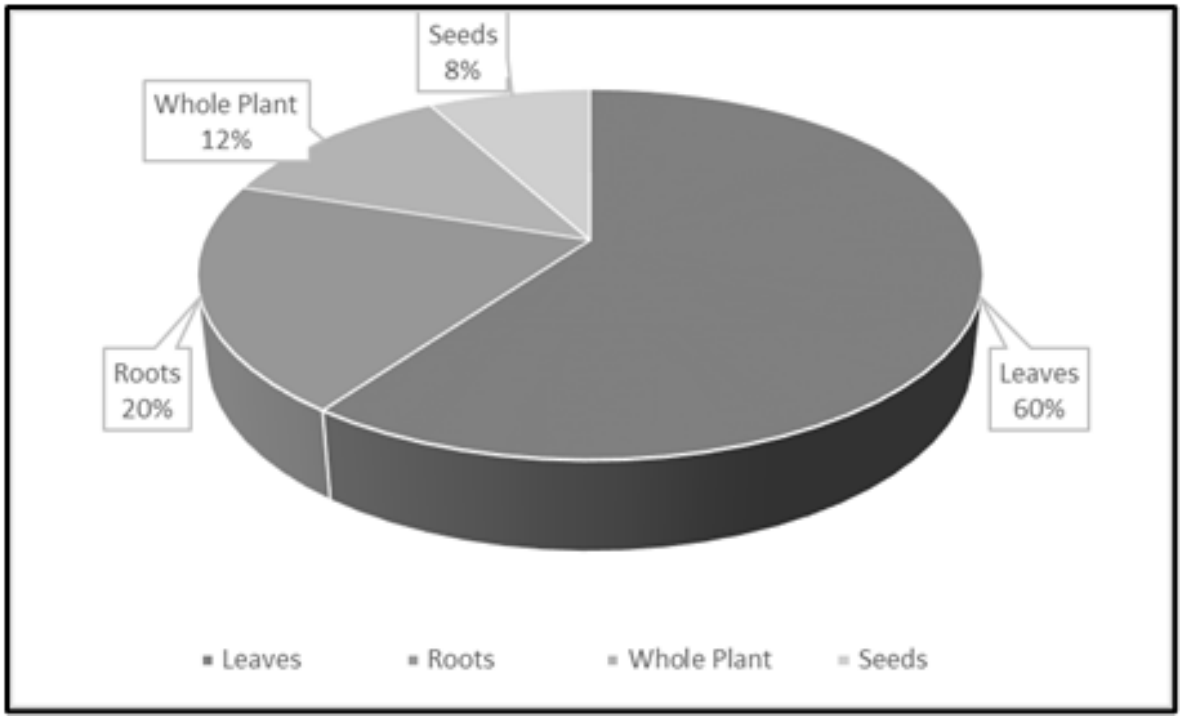


Figure 4: Plant parts used in Poaceae remedies. leaves dominate (60%) due to field accessibility.

Species	Urinary	Wounds	Digestive	Respiratory	Fever	Skin	Anti-inflam
Cynodon dactylon	48	25	0	0	0	15	0
Chloris barbata	5	34	0	0	0	0	0
Dichanthium annulatum	0	0	39	20	0	0	0
Eleusine indica	36	0	0	0	0	0	0
Saccharum spontaneum	35	0	0	15	0	0	0
Phalaris minor	31	0	0	0	0	0	0
Dichanthium foveolatum	0	0	29	0	0	0	0
Themeda triandra	0	0	0	0	32	0	0
Paspalum vaginatum	0	0	0	0	0	0	22
Avena fatua	0	0	0	0	0	23	0

Figure 5: Heatmap of use patterns across 10 Poaceae species. Darker shades show higher consensus; Cynodon dactylon most versatile.

Table 1: Floristic Diversity of Poaceae in Shahdol (M.P.)

S.No	Botanical Name	Life Form	Flowering Period	Status
1	*Agrostis capillaris*	Annual	Nov–Apr	Common
2	*Alopecurus myosuroides*	Annual	Jun–Aug	Common
3	*Apluda mutica*	Perennial	Aug–Dec	Common
4	*Aristida adscensionis*	Annual	Mar–Dec	Common
5	*Avena fatua*	Winter annual	Jan–Jun	Common
6	*Bothriochloa insculpta*	Perennial	Sep–Jan	Common
7	*Briza minor*	Annual	Sep–Dec	Common
8	*Bromus sterilis*	Annual/Biennial	Dec–May	Common
9	*Cenchrus clandestinus*	Perennial	Year-round	Common
10	*Cenchrus pedicellatus*	Annual	Sep–Dec	Common
11	*Chloris barbata*	Annual	Jul–Apr	Common
12	*Chloris virgata*	Annual	Aug–Dec	Common
13	*Chrysopogon fulvus*	Perennial	Sep–Dec	Common
14	*Coix lacryma-jobi*	Annual/Perennial	Jul–Nov	Common
15	*Cynodon dactylon*	Perennial	Year-round	Common
16	*Dactyloctenium aegyptium*	Annual	Jul–Nov	Common
17	*Dichanthium annulatum*	Perennial	Jun–Mar	Common
18	*Dichanthium aristatum*	Perennial	Aug–Nov	Common
19	*Dichanthium foveolatum*	Perennial	Sep–Dec	Common
20	*Digitaria bicornis*	Annual	Mar–Sep	Common
21	*Digitaria ciliaris*	Annual	Jul–Nov	Common
22	*Digitaria sanguinalis*	Annual	Oct–Nov	Common
23	*Dinebra retroflexa*	Annual	Jul–Apr	Common
24	*Echinochloa colonum*	Annual	Jul–Oct	Common
25	*Echinochloa crus-galli*	Annual	Aug–Nov	Common
26	*Eleusine indica*	Perennial	Jun–Oct	Common
27	*Eragrostis atrovirens*	Annual	Year-round	Common
28	*Eragrostis pilosa*	Annual	Jul–Oct	Common
29	*Eragrostis superba*	Perennial	Jun–Sep	Common
30	*Eragrostis tenuifolia*	Annual	Sep–Oct	Common
31	*Eragrostis unioloides*	Annual	Year-round	Common
32	*Eragrostis tenella*	Annual/Perennial	Jul–Feb	Common
33	*Festuca myuros*	Annual	Apr–Jul	Common
34	*Hackelochloa granularis*	Annual	Jul–Jan	Common
35	*Hemarthria altissima*	Perennial	Jul–Dec	Common
36	*Holcus lanatus*	Annual	May–Aug	Rare
37	*Hymenachne amplexicaulis*	Perennial	Jul–Mar	Common
38	*Leersia oryzoides*	Perennial	Aug–Oct	Common
39	*Melanocenchris abyssinica*	Annual	Aug–Dec	Common
40	*Oplismenus burmannii*	Annual	Jul–Feb	Common
41	*Oplismenus compositus*	Perennial	Year-round	Common
42	*Oplismenus undulatifolius*	Perennial	Jul–Nov	Common
43	*Oryza rufipogon*	Perennial	Sep–Mar	Endangered
44	*Panicum coloratum*	Perennial	May–Dec	Common
45	*Panicum virgatum*	Perennial	Jul–Nov	Rare
46	*Paspalum dilatatum*	Perennial	Jun–Aug	Common
47	*Paspalum distichum*	Perennial	Jun–Feb	Common
48	*Paspalum scrobiculatum*	Annual	Aug–Nov	Common
49	*Paspalum vaginatum*	Perennial	Apr–Aug	Common

50	*Phalaris minor*	Annual	Feb–Apr	Common
51	*Poa trivialis*	Perennial	Oct–Mar	Common
52	*Polypogon monspeliensis*	Annual	Jan–Jun	Common
53	*Polypogon viridis*	Perennial	Feb–Apr	Common
54	*Rottboellia cochinchinensis*	Annual	Sep–Dec	Common
55	*Saccharum spontaneum*	Perennial	Sep–Nov	Common
56	*Setaria parviflora*	Perennial	Oct–Dec	Common
57	*Setaria pumila*	Annual	Aug–Dec	Common
58	*Setaria verticillata*	Annual	Jul–Oct	Common
59	*Setaria viridis*	Annual	Jun–Oct	Common
60	*Sporobolus pyramidalis*	Perennial	Nov–May	Common
61	*Themeda triandra*	Perennial	Sep–Feb	Common
62	*Themeda quadrivalvis*	Perennial	Sep–Jan	Common
63	*Urochloa deflexa*	Annual	Jul–Dec	Common
64	*Urochloa panicoides*	Annual	Jul–Nov	Common
65	*Urochloa ramosa*	Annual	Jul–Oct	Common
66	*Diplachne fusca*	Annual/Short perennial	Mar–Nov	Common
67	*Perotis indica*	Annual	Aug–Oct	Common

This work is the first to conduct a systematic quantitative ethnobotanical evaluation of 67 *Poaceae* weed species that have been thoroughly recorded throughout the various agricultural habitats in Shahdol District, including roadside verges, wheat fields, rice fallows, and wasteland edges. Despite being universally disregarded as agricultural pests, these grasses have significant ethnomedicinal value; among Gond and Baiga groups, 10 species (15% of the total flora) account for 75% of medicinal citations. With 88 citations covering urine problems (48), wound healing (25), and skin ailments (15), *Cynodon dactylon* had the greatest Use Value (UV=0.92) and Fidelity Level (FL=94% urinary) among the 67-taxa flora. *Eleusine indica* was specialized in urolithiasis (UV=0.70, 36 citations), *Chloris barbata* was excellent in wounds (UV=0.65, 34 citations), and *Dichanthium annulatum* came next (UV=0.75, 59 citations spanning digestive/respiratory illnesses). From a broad floristic baseline, these top ten species show selective cultural filtering. The Informant

Consensus Factor (ICF), which was computed as (120-8)/(120-1)=0.85 from 52 informants, peaked at 0.85 for urine diseases (Nur=120 use-reports across Nt=8/67 species). Digestive problems scored 0.78 (Nur=89, Nt=5) while wound healing obtained ICF=0.82 (Nur=95, Nt=6), demonstrating organized therapeutic knowledge. Strong potential for pharmacological validation is indicated by ICF>0.80 readings, which surpass common Indian ethnobotanical standards.The inventory of 67 species finds annuals dominate (62%) reflecting Shahdol's monsoon regime (1211.6 mm rainfall), whereas perennials (38%, 26 species) provide 78% medicinal citations owing to their year-round availability over 5671 km² clay-loam agroecosystem. The three most ecologically prominent perennials, *Cynodon, Saccharum spontaneum*, and *Dichanthium annulatum*, garnered a total of 197 citations (57%). Leaves accounted for 60% of citations (156/260), with optimum perpetual regeneration recorded in 23/26 perennial species. Roots (20%) outperformed *Saccharum spontaneum* and *Themeda triandra*, whereas decoctions (44%) increased extraction of Poaceae flavonoids, saponins, and glycosides. Seeds (8%), specializing in *Phalaris minor* urinary treatments.

Heatmap patterns corroborate therapeutic specialization clusters from a baseline of 67 species: urinary specialists (*Cynodon 48, Eleusine 36 citations*), wound specialists (*Chloris barbata* 34), and digestive/respiratory specialists (*Dichanthium annulatum* 39+20). *Cynodon dactylon* is remarkable in that it covers three categories, but the remaining 57 species (85%) have low therapeutic value despite their abundance, supporting the availability theory. Unlike forest-centric Indian ethnobotany, which focuses on trees and plants, this work describes the

pharmacopeia of Poaceae weeds throughout a thorough 67-taxa inventory. *Cynodon dactylon* confirms Ayurvedic diuretic/styptic character, whilst *Eleusine indica* appears as a unique anti-urolithiatic candidate worthy of phytochemical inquiry.

From 67 species of flora, ten priority taxa require:

(1) Screening for phytochemicals *(Cynodon* diuretic substances),

(2) Sustainable root harvesting procedures (*Saccharum*), and

(3) Green manure incorporation. 57 non-medicinal species confirm the low conservation priority.

Conclusion:

This study demonstrates that 67 Poaceae weed species have an important ethnomedicinal function in Shahdol District, with ten main species accounting for 75% of traditional medicines for tribal populations. Cynodon dactylon stands out for its widespread use (UV=0.92) and high level of agreement among healers (ICF=0.85 for urinary disorders), suggesting that traditional knowledge is credible and warrants further investigation. Perennials are especially helpful because to their year-round availability, while leaves (60% consumption) promote sustainable harvesting techniques. Heatmap patterns clearly demonstrate specific usage (urinary remedies, wound treatment, digestive assistance) across the species collection.

Future research might look at the phytochemical qualities of promising grasses like Cynodon and Eleusine indica, as well as encourage the use of perennial Poaceae as green manures. Only ten of the 67 inventoried species have medical promise, with the majority posing no conservation concern. These findings emphasize the untapped potential of Poaceae weeds in tribal

healthcare and provide repeatable methodology (UV/ICF/FL analysis) for comparable investigations in monsoonal farming locations.

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