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Research Article

Weed Flora and their Ethnobotanical Importance at Daffodil International University Campus, Bangladesh

Rifat Hasan Rabbi

Department of Agricultural Science, Daffodil International University, Birulia, Dhaka-1216, Bangladesh.

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Correspondence
Rifat Hasan Rabbi
✉: rabbi2301101012@diu.edu.bd

ABSTRACT

This study documented the weed flora and their ethnobotanical importance within the Daffodil International University (DIU) campus, Bangladesh. Field surveys were conducted across seven habitat categories between July 2024 and February 2025. A total of 55 species belonging to 50 genera and 16 families were recorded, with Asteraceae (18 spp.) and Poaceae (14 spp.) as the most represented families. More than half of the flora were perennials (54.5%), while annuals accounted for 38.2%. Several species were cosmopolitan and widely distributed, including *Cyperus rotundus*, *Cynodon dactylon*, and *Ipomoea aquatica*. Ethnobotanical review revealed that most of the species have recognized uses. Prominent examples include *Eclipta alba* (hair growth and wound healing), *Ageratum conyzoides* (skin disorder), *Cyanthillium cinereum* (smoking cessation aid), *Panicum repens* (fodder) and *Ipomoea aquatica* (nutritious leafy vegetable). The findings underscore the ecological resilience and cultural relevance of weeds in managed landscapes.

Introduction

Weeds are often described as unwanted plants, competing with crops and reducing yields. Many weeds are also valuable parts of our ecosystems and cultural heritage. Across the world, people have long used common weeds as food, medicine, fodder, or even in rituals. In this sense, weeds are not just agricultural nuisances but also reservoirs of biodiversity and traditional knowledge. Bangladesh, with its rich agro-ecological landscapes, harbors a remarkable diversity of weeds. More than 350 species have been documented across fields, wetlands, roadsides, and homesteads. Families such as Poaceae, Asteraceae, Cyperaceae, and Amaranthaceae are especially well represented. Weeds like *Ageratum conyzoides*, *Eclipta alba*, and *Ipomoea aquatica* are not only abundant but also widely used as vegetables, herbal remedies, or livestock feed (Mia et al., 2020; A.K.M. Azad-Ud-Doula Prodhan, 2011; Islam et al., 2017).

University campuses provide an ideal setting for studying weeds. They combine cultivated plots, landscaped gardens, wetlands, roadsides, and fallow areas within a relatively small space. This habitat mosaic creates conditions for high weed diversity, while the daily interactions of gardeners, students, and local communities with these plants often reveal fascinating ethnobotanical knowledge (Aronson et al., 2017). Daffodil International University (DIU), situated in Daffodil Smart City, Savar, Dhaka, is an urban campus with diverse managed and semi-natural habitats. Despite this, no systematic effort has been made to document the weed flora or their cultural uses here. Understanding this flora is not only important for sustainable campus management but also for preserving local knowledge and highlighting the positive roles weeds can play. The specific objectives of this study are twofold: (1) to systematically identify and document the weed flora present across diverse habitat types within the DIU campus, and (2) to record and validate the ethnobotanical significance of documented species through literature review and community knowledge compilation.

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Materials and Methods

Study Area

The survey was conducted at the Daffodil International University (DIU) campus, Daffodil Smart City, Birulia, Savar, Dhaka-1216, Bangladesh. The campus occupies over 100 acres of mixed educational, residential, landscaped, and semi-natural land within the lower Ganges delta climatic regime, characterized by a humid tropical monsoon. Campus infrastructure includes agricultural fields labs, low-lying wet spots, ornamental gardens, lawns, roadside verges, drainage channels, and pond/lake margins.

Survey Period

Field sampling was carried out from July to November 2024, capturing late Kharif-2 into early Rabi, with supplemental opportunistic records through February 2025 to include species flowering in the cool dry season.

Survey Design and Data Collection

The campus was stratified into seven distinct habitat categories to ensure comprehensive coverage of weed diversity: (i) Agricultural teaching plots (e.g., vegetable and field crop rotations, field labs) (ii) Orchard/perennial blocks (e.g., Litchi Bagan, fruit gardens) (iii) Lawns/turf and sports grounds (iv) Ornamental beds and hedgerows (v) Roadsides (vi) Drainage channels (vii) Pond and wetland margins (e.g., Pukurpar, Lake)

Specimen Collection and Identification

Representative specimens were collected. Field notes included Bangla names supplied by gardeners and local laborers. The collected fresh and dried specimens were identified in the field and by comparing with herbarium specimens and published literature.

Ethno-botanical Data Collection

Ethno-botanical information, including ethno-medicinal and other traditional uses of the identified species, was compiled through an extensive review of published literature (Khan et al., 2013; Gutiérrez et al., 2014; Mia et al., 2020; Khatun et al., 2019; Santosh Kumar et al., 2019; Dansi et al., 2008). The “Encyclopedia of Flora and Fauna of Bangladesh” (Z. U. Ahmed et al., 2008) and other taxonomic references were primarily consulted to validate the reported uses.

Results

A total of 55 weed species representing 50 genera in 16 families were documented across the DIU campus during the survey period (Table 1). Family representation was uneven: Asteraceae was the most species-rich family (18 spp.), followed by Poaceae (14 spp.) mentioned in Table 1. The remaining 14 families each contributed one to three species. A high proportion of genera (46 of 50; 92%) were monotypic, a pattern similar to that reported for Asteraceae weeds at BAU where 19 of 21 genera were represented by single species (Mia et al., 2020). Several species were widely distributed and frequently encountered across multiple habitat categories. The sedge *Cyperus rotundus* (Mutha) and the turf-forming grass *Cynodon dactylon* (Durba ghash) occurred in nearly all upland habitats, including cropped plots, lawns and roadsides. Aquatic to semi-aquatic zones were dominated by *Ipomoea aquatica* (Kalmi lata), *Colocasia esculenta* (Pani kachu/Kochu) and patches of *Alternanthera philoxeroides* (Malancha). Ruderal annuals such as *Ageratum conyzoides* (Fulkuri), *Eclipta alba* (Keshraj), *Synedrella nodiflora*, and *Cyanthillium cinereum* (Shiyalmoti) were abundant in disturbed soils near irrigation channels and vegetable beds. The low, creeping *Axonopus compressus* and *Callisia repens* provided dense ground cover in shaded lawn margins. Of the recorded flora, 21 species (38.2%) were annuals, 30 species (54.5%) perennials and 4 species (7.3%) are regionally variable. Grasses and sedges together comprised 15 species (27.3% of total), broad-leaf herbs 33 species (60%), vines/creepers 5 species (9.1%), and one fern (*Nephrolepis falcata*) plus two aquatic macrophytes (*Pistia stratiotes*, *Enhydra fluctuans*) rounded out the flora. Most Kharif annual grasses (*Setaria verticillata*, *Echinochloa colona*, *Dactyloctenium aegyptium*, *Eleusine indica*) initiated flowering from July onwards with seed maturation by September–October, coinciding with the monsoon production season. Post-monsoon flowering (November–February) was characteristic of several Asteraceae weeds including *Ageratum conyzoides*, *Tridax procumbens*, and *Cyanthillium cinereum* (Mia et al., 2020). Perennial clonal spreaders (*Cyperus rotundus*, *Panicum repens*, *Cynodon dactylon*) produced viable propagules over extended periods, with peak seed head expression in late monsoon but vegetative spread continuing through the dry season in irrigated sites. Selected perennials (*Eclipta alba*, *Ipomoea aquatica*) flowered intermittently year-round wherever moisture persisted. Seed propagation was recorded for 52 species, but 16 species also spread vigorously through vegetative means (rhizomes, tubers, stolons, corms, stem fragments). Notable examples include *Cyperus rotundus* (tubers/rhizomes), *Cyperus esculentus* (tubers), *Panicum repens* (rhizomes), *Cynodon dactylon* (stolons & rhizomes), *Alternanthera philoxeroides* (fragmenting stems), *Callisia repens* (stem fragments), and *Typhonium blumei* (corms). Vegetative reproduction

contributes to persistence under mowing and hand weeding and complicates eradication. Interviewees recognized uses for 31 of the 55 species; literature validation supported most of the species with documented medicinal applications and 14 species used as vegetables/salad greens (Table 2). Most highlighted are *Eclipta alba* (Keshraj/Kalokeshi) leaves used topically and in oils to promote hair growth; decoctions taken for fever and liver complaints (Jahan et al., 2014; Susantha Priyadarshani Molligoda et al., 2023; Ahmed et al., 2008; Timalsina & Devkota, 2021). *Ageratum conyzoides* leaf sap applied to cuts and skin infections; reported antimicrobial and wound-healing activity (Baral et al., 2022; Ahmed et al., 2008; Chabi-Sika et al., 2023). *Cyanthillium cinereum* aerial parts brewed as tea used in smoking cessation programs; also employed for fever and skin ailments in folk practice (Roy et al., 2022; Thongkhao et al., 2020). *Mimosa pudica* crushed plant poulticed on wounds and boils; used for diarrhea and inflammation (Adurosakin et al., 2023; Muhammad et al., 2016). *Ipomoea aquatica* (Kalmi shak) widely eaten as a leafy vegetable rich in micronutrients and antioxidants (Nagendra P et al., 2007; Saikia et al., 2023). *Colocasia esculenta* corms and leaves consumed; ethnomedicinal roles in managing inflammation and gastrointestinal disorders (Jain et al., 2023; Ribeiro Pereira et al., 2020; Mitharwal et al., 2022). *Tridax procumbens* leaf juice applied to treat bronchial catarrh, diarrhea, dysentery and liver diseases.; traditional hair tonic (Andriana et al., 2019; Ingole et al., 2022). The complete species account, including local names, phenology, reproductive mode, habitat notes, and validated uses, is presented in Table 1. The ethno-botanical importance and uses of these weeds presented in Table 2.

Table 1. Weed species recorded on the DIU campus with Botanical name, Bangla name, English name, family, flowering period, and habitat.

Season codes: K1=Kharif 1 (mid Mar–mid Jul); K2=Kharif 2 (mid Jul–mid Nov); R=Rabi (mid Nov–mid Mar); Yr=flowering observed year-round where moisture persists. Month ranges approximate campus observations, supplemented by regional literature.

Table 1: Weed species recorded from the DIU campus.

Sl. No.	Botanical name	Bangla name	English name	Family	Flowering period	Typical habitat
1	*Alternanthera ficoidea*	Sochishaak	Joyweed	Amaranthaceae	Yr	Ornamental beds, lawns
2	*Alternanthera philoxeroides*	Malancha	Alligator weed	Amaranthaceae	Jun-Sep	Wet ditches, pond margins
3	*Colocasia esculenta*	Kochu	Elephant-ear	Araceae	Aug-Nov	Moist areas, wet ditches, pond edges
4	*Pistia stratiotes*	Topapana	Water lettuce	Araceae	Feb-Sep	Pond surfaces
5	*Typhonium blumei*	Ghorankul	Not Known	Araceae	Jul–Sep	Moist shaded beds
6	*Ageratum conyzoides*	Fulkuri	Billy Goat Weed	Asteraceae	Nov–Feb	Disturbed beds, roadsides, open field
7	*Blumea lacera*	Barokukshim	Lettuce-Leaf Blumea	Asteraceae	Yr	Waste moist
8	*Chromolaena odorata*	Bara shialmuti	Paraffin weed	Asteraceae	Nov–Feb	Roadsides, bushy areas
9	*Cyanthillium cinereum*	Shiyalmoti	Little ironweed	Asteraceae	Nov–Feb	Dry disturbed soils
10	*Eclipta alba*	Keshraj	False daisy	Asteraceae	Yr	Damp wastelands, cultivated fields, roadsides and drains
11	*Emilia sonchifolia*	Mechitra	Lilac Tassel flower	Asteraceae	Yr	Open moist soils
12	*Enhydra fluctuans*	Helencha	Water cress	Asteraceae	Jan–Feb	Shallow wetlands
13	*Galinsoga parviflora*	Bonmokhna	Gallant soldier	Asteraceae	Aug–Dec	Crop beds
14	*Gnaphalium luteoalbum*	Bara kamra	Weedy Cudweed	Asteraceae	Aug–Feb	Moist fallow
15	*Mikania cordata*	Assam-lata	Heartleaf hempvine	Asteraceae	Oct–Feb	Hedges, moist thickets
16	*Praxelis clematidea*	Biral shungi	Praxelis	Asteraceae	Aug–Dec	Disturbed sites
17	*Senecio vulgaris*	Tasneirinha	Common Groundsel	Asteraceae	Dec–Feb	Crop beds
18	*Sphagneticola trilobata*	Singapore Daisy	Wedelia	Asteraceae	Yr	Lawns, wet edges
19	*Spilanthes calva*	Holud nakful	Toothache plant	Asteraceae	Yr	Damp beds, waste and fallow lands, roadsides
20	*Synedrella nodiflora*	Surya-kanya	Nodeweed	Asteraceae	Yr	Disturbed soils
21	*Tridax procumbens*	Tridhara	Coat buttons	Asteraceae	Apr–Jul	Dry soil, roadsides
22	*Xanthium indicum*	Ghagra	Rough cocklebur	Asteraceae	Yr	Shady moist, cultivated lands
23	*Youngia japonica*	Not Known	False hawksbeard	Asteraceae	Aug–Feb	Moist open, fallow lands
24	*Heliotropium indicum*	Hatishur	Indian Heliotrope	Boraginaceae	Ep-Apr	Disturbed moist soils,

Sl. No.	Botanical name	Bangla name	English name	Family	Flowering period	Typical habitat
						roadsides
25	*Callisia repens*	Kandali	Turtle Vine	Commelinaceae	Yr	Shaded lawns, pots escapes
26	*Ipomoea aquatica*	Kalmi lata	Water spinach	Convolvulaceae	Yr	Pond edges, ditches
27	*Coccinia grandis*	Telakucha	Ivy gourd	Cucurbitaceae	Jul–Nov	Fences, hedges
28	*Melothria pendula*	Bon Kundori	Creeping cucumber	Cucurbitaceae	Jul–Nov	Hedges, crop borders
29	*Cyperus esculentus*	Halda mutha	Yellow nutsedge	Cyperaceae	Apr-Oct	Disturbed fields, roadsides, lawns, and croplands
30	*Cyperus mindorensis*	Not Known	White Water Sedge	Cyperaceae	Jul–Oct	Moist low fields
31	*Cyperus rotundus*	Mutha	Nutgrass	Cyperaceae	Yr	All uplands
32	*Acalypha indica*	Muktajhuri	Indian copperleaf	Euphorbiaceae	Jun–Dec	Moist shaded soils
33	*Croton sparsiflorus*	Bon Tulsi	Croton	Euphorbiaceae	Jul–Oct	Dry disturbed plots
34	*Mimosa pudica*	Lajjabati	Sensitive plant	Fabaceae	Sep-Jan	Lawns, roadside, light shade
35	*Senna obtusifolia*	Kalke	Sicklepod	Fabaceae	Aug–Nov	Crop margins, wastelands
36	*Senna sophera*	Kalkasunda	Pepper leaved senna	Fabaceae	Jul-Dec	Waste fallow lands, roadsides
37	*Origanum majorana*	Maruba	Sweet marjoram	Lamiaceae	Dec–Mar	Herb garden escapes
38	*Nephrolepis falcata*		Fishtail Fern	Nephrolepidaceae	Yr	Shaded moist walls
39	*Phyllanthus urinaria*	Bhui amla	Chamber bitter	Phyllanthaceae	Jul–Oct	Crop beds, pots
40	*Axonopus compressus*	Carpet grass		Poaceae	Yr	Lawns, shaded verges
41	*Chrysopogon aciculatus*	Prem kanta	Love grass	Poaceae	Yr	Compact soils, roadsides
42	*Cymbopogon citratus*	Lemon grass	Lemon grass	Poaceae	Yr	Herb plots, borders
43	*Cynodon dactylon*	Durba ghash	Bermuda grass	Poaceae	Yr	Cultivated lands, Lawns, sports fields
44	*Dactyloctenium aegyptium*	Kak paya	Crowfoot grass	Poaceae	Yr	Sandy disturbed soils
45	*Digitaria sanguinalis*	Anguli	Hairy crabgrass	Poaceae	Aug–Oct	Dry beds, wastelands
46	*Echinochloa colona*	Choto shama	Jungle rice	Poaceae	May-Sep	Paddy fields, wastelands, fallow lands
47	*Echinochloa crus-galli*	Boro shama	Barnyard grass	Poaceae	Apr–Oct	Paddy edges, waste lands
48	*Eleusine indica*	Chapra	Indian goosegrass	Poaceae	Jun–Aug	Dry and wetlands, vegetable beds, wastelands and lowlands
49	*Eragrostis amabilis*	Shada fulka	Japanese lovegrass	Poaceae	Aug–Oct	Dry lawns, beds
50	*Imperata cylindrica*	Ulu ghash	Cogon grass	Poaceae	Yr	Open tree area and roadside areas
51	*Leptochloa chinensis*	Fulka ghash	Chinese sprangletop	Poaceae	Jul–Oct	Moist crop edges
52	*Panicum repens L.*	Dhanighash	Torpedo grass	Poaceae	Jun–Sep	Roadsides, rice fields margin of ditches
53	*Setaria verticillata*	Chitka ghash	Bristle Grass	Poaceae	Jul–Oct	Crop beds, disturbed soils
54	*Oldenlandia corymbosa*	Khetpapri	Diamond flower	Rubiaceae	Sep-Dec	crop fields & irrigation channel, fallow lands
55	*Pouzolzia zeylanica*	Kullaruki	Mist Vine	Urticaceae	K1–K2	Shaded moist beds, hedgerows

Table 2: Ethno-botanical uses of weed species recorded from the Daffodil International University campus.

Sl. No.	Botanical name	Ethno-botanical Uses	References
1	*Alternanthera ficoidea*	Medicinal – used as diuretic, anti-pyretic, antiseptic, anti-inflammatory and anti-diarrheal agent etc.	(Pandey et al., 2019)
2	*Alternanthera philoxeroides*	Medicinal; Vegetables – leaves of this plant are consumed as a vegetable.	(Nahar et al., 2022)
3	*Colocasia esculenta*	Vegetable – widely cultivated plant for consumption of both leaves and tubers; Medicinal – used for the treatment of various ailments such as asthma, arthritis, diarrhea, internal hemorrhage, neurological disorders, and skin disorders.	(Pawar et al., 2018; Sudhakar et al., 2020)
4	*Pistia stratiotes*	Medicinal uses – used to treatment of skin problems, eczema, leprosy, ulcers, piles, stomach disorder, throat and mouth inflammation.	(Tulika & Mala, 2014; Rokaya et al., 2023)
5	*Typhonium blumei*	Vegetable; Medicinal – used to treat cancer and inflammatory diseases.	(Korinek et al., 2016)
6	*Ageratum conyzoides*	Medicinal – used to cure various ailments that include leprosy, skin disorders, sleeping sickness, rheumatism, headaches, dyspnea, toothache, and pneumonia.	(Yadav et al., 2019; Z. U. Ahmed et al., 2008)
7	*Blumea lacera*	Essential oil extraction; Medicinal – leaves used to treat most kinds of colds; repellent of flies and other insects.	(Sinha et al., 2024; F. A. Ahmed et al.,

Sl. No.	Botanical name	Ethno-botanical Uses	References
			2016)
8	*Chromolaena odorata*	Medicinal – used to treat wound, burn, diarrhea, coughs, colds and toothache, skin infection as well as to treat stomach problems.	(Sirinthipaporn & Jiraungkoorskul, 2017)
9	*Cyanthillium cinereum*	Medicinal – used as a commercial drug, smoking cessation drug and relief for cold. Leaves act as an abortifacient and blood purifier and have diuretic, antiviral, analgesic, antipyretic, and anti-inflammatory properties.	(Roy et al., 2022)
10	*Eclipta alba*	Medicinal – wound healing, treatment of gastrointestinal disorders, skin disorder and hair growth.	(Jahan et al., 2014)
11	*Emilia sonchifolia*	Traditional vegetable salads; Medicinal – used to treats various conditions such as diarrhea, sore throat, night blindness, rashes, fever, measles, earache, eye inflammation, ophthalmia, asthma, malaria, stomach tumors, chest pain, liver diseases, cuts, and wounds.	(Hussain et al., 2024; Banni & Jayaraj, 2024)
12	*Enhydra fluctuans*	Vegetable; Medicinal – pharmacological role against inflammation, cancer, diarrhea, microbial infection, diabetes, etc.	(Barua et al., 2021)
13	*Galinsoga parviflora*	Used as a salad green or cooked as a vegetable; slightly bitter taste. Medicinal – used as a medicinal plant for its diuretic, anti-inflammatory, and analgesic properties. It has been used to treat ailments such as urinary tract infections, rheumatism, and digestive disorders.	(Ripanda et al., 2023)
14	*Gnaphalium luteoalbum*	Used as wild vegetables; Medicinal – used in traditional medicine as an astringent, diuretic, and wound healing, as well as for treating inflammation, fever, and gout.	(Zheng et al., 2013)
15	*Mikania cordata*	Vegetable; extract essential oil and chloroform; suppressing weeds; Medicinal – therapeutic option against fever, inflammations as well as painful conditions.	(Siddiqui et al., 2018)
16	*Praxelis clematidea*	Cultivated as an ornamental plant in gardens; Medicinal – used in traditional medicine to treat fever and colds.	
17	*Senecio vulgaris*	Young leaves have been used in many areas as a salad; Medicinal – used as a poultice and useful in treating sickness of the stomach.	(Loizzo et al., 2004)
18	*Sphagneticola trilobata*	Used as an ornamental ground cover; Medicinal – it has antioxidant, anti-inflammatory, antimicrobial, and wound-healing properties.	(Ali et al., 2024)
19	*Spilanthes calva*	Medicinal – used traditionally to treat inflammation, skin diseases, cold and flu, gum infections, inflammation, rheumatism, toothache, paralysis of the tongue, and dysentery etc.	(Debnath et al., 2011)
20	*Synedrella nodiflora*	Medicinal – it has antibacterial, antimicrobial activity.	
21	*Tridax procumbens*	Medicinal – including antioxidant, antibacterial, anti-inflammatory, antimicrobial, vasorelaxant, antileishmanial, antianemic, immunomodulatory, hepatoprotective and mosquitocidal activities.	(Wagh, 2024)
22	*Xanthium indicum*	Food; Medicinal – to treating conditions like malaria, diabetes, arthritis, and skin ailments; as well as exhibiting antibacterial, antifungal, and anti-inflammatory properties.	(Rohil & Kumar, 2020)
23	*Youngia japonica*	Vegetable; Medicinal – used in traditional medicine for treating fevers, coughs, and diarrhea, and being explored for its potential anticancer and antiviral properties.	(Ooi et al., 2004)
24	*Heliotropium indicum*	Medicinal – used to treat skin diseases, inflammation, infections, and wounds, with its juice applied to skin ulcers, boils, and conjunctivitis.	(Wani et al., 2018)
25	*Callisia repens*	Fast-growing houseplant and an edible food source for certain pets, like tortoises and bearded dragons; Medicinal – used in traditional medicine to treat skin irritations and inflammation, and has potential antioxidant, antibacterial, and antifungal properties.	(Sengthong et al., 2024)
26	*Ipomoea aquatica*	Vegetable - young shoots and leaves are widely consumed; Medicinal – used in traditional medicine for ailments such as diabetes, fevers, coughs, liver complaints, and as an antidote for poisoning.	(Manandhar & Manandhar, 2002)
27	*Coccinia grandis*	Vegetable; Medicinal – used in traditional medicine to treat various ailments like diabetes, skin conditions, digestive issues, and respiratory problems.	(Hossain et al., 2024)
28	*Melothria pendula*	Fodder; Food - fruits and leaves being edible; used in cooking or as a salad ingredient.	(Husaini et al., 2024)
29	*Cyperus esculentus*	Fodder; Food - tubers can be eaten raw, roasted, dried, or baked. It has also medicinal uses.	(Chevallier, 1996; Bezerra et al., 2023)
30	*Cyperus mindorensis*	Medicinal – rhizomes are used to treat fever, diarrhea, coughs, and colds, while the entire plant is used to treat sprains and bruises. It has also antivenom properties.	(Sultana et al., 2018)
31	*Cyperus rotundus*	Serious pest in cultivated lands; Medicinal – used to treat digestive issues, fever, diarrhea, diabetes, inflammation, malaria, and stomach, skin disorders, and menstrual problems; oil can be applied to inhibit hair growth.	(Peerzada et al., 2015)
32	*Acalypha indica*	Medicinal – treating respiratory issues like asthma and bronchitis, gastrointestinal problems such as diarrhea and intestinal worms, and skin conditions like eczema and wounds.	(Dr. S. Senthilkumar & Dr. C. Kiruba Rani, 2024)
33	*Croton sparsiflorus*	Medicinal - treatment for high blood pressure, skin diseases, cuts, and wounds.	

Sl. No.	Botanical name	Ethno-botanical Uses	References
34	*Mimosa pudica*	Medicinal – used to treat dysentery, hepatitis, mouth ulcer, sore nipples, scurvy, disease of kidney, liver, spleen bladder, insulin secretion, blood purifier, fever.	(Muhammad et al., 2016)
35	*Senna obtusifolia*	Food; Fodder; Medicinal – used in traditional medicine for various ailments, including digestive issues, eye problems, and pain.	(Mariod et al., 2017)
36	*Senna sophera*	Vegetable – young leaves are eaten, young pods are edible; Medicinal – used in traditional medicine for its antidiabetic, anti-inflammatory, and wound-healing properties, as well as for treating respiratory issues, skin diseases, and gastrointestinal problems like constipation and worms.	(Deshpande & Naik, 2016)
37	*Origanum majorana*	Medicinal – used to treat diabetes, stomach pain, gastrointestinal discomfort like bloating and colic, reduce stress and insomnia, and alleviate symptoms of common colds and headaches.	(Bouyahya et al., 2021)
38	*Nephrolepis falcata*	Ornamental plant, act as a natural air purifier, improving indoor air quality.	
39	*Phyllanthus urinaria*	Medicinal – traditionally used to treat liver diseases, jaundice, and diabetes.	(Geethangili & Ding, 2018)
40	*Axonopus compressus*	Fodder; used in turf, soil binder, alternate host of *rhizoctonia solani*.	
41	*Chrysopogon aciculatus*	Lawn and ground cover grass for erosion control; Medicinal – used to treat ailments such as tonsillitis, fever, malaria, gastric and intestinal issues, and liver pain.	(Md. S. Islam et al., 2019)
42	*Cymbopogon citratus*	Food – stalk and leaves are used in various Asian cuisines to add a lemon-like flavor to soups, curries, and other dishes; Medicinal – used to treat digestive issues, pain relief, and fever; ingredient in cosmetics, perfumes, and soaps due to its essential oils; Insect repellent.	(Shah et al., 2011)
43	*Cynodon dactylon*	Lawn grass, soil binder; Fodder; Medicinal – treating digestive issues, respiratory ailments, and bleeding, as well as exhibiting anti-inflammatory, antioxidant, and antidiabetic properties.	(Ramteke et al., 2024)
44	*Dactyloctenium aegyptium*	Fodder; Lawn Grass; Medicinal – used in traditional medicine to treat a variety of ailments, such as digestive, urinary, and skin issues.	(Janbaz & Saqib, 2015)
45	*Digitaria sanguinalis*	Fodder	
46	*Echinochloa colona*	Noxious weed; Fodder	(Narayana Rao, 2021)
47	*Echinochloa crus ‑galli*	Fodder; Vegetable; Medicinal – treating carbuncles, sores, spleen trouble, cancer and wounds.	(Narayana Rao, 2021)
48	*Eleusine indica*	Fodder; Source of fiber; Medicinal – used to treat fever, hypertension, kidney problems, and skin issues.	(Al-Zubairi et al., 2011)
49	*Eragrostis amabilis*	Ornamental and lawn grass; It has also antioxidant activities.	(Mani et al., 2023)
50	*Imperata cylindrica*	Noxious weed; Medicinal properties for conditions like inflammation and digestive issues, construction and thatching materials, and as a source for ornamental plants.	(Razafindrakoto et al., 2021)
51	*Leptochloa chinensis*	Serious weed of rice; Fodder.	
52	*Panicum repens L.*	Fodder; Turf and lawn grass – used for soil stabilization, particularly on shorelines and sandy soils.	
53	*Setaria verticillata*	Fodder	
54	*Oldenlandia corymbosa*	Medicinal – used to treat conditions like jaundice, liver diseases, fever, skin infections, and digestive disorders.	(Patel et al., 2014)
55	*Pouzolzia zeylanica*	Vegetable – young shoots and leaves cooked; Medicinal – used to treat coughs, dysentery, sores, and boils.	(Manandhar & Manandhar, 2002)

Discussion

The DIU campus harbors a surprisingly rich weed flora relative to its managed footprint. The 55 species documented here approach the 64 species threshold reported in some agricultural landscapes of comparable size in Bangladesh and reflect the strong habitat heterogeneity created by mixed land uses. Similar patterns were reported from BAU, where discrete habitat mosaics (crop fields, fallow land, plots, marsh edges) supported high weed diversity within individual plant families (Sarwar & Prodhan, 2011; Mia et al., 2020; Islam et al., 2017). Maintaining structural diversity in campus landscapes thus indirectly conserves spontaneous flora and associated ecosystem services (pollinator resources, cover for beneficials, soil stabilization). Although our survey targeted all weed families, patterns observed within Asteraceae and Cyperaceae parallel those reported from BAU. A researcher recorded 26 Asteraceae weed species at BAU and emphasized their high ethno-medicinal potential (Mia et al., 2020); we recorded 18 Asteraceae species at DIU, thirteen of which overlap with the BAU list, underscoring their ubiquity in disturbed Bangladesh habitats. Another researcher reported 41 cyperaceous species at BAU (Sarwar & Prodhan, 2011), with *Cyperus rotundus* as a top agricultural weed that mirrored at DIU where *Cyperus rotundus* was among the most abundant taxa in cropped plots. Aquatic weeds described by Islam et al., (2017), notably *Ipomoea aquatica* and *Colocasia esculenta*, were also prominent in DIU's low lying Pukurpar and lake area. The

persistence of knowledge regarding medicinal and edible uses of common weeds among campus workers and adjacent villagers was notable. Informants frequently collected Kalmi lata (*Ipomoea aquatica*) and Kochu (*Colocasia esculenta*) for household consumption, reflecting their recognized food value in Bangladesh diets (Nagendra P et al., 2007; Ribeiro Pereira et al., 2020). Similarly, Keshraj (*Eclipta alba*) was cited in homemade hair oil preparations, corroborating literature that documents its trichogenic and hepatoprotective properties (Jahan et al., 2014; Susantha Priyadarshani Molligoda et al., 2023). The use of Fulkuri (*Ageratum conyzoides*) leaf poultices on fresh cuts was reported by multiple informants and aligns with documented wound healing efficacy (Baral et al., 2022). Community awareness of Shiyalmoti (*Cyanthillium cinereum*) as a "stop smoking tea" indicates penetration of public health campaigns leveraging traditional herbs (Thongkhao et al., 2020). Harnessing these uses can transform weed management from exclusively suppressive to utilization-oriented strategies: selective harvest of edible weeds before seed set, cultivation of medicinal weeds in dedicated plots to reduce spread in crops, and community exchanges of ethnobotanical knowledge. Such approaches echo suggestions from earlier Bangladesh weed policy analyses that encourage the use of short lived Kharif/Rabi weeds as resources. Phenological profiling is a low-cost decision support tool for weed suppression below economic thresholds (Mia et al., 2020; Sarwar & Prodhan, 2011). At DIU, timing hand weeding or mowing just prior to seed shed for dominant annual grasses (late August–September) and winter flowering Asteraceae (December–January) would substantially reduce the campus seed bank. Perennial clonal weeds require additional tactics—deep tillage to fragment rhizomes (*Panicum repens*), excavation or solarization for tuberous sedges (*Cyperus rotundus*, *C. esculentus*), and shading or mulching to suppress stoloniferous turf weeds (*Cynodon dactylon*). Integrating phenology with selective utilization (harvesting edible shoots of *Ipomoea aquatica* prior to flowering) can simultaneously manage spread and deliver nutritional benefits. While many campus weeds are cosmopolitan ruderals, some species of ornamental or habitat value merit conservation attention. The fern *Nephrolepis falcata* and creeping ground cover *Callisia repens* stabilize shaded slopes; pollinator supporting blooms of *Tridax procumbens* and *Sphagneticola trilobata* contribute nectar and pollen resources during dry months. Blanket herbicide use would erode these benefits. A tiered campus weed policy that distinguishes high risk agronomic weeds from low risk or beneficial spontaneous flora is recommended.

Conclusion

The Daffodil International University campus supports a diverse assemblage of 55 weed species across 16 families, shaped by a mosaic of managed and semi natural habitats. Many of these weeds possess recognized medicinal and/or culinary value in local traditions, and several (e.g., *Ipomoea aquatica*, *Eclipta alba*, *Ageratum conyzoides*) are already used by community members. Integrating phenology-based control with selective utilization offers a pragmatic pathway toward sustainable campus weed stewardship that aligns with DIU's green campus commitments. The species matrix presented here provides a foundational resource for teaching, management, and future ethnopharmacological research.

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Conflict of Interest

There are no conflicts of interest declared by the author.

Ethical Approval

Because this research did not include humans or animals, no ethical approval is required.

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