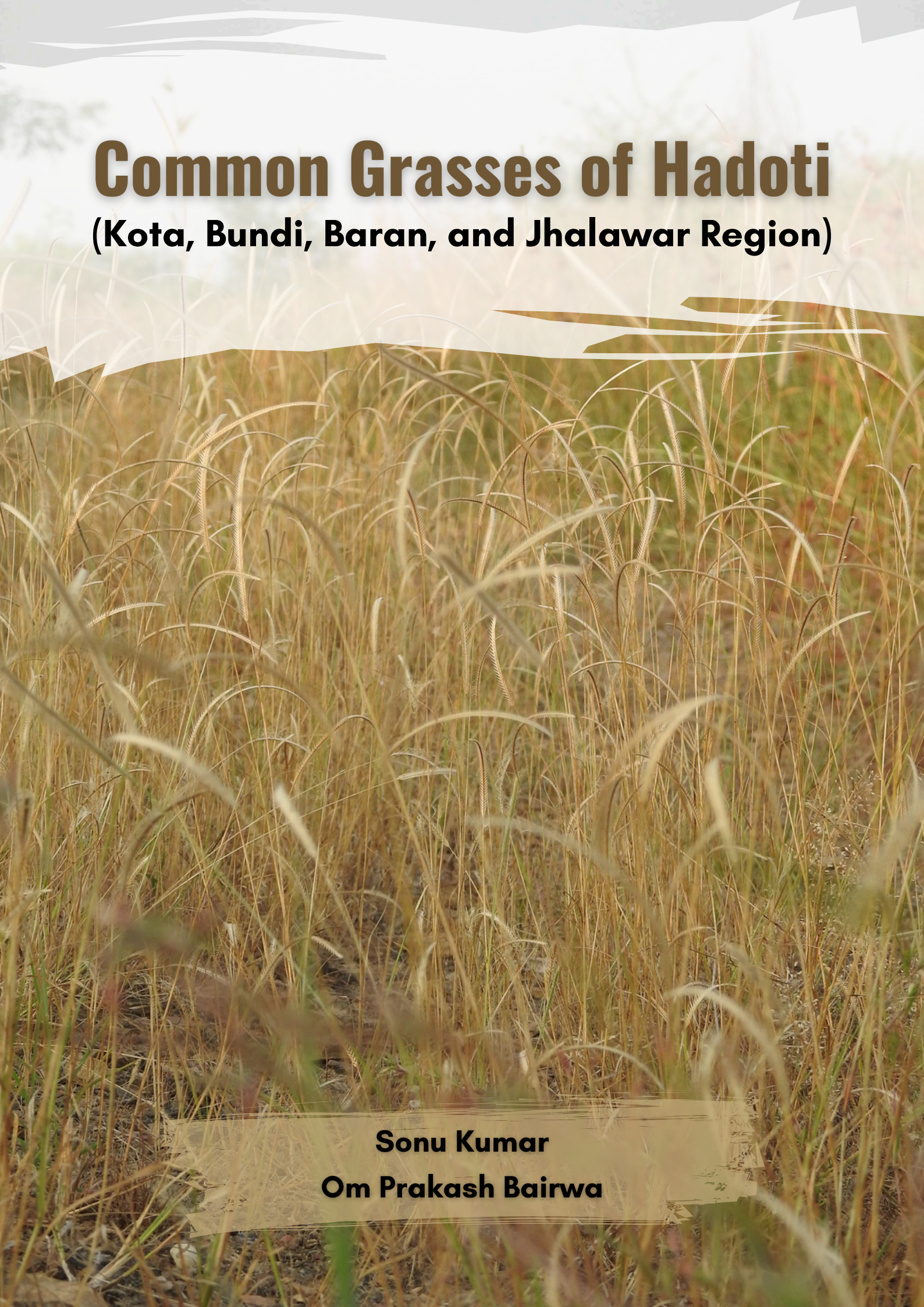
Common Grasses of Hadoti

(Kota, Bundi, Baran, and Jhalawar Region)



Sonu Kumar

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Preface

This booklet on *Common Grasses of the Hadoti Region* is designed for anyone interested in understanding the diversity of grasses, as well as for wildlife managers aiming to scientifically manage grasslands to support grazing by wild herbivores. The 41 species described here have been documented from across various habitats in the Hadoti region of Rajasthan.

A key feature of this handbook is that it enables users to identify grasses based on their vegetative parts or their flowering structures. The booklet includes a general introduction to grasslands, their classification, and taxonomy, along with practical tips for field identification. Each of the 41 species is listed and described in detail, with scientific names, common English names, and local Hindi names. Grasses have also been categorized based on their palatability.

Efforts have been made to observe and document the field distribution of each species, although further work is needed to determine the exact habitat range for some grasses. Flowering and fruiting data have also been recorded, which may be particularly useful for grassland restoration and wildlife habitat management.

Information presented in this booklet has been compiled from field surveys, local flora references, and expert consultations. We hope this work contributes to greater awareness and appreciation of grassland ecosystems in the Hadoti region.

Sonu Kumar

(District Co-ordinator Kota)
Biodiversity Research & Development Society India
Contact: Sonukumarflora97@gmail.com

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Mr. Leeladhar; Research Scholar, University of Kota
Ms. Priyanka Suman; M.Sc. Botany
Ms. Noopur Soni; Research Scholar, University of Kota

CONTENTS

INTRODUCTION

The Hadoti region of southeastern Rajasthan—comprising the districts of Kota, Bundi, Baran, and Jhalawar—is known for its rich natural diversity and unique semi-arid landscapes. Among its most vital yet often overlooked ecological components are the grasses, which form the foundational layer of many terrestrial ecosystems in this region.

This booklet, *Common Grasses of the Hadoti Region*, is an effort to document and introduce the varied grass species that occur across the diverse habitats of Hadoti—from riverbanks and marshlands to open scrublands, fallow fields, and rocky plateaus. While grasses may appear uniform or insignificant at first glance, they play a crucial ecological role in soil stabilization, nutrient cycling, habitat formation, and as a primary food source for wild and domestic herbivores.

This compilation brings together observations, field documentation, and botanical insights from across the Hadoti landscape. It highlights over 40 species of grasses found across this region, with descriptions aimed at helping students, researchers, forest officials, and nature enthusiasts in identifying grasses in the field.

The booklet also emphasizes the importance of grasslands in biodiversity conservation and ecological restoration, particularly in semi-arid regions like Hadoti, where these habitats support critical wildlife such as blackbuck, nilgai, wild boar, and various bird species.

We hope that this work not only helps in understanding the botanical richness of Hadoti but also inspires further documentation and scientific management of grassland habitats in Rajasthan.

GENERAL INTRODUCTION OF GRASSES

Human beings have used grasses for food, fodder, and shelter since time immemorial. The grass family Poaceae (Gramineae) provides the world's major grain crops (cereals and millets) such as rice (*Oryza spp.*), wheat (*Triticum* spp.), maize (*Zea mays*), barley (*Hordeum vulgare*), jowar (*Sorghum spp.*), bajra (*Pennisetum spp.*), and oats (*Avena spp.*). Livestock depends on grasses for forage. Grasslands are the most highly productive ecosystems on earth, and their depletion causes ecosystem imbalance and the extinction of many dependent species. This is because grasslands are the ideal habitats for various plants, birds, mammals, and amphibians (Burgess & al., 2007). Grasslands also play a pivotal role in the global carbon cycle (Gibson, 2009).

The notable feature of grasslands is that they are overwhelmed or co-dominated by graminoid vegetation, including the true grasses (members of the family Poaceae) and other grass-like species such as sedges (Cyperaceous members).Grasses are highly successful from an evolutionary perspective, with about 12000 species belonging to about 779 genera (Kellogg, 2015; Soreng & al., 2017; Hodkinson, 2018; POWO, 2022). In India, 1391 species belong to 242 genera (Prasanna Pers. comm.), whereas in Rajasthan 270 species under 100 genera (R.P. Pandey, 1993). The family name, Poaceae, was coined by Jussieu (1789), and the grouping of the genera was based on several stamens and florets.

Grasses belong to the Poaceae family which is also known as Gramineae. Grasses are Usually herbaceous which indicate that they

produce a seed, do not develop woody tissue, and die down at the end of a growing season. They are monocotyledonous which means one leaf sprouts from the seed, and often have jointed, slender, sheathed leaves. Grasses can be large, like bamboo or corn, or small like annual bluegrass. Grass plants develop fruit called grain which feed much of the world and yet have green leaves and stems not digestible for humans that are the main food source for animals. Grasses can also be used for building materials, medicines, and biomass fuels.

Taxonomic Tree:

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Subphylum: Angiospermae
Class: Monocotyledonae
Order: Cyperales
Family: Poaceae

Grasses, whether annual or perennial, are mostly herbaceous (not woody), Monocotyledon plants with jointed stems and sheathed leaves. They are usually upright, cylindrical, with alternating leaves, anchored to the soil by roots. Grasses have leaves (blades that narrow into a sheath), a stem (culm), a collar region (where leaves attach to the stem), roots, tillers, and during the reproductive stage an inflorescence or seed head develops. Grasses may have rhizomes or stolons and the collar regions have differing variations of ligules, auricles, and blades (laminas). Inflorescences of grasses also vary widely so during vegetative stages; the collar and leaves help in proper

identification and during reproductive stages the inflorescence is very helpful.

Inflorescences are an arrangement of many spikelets composed of individual florets. Grasses have three main inflorescence (seed head) types: panicle, spike, and raceme.

What are grasses (and what are not)

Grasses are the largest and one of the most evolved groups of flowering plants. The grass family (Poaceae) includes plants as small as our little finger as well as gigantic bamboos (yes, bamboo is a grass). Typically, these are plants that share the following features. They have cylindrical stems; slender leaves; tiny inconspicuous flowers with extremely reduced floral parts (no large, colourful petals, just their tiny brown dry equivalents instead); three or six stamens (male parts of the flower – in the case of grasses the stamens dangle, enabling the pollen grains to be dispersed by the wind); and a one-seeded fruit (a grain – as that of rice,s wheat and corn).

Ecologically, grasses play a key role in ecosystem functioning globally. And economically, grasses form the backbone of human development. Grasses form the staple diet for most people across the world. Sedges (plants of the family Cyperaceae) are frequently confused with grasses and following are a few simple points to differentiate them (Table 1).

Table-1. Difference between Poaceae & Cyperaceae family.

Poaceae	Cyperaceae
Stems are circular in cross section	Stems are angular (usually triangular) in cross section. But sedges of the genus Eleocharis, known as spike- rushes are an exception.
Grasses have distinct nodes	Sedges lack nodes
Stems are usually hollow except at the nodes	Stems are not hollow
Leaves are 2-ranked (i.e. they come off the stem in 2 directions)	Leaves are 3-ranked (i.e. they come off the stem in 3 different directions)
Grasses have ligules	Sedges usually lack ligules (with the exception of the genus Carex)
Grass flowers are supported by two bracts, a lemma and a palea	Sedge flowers are subtended by only one bract

Where and when should you hunt for grasses

Grasses grow pretty much everywhere. You are likely to encounter at least half a dozen species, most of them common ones, even if you casually stroll around your backyard. However, one needs to have an eye for the rare species. There are a few unique habitats and microhabitats which could be explored to find the rare grasses in Hadoti. Interesting species can be usually found at the edges of habitats or in regions with high habitat heterogeneity. These include greenbelt area, fallow agricultural fields, areas with high moisture (like wetlands), and beneath trees. Besides heterogeneous habitats, areas that are more or less homogenous, including aquatic areas such as pond side, and open grazing lands, also have particular grass species associated with them. However, they are far fewer in number. Most grass species, usually, flower or fruit just after the monsoon season. This would be the most ideal time for some quality ‘grass watching’.

Characters to look out for in the field:

Habit and habitat: Habit refers to a plant's growth form. Some grasses have a typical, and distinctive growth habit. For example, some grasses might be erect, while others might produce shoots on extended branches parallel to the ground. Habitat refers to the kind of surroundings or environment that a species typically occurs in. Habitat, like habit, can be a distinguishing feature. Some grasses have a preference for aquatic regions; others grow profusely on the edges of drying ponds; some prefer undisturbed moist edges; and some prefer agricultural fields or fallow land.

Other characters: Apart from the habit and habitat, other distinguishing characters that should be recorded in the field include: presence of hair/bristles on leaves, flowers, type of inflorescence; arrangement of spikelets; presence or absence of awns. The parts that deserve attention are as follows:

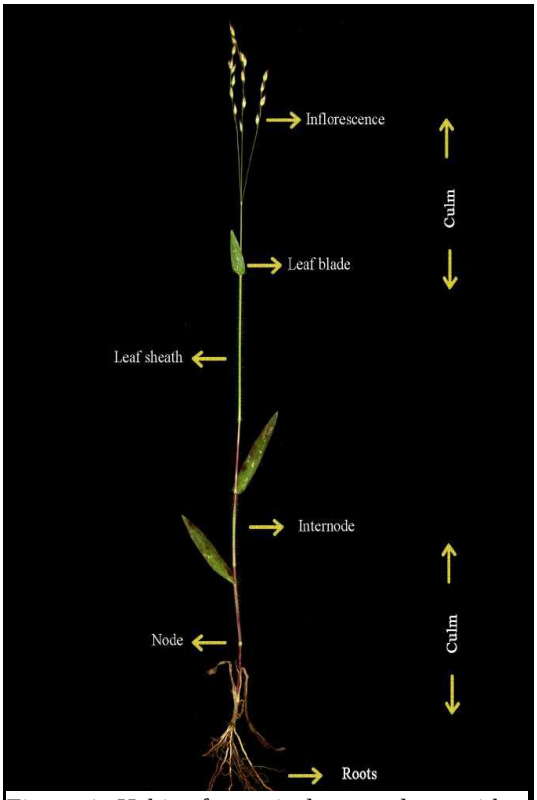


Figure 1. Habit of a typical grass along with a basic structure.

Leaf blade: The leaf may be thin or broad, with or without hair, the margins may have peculiar types of hair or smooth and even sharp in some cases, the leaf base and apex are also used as supplementary identification characters in some cases. (Figure 2)

Ligule: Ligule can be located at the junction of the stem and leaf base. It can be membranous, thin, bearded or even absent in some cases. (Figure 4)

Node: These are the joints in the stem. They may be prominently hairy or glabrous. (Figure 3).

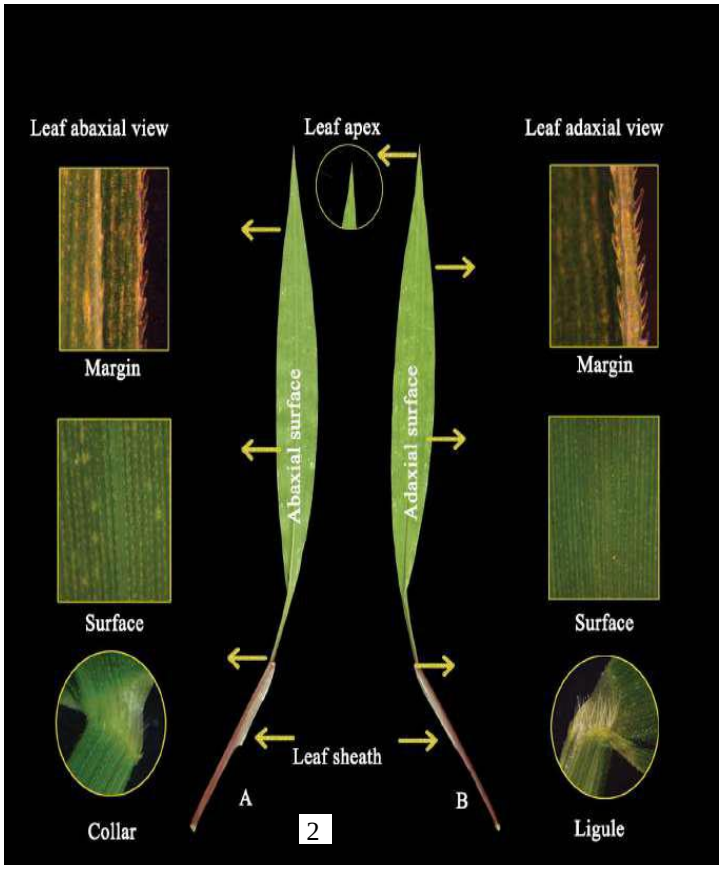
Inflorescence: Can be of various types.(Raceme, Panicle & Spiks).

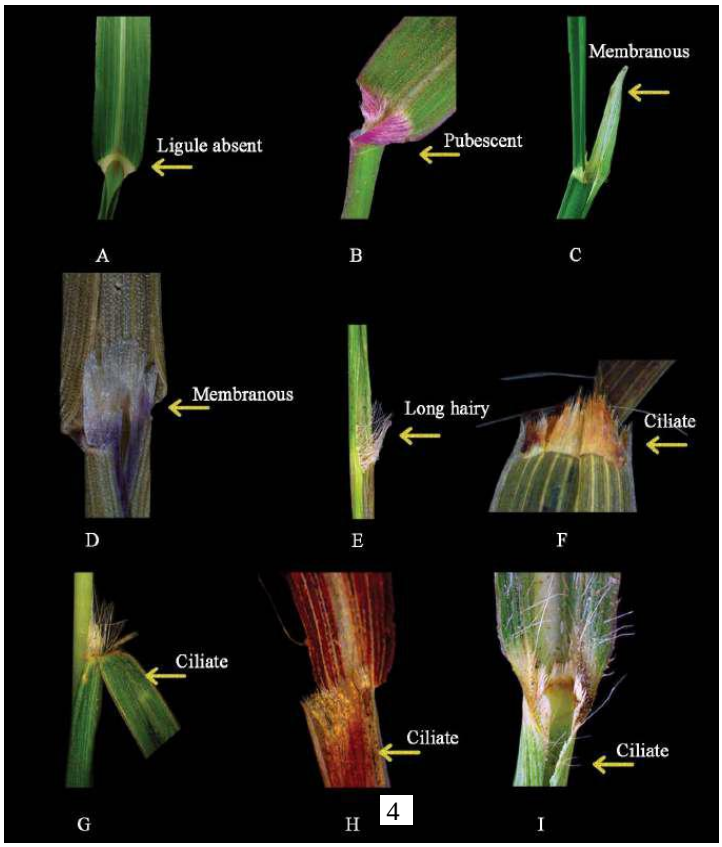
Glumes: These are the outermost grass flower parts and are very important for identifying grasses. Usually each floret has an upper and a lower glume, and these may be variously ornamented with ridges, hooks, pits or with wings and peculiar hair.

Awns: Awns arise usually from lemma and have different types of structures, some are straight, some geniculate, some tri-fid, and some bifid.

Lemma and Palea: They are the innermost floral parts and have an array of shapes, textures and apices.

Seed: Usually a caryopsis, with various ornamentations, shapes, and textures.





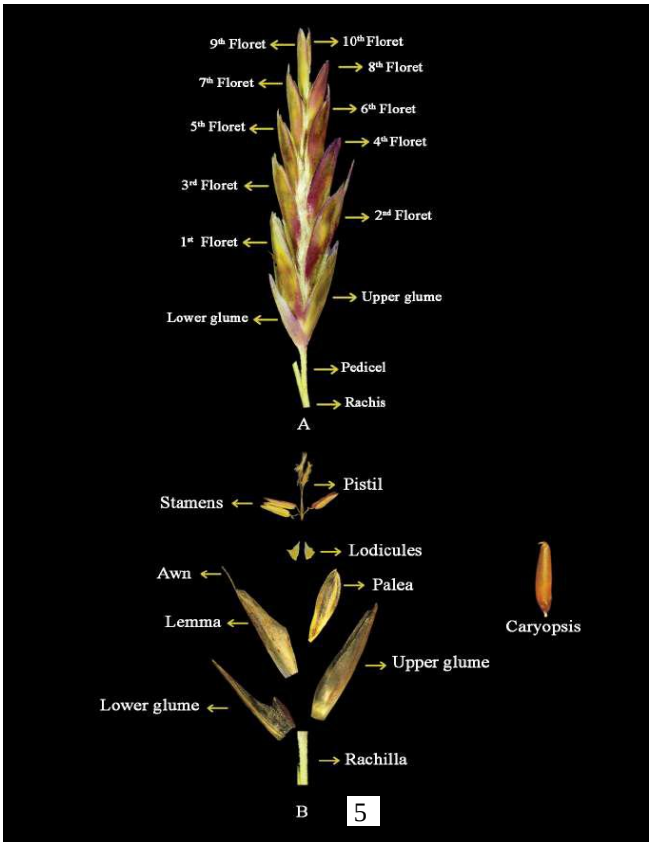


Figure 2; Grass leaf morphology. Figure 3; Culm node (A-D). Figure 4; Ligule diversity (A-I). Figure 5; A. General view of spikelet& B. Dissected spikelet parts.

Source: Internet

Grasses Checklist of Hadoti Region:

More than 40 grasses species are found in Hadoti Region. Out of these 41grass species have described in detail. These 41grasses have been categorised in palatable and un-palatable grasses and are listed in Table 2. It is an accepted fact that most of the grasses are palatable in the initial stage of growth, and some grasses which are un-palatable for small herbivores like Sambhar, Chital or Chinkara, may be palatable for another herbivores. Some animals may have liking for grasses which are unpalatable for most, for example *Chrysopiogon zizanoides* (vetiver), considered as un-palatable grass, is favourite feed of Hog deers. Also in times of scarcity, herbivores may feed on leaf tips of un-palatable grasses. Following categorised of grasses into palatable and un-palatable have been done for ABP.

Table 2; Grasses checklist of Hadoti Region

S. N.	Family	Botanical name	Common name *(E & H)	*Life trend	Palatability
1.	Poaceae	***Acrachne racemosa***	जोराघास	A	Palatable
2.	Poaceae	***Apluda mutica***	फूलेडा/फूलेड	P	Palatable
3.	Poaceae	***Aristida adscensionis***	लापला	A	Unpalatable
4.	Poaceae	***Aristida funiculate***	लाम्प्रो, लापला	A	Unpalatable
5.	Poaceae	***Bambusa balcooa***	धनुबास	P	Unpalatable
6.	Poaceae	***Cenchrus setigerus***	भूरट	A	Palatable
7.	Poaceae	***Chloris barbata***	अपंगघास	P	Palatable
8.	Poaceae	***Chloris virgata***	अपंगघास	P	Palatable
9.	Poaceae	***Chrysopogon zizanioiides***	खस-खस	P	Unpalatable
10.	Poaceae	***Cymbopogon citrates***	गंधचित्रण, Lemon grass	P	Unpalatable
11.	Poaceae	***Cynodon dactylon***	दूबघास	P	Palatable
12.	Poaceae	***Dactyloctenium aegyptium***	मकडाघास	A	Palatable
13.	Poaceae	***Desmostachya bipinnata***	डाभ	P	Unpalatable
14.	Poaceae	***Dicanthium annulatum***	अंजनघास	P	Palatable
15.	Poaceae	***Dicanthium foveolatum***	करड़/बुहारी	P	Palatable
16.	Poaceae	***Digitaria ciliaris***	Finger grass	A	Palatable
17.	Poaceae	***Dinebra retroflexa***	सरपटघास	P	Palatable
18.	Poaceae	***Echinochloa colona***	सावा	A	Palatable
19.	Poaceae	***Eleusine indica***	बलराज	A	Palatable
20.	Poaceae	***Eragrostis artrovirens***	Thalia Lovegrass	A	Unpalatable

21.	Poaceae	***E. japonica***	छिछनीघास	A	Unpalatable
22.	Poaceae	***E. pilosa***	चिड़ीघास	A	Palatable
23.	Poaceae	***E. tenella***	Indian love, चिड़ीघास	A	Palatable
24.	Poaceae	***E. unioloides***	Chinese Lovegrass	A	Unpalatable
25.	Poaceae	***Eriochloa procera***	सुवा, चिड़ीचावल	A	Palatable
26.	Poaceae	***Heteropogon contortus***	कांशुल, शूळघास	P	Palatable
27.	Poaceae	***Isachne globosa***	छोटीकुटकी	P	Palatable
28.	Poaceae	***Ischaemum rugosum***	सारामोला	A	Unpalatable
29.	Poaceae	***Iseilema anthephoroides***	गंदेलघास	P	Palatable
30.	Poaceae	***Melanocenchris jacquemontii***	Black desert millet	A	Palatable
31.	Poaceae	***Oryza rufipogon***	जंगलीधान	P	Palatable
32.	Poaceae	***Paspalum distichum***	Knot grass	A	Unpalatable
33.	Poaceae	***Saccharum spontaneum***	कांस	P	Unpalatable
34.	Poaceae	***Schoenefeldia gracilis***	तलवारघास	A	Palatable
35.	Poaceae	***Sehima nervosum***	सुकईघास	P	Palatable
36.	Poaceae	***Setaria pumila***	छोटीबिल्ली	A	Palatable
37.	Poaceae	***Setaria verticillata***	बड़ीबिल्ली	P	Palatable
38.	Poaceae	***Sorghum halepense***	बरू	P	Unpalatable
39.	Poaceae	***Tetrapogon tenellus***	टिपीघास	A	Palatable
40.	Poaceae	***Themeda quadrivalvis***	गुंदेल	A	Palatable
41.	Poaceae	***Urochloa deflexa***	चिड़ीचावल	A	Palatable

[Note: * E= English, H= Hindi, P= Perennial, A= Annual]

COMMON GRASSES OF HADOTI REGION:

1. *Acrachne racemosa* (B. Heyne ex Roth) Ohwi. :

Common name: Goosegrass, चींकले, जौराघास

Habitat: Fairly common in sandy loam soil & rocky habitat.

Description : Tufted, erect or geniculately ascending annual grass, upto 60 cm high. Leaves flat, glabrescent, acuminate; ligule of a few hairs. Spikes many, upto 7.5 cm long. Spikelets many flowered, each 4.5-7.5 mm long, shining, greenish brown. Gulmes unequal, finely acuminate or aristulate. Lemmas 1.75-2.5 mm long, 3 nerved, with a stout awn point. Caryopsis rugose.

Fl. & Fr.: August - November.

Palatability: Palatable

Loc.: Abhera biological park kota (ABP)

Figure: *Acrachne racemosa* (B.Heyne ex Roth) Ohwi: A. Habitat; B. Leaf base; C. Digitae Inflorescence; D. Single digite; E. Single raceme

2. Apluda mutica (L.) :

Common name: Mauritian Grass, फूलेडा, फूली, भोंगड़ा

Habitat: Common in rocky areas &wastelands.

Description: Ascending or rambling, perennials, upto 1.5 m high. Leaves linear lanceolate, long acuminate, base narrowed: ligule membranous, rounded. Panicles of 2 to many, simple racemes terminating the culms, enclosed in a peduncled spathe. Spikelets in threes, one sessile and two pedicelled; one of the pedicelled is seated upon a broad, strap- like, glabrous pedicel. Sessile spikelets c. 4.5 mm long. Hermaphrodite. Glumes equal, chartaceous. Upper lemma awned or muticous. Stamens 3. Caryopsis oblong.

Fl.-Fr.: August – November

Palatablity: Fairly good forage grass and is readily eaten by animals when young.

Loc.: Kota.

Figure: *Apluda mutica* L.; A. Habitat; B. Inflorescence; C. Dry form with habitat; D. Mature & open spikelets

3. *Aristida adscensionis* L. :

Common name: Common Needle grass, लापला, लांपघास

Habitat: Commonly found in sandy to rocky habitat, some time forming pure formation in the plains.

Description: Plants diffuse; presence of tri-fid awn with one arm longer than other two. Annual, forming erect or sprawling clusters 10-100 cm tall. Leaf-blades are linear, up to20 cm long and 3 mm wide, expanded or folded. Panicle are up to 30 cm long, occasionally lax, usually contracted about the main branches, sometimes narrow and dense. Spikelets are pallid, green or purple; glumes unequal, linear - lance shaped to lance shaped, prominently shorter.

Other information: This is a grass that everyone in the park knows about, because its sharp arrow-like shape gets stuck in peoples clothes, shoes, & socks and causing pricking pain in feets.
Fl. & Fr.: August-November.
Palatability: Unpalatable
Loc.: Kota.

Figure 1. *Aristida adscensionis* L. A. Habitat (*Aristida* patch); B&C. Inflorescence; D & E. Spikelet

4. Aristida funiculate Trin. & Rupr :

Common name: Trishula, Pandhrikusal, लम्प्रो

Habitat: Common in open rocky-gravelly wastelands & grasslands.

Description: Geniculately ascending annual, up to 50cm high. Leaves flat or convolute,ciliate; ligule a small, ciliate membrane. Panicles 5-15 cm long, lax. Spikelets long, green with purplish tinge. Lower glume upto 2-4 cm long, linear-lanceolate, acute,1-nerved, awned; the upper one shorter or rarely equal to lower one. Lemma articulate at the top; column long, twisted, awn-branched upto 5cm long &subequal; callus conical, punget.

Fr. & Fr.: Aug.-Nov.
Palatability: Unpalatable
Loc.: Kota

Figure: *Aristida funiculata* Trin. & Rupr.: A & B. Habitat; C. Inflorescence; D. Spikelet

5. *Bambusa balcooa* Roxb.:

Common name: Balcooa Bamboo, धनुबाँस

Habitat: Common in rocky habitats & urban areas

Description: Arborescent bamboos, occasionally shrubby or scrambling, common homestead bamboo. Occurs in all over India . The stem is up to 30 m tall, dark green and thick-walled. the diameter of the cavity about one-third of that of the stem; nodes thickened with a whitish ring above, hairy below; internodes 20-40 cm long; branches from the lower nodes leafless and hard, mostly spreading, sometimes thorn-like; young shoots blackish-green, green with yellow, brown or orange tinged stem-sheath, clothed sparsely with dark brown hairs. Leaves are 15-30 cm long, 2.5-5 cm broad, oblong-lanceolate, glabrous above, pale and puberulous beneath, margins rough, apex pointed, somewhat heart-shaped or rounded at base with a short stalk.

Fl. & Fr.: Flowering after long intervals

Palatability: Unpalatable

Loc.: Kota

Figure: *Bambusa balcooa* Roxb.: A. Habitat; B. Culm

6. *Cenchrus setigerus* Vahl. :

Common name: Bird wood Grass, भूरट, धामण

Habitat: Most common grass in mixed habitat.

Description: Erect or geniculately ascending perennials, 10-70 cm high. Leaves linear lanceolate, acuminate; ligale a shortly ciliate rim. Panicles upto 10 cm long, greenish with purple tinge, solitary, cylindric; rachis angular. Involucre cup shaped, subsessile. Spikelets 2-3 in each involucre, each 3-5 mm long, sessile. Lower glume c. 2.5 mm long, hyaline, 1 nerved; upper ones c. 4 mm long, 5 nerved. Caryopsis c. 2 mm long, broadly oblong, dorsally compressed, smooth.

Fl. & Fr.: August – November.

Palatability: Palatable

Loc.: Kota

Figure: A. Habitat; B. Inflorescence (raceme); C. Close-up of inflorescence.

7. *Chloris barbata* Sw. :

Common name: Swollen Finger Grass, अपंगघास

Habitat: Commonly found in black soil & moist habitat.

Description: Tufted, geniculately ascending, stoloniferous perennials, 50-100 cm high. Leaves flat or convolute, narrowly linear, acuminate; ligule a membrane. Spikes 5-15, digitate, tinge with purple. Spikelets 3-flowered, 3awned, c. 2.5 mm long. Lower glume upto 1.5 mm long; upper one c. 2.5 mm long. Lowest lemma 2.0-2.5 mm long, ovate- elliptic, pallid, ciliate, awned; second and third lemma reduced to glabrous, clavate scale, awned.

Fl. & Fr.: July – Dec.

Palatability: Palatable

Loc.: Kota

Figure: A. Habitat; B. Hairless Culm Node; C. Digitate Inflorescence; D. Close-up of single digite spikelets with awns.

8. Chloris virgata Sw. :

Common name: Feather finger grass, Black seed grass, करड़, सियारपूछ

Habitat: Commonly found in mixed habitat &rocky plains.

Description: Apical sterile spikelets with3-4 awns; white-pinkish spikes. Annual grass, culms tufted, erect or geniculately ascending, slightly flattened, 15–100cm tall. Basal leaf sheaths strongly keeled, glabrous; leaf blades flat or folded, 5–30 cm,2–7 mm wide, Spikelets with 2 or 3 florets, 2-awned.

Other information: Because of the bushy,silver appearance of its inflorescence, it is known as Siyarpunch / Siyalpunch in hadauti, which means jackals tail.

Fl. & Fr.: July–December

Palatability: Palatable

Loc.: Kota

Figure: A. Habitat; B. Measurement sheet; C. Culm Node; D. Digitate Inflorescence; E. Open inflorescence with black seeds.

9. *Chrysopogon zizanioiides* (L.) Roberty :

Common name: Vetiver grass, खस, खस-खस,

Habitat: Common in moist habitats; also grown in pond/stream side.

Description: It is an erect perennial, densely tufted, awnless grass. It has no rhizome or stolons. The culms are stout, smooth and attain upto 2.0 m height. Basal diameter is about 6 to 15 cm with tillers ranging from 6 to 30. Leaves are stiff, long, wide and green in colour. Inflorescence is conical panicle, 15-40 cm long, glabrous and often reddish brown or purple in colour. Sessile spikelets 3.0-3.5 mm long, with distinct hairless callus. Lower and upper glumes 3 nerved, spinulose.

Fl. & Fr.: August – March.

Palatability: Unpalatable

Loc.: Kota Pond side.

Figure: *Chrysopogon zizanioides* (L.) Roberty: A. Habitat; B. Inflorescence; C. Enlarged view of raceme; D. Close-up view of panicle

10. *Cymbopogon citratus* (DC.) Stapf :

Common name: Lemongrass, Oil grass, गंधत्रिण

Habitat: Rarely found in grasslands, cultivated for essential oil extracted from leaves. This grass was planted by Sonu Kumar in july 2022.

Description: Densely tufted, erect perennials, 12 m high. Leaves linear, acuminate, attenuated at the base, glabrous; ligule very short, scarious. Panicles 25-50 cm long, spatheate. Racemes bi – nate, Purplish red, villous. Fertile spikelets, linear lanceolate, acuminate, glabrous; callus bearded. Glumes subequal, subchartaceous, keeled. Pedicellate spikelet male or neuter, glabrous.

Fl. & Fr.: September – February.

Palatability: Unpalatable

Loc.: Kota

11. *Cynodon dactylon* (L.) Pers. :

Common name: Common Lawn Grass, Bermuda Grass, दूब, दोबड़ों

Habitat: Common in fallow field & wastelands, also grown in lawns.

Description: Creeping, stoloniferous, often rhizomatous perennials forming matted tufis, 10-40 cm high. Leaves linear - lanceolate, acute, glaucous, auricles and orifices bearded; ligule 0.1- 0.35 mm long. a rim of short, white hairs. Spikes 26. upto 6.5 cm long. Spikelets 20-2.5 mm long. crowded, secund. Glumes lanceolate, 1-nerved. Lemmas c. 2 mm long, silky pubescent on the keel with simple hairs, obliquely oblong. Stamens 3. Caryopsis c. 1 mm long, mostly turgid.

Fl. & Fr.: January - December.

Palatability: Palatable

Loc.: Kota.

Figure: *Cynodon dactylon* (L.) Pers: A. Habitat; B. Digitate inflorescence; C. Close-up of a single digite.

12. *Dactyloctenium aegyptium* (L.) Willd. :

Common name: Crowfoot grass, मकड़ाघास

Habitat: Commonly found in moist areas, fallow fields, wastelands & along the irrigation channels.

Description: Erect or geniculately ascending, hispid annuals, 15-70 cm high, often rooting at lower nodes. Leaves linear, acute, margins and nerves covered with bulbous based hairs; ligule aring of white hairs. Spikes 2-6, each upto 6 cm long, digitate; rachístrigonous, rigid, excurrent into a pungent mucro, c. 2 mm long. Spikelets 3 to 5-flowered, 3.5-4.25 mm long. Glumes subequal, upto 2.5 mm long, with scabrid keel. Caryopsis c. 1 mm across, compressed, subglobose, reddish.

Fl. & Fr.: July - November.

Palatability: Palatable

Loc.: Kota

Figure: *Dactyloctenium aegyptium* (L.) Willd: A. Habitat; B. Leaf; C. Green inflorescence; D. Dry inflorescence

13. *Desmostachya bipinnata* (L.) Stapf. :

Common name: Daabh, डाभ, कुश

Habitat: Commonly found near moist places, particularly in sandy & clayey soil.

Description: Tufted, stout, erect, rhizomatous perennials, upto 1.25 m tall, with creeping rootstock. Leaves acuminate; sheaths glabrous, densely flabellate. Inflorescence 30-60cm long. Spikes 1.5 – 3.5 cm long, clustered, cach cluster bearing 20-30 spikelets. Spikelets 2.5-3.5 mm long, linear-oblong. Glumes unequal. Lemmas c. 2.5 mm long, straw coloured.

Fl. & Fr.: July – November.

Palatability: Unpalatable

Loc.: Kota

Figure: *Desmostachya bipinnata* (L.) Stapf : A. Habitat; B. Green inflorescence; C. Dry inflorescence

14. *Dichanthium annulatum* (Forssk.) Stapf. :

Common name: Sheda Grass, Bluestem, दिननई, अंजनघास

Habitat: Very common in mixed habitat.

Description: Tufted, erect or ascending perennials, 50-90 cm high. Nodes of the culms densely bearded. Leaves linear lanceolate, acuminate; ligule c. 1 mm, long. Inflorescence of 2-10 digitate or subdigitate racemes, each raceme upto 7.5 cm long. Sessile spikelets narrowly elliptic. Glumes equal; lower glume of the sessile spikelet oblong, with bulbous based hairs on the keels and near the apex. Upper one keeled and awaed. Pedicellate spikelets 2.5-5.5 mm long, awned.

Fl. & Fr.: August - November.
Palatability: Palatable
Loc.: Kota

Figure: *Dichanthium annulatum*; A. Habitat; B. Leaf base & hairy node; C. Digitate / Sub-digitate inflorescence

15. Dichanthium foveolatum (Delile) Roberty :

Common name: Pitted Bluestem Grass, करड़, बुहारीघास

Habitat: Commonly found in rocky habitat & grasslands.

Description: Tufted, ascending perennials, 20-80 cm high, with hairy basal sheath. Leaveslinear, flat or rolled ligule truncate, ciliate. Racemes upto 4 cm long. Sessile spikelets c. 3.5 mm. long, narrowly elliptic. Lower glume glabrous, with a pit in the upper half. Upper lemma acute or bidentate, awned. Pedicellate spikelets with a pit.

Fl. & Fr.: August – December.

Palatability: Palatable

Loc.: Kota

Figure: *Dichanthium foveolatum* (Delile) Roberty: A. Habitat; B. Culm node with minute hairs; C. Hairy ligule; D. Single racemes inflorescence; E. Pited glume.

16. Digitaria ciliaris (Retz.) Koeler. :

Common name: Wild Crabgrass, Tropical crab grass, Tropical finger grass

Habitat: Commonly found in mixed habitat & wastelands.

Description: Erect or geniculately ascending annuals, often rooting at the lower nodes. Leaves linear-lanceolate, acuminate, rounded at the base ligule 1.5-3.0 mm long, membranous, more or less lacerate. Racemes 2-10, subsessile, subdigitate, 5-20 cm long. Spikelets 2-nate, 2-3 mm long, elliptic lanceolate or oblong-lanceolate, acute. Upper glume half as long as the spikelet, 3-nerved; lower one 2-4 mm long, triangular. Lower lemma as long as the spikelet, 7-nerved, appressedpuberulous, silky pubescent, 5 to 7-nerved, empty. Stamens 3. Caryopsis c. 2.75 mm long, ellipsoid.

Fl. & Fr.: August October.

Palatability: Palatable

Loc.: Kota

Figure: *Digitaria ciliaris* (Retz.) Koeler: A. Habitat; B. Inflorescence; C. Membranous ligule; D. Enlarged viewer of raceme

17. Dinebra retroflexa (Vahl) Panz. :

Common name: Viper Grass, Cat's tail grass, बड़ासरपट, माधवलु

Habitat: Common weed in fallow fields & wastelands.

Description: Tufted, erect or geniculately ascending annuals, often rooting at lower nodes. Leaves linear-lanceolate, acute, glan- dular. Spikes c. 5 cm long, stiff, deflexed, arranged racemosely along axis, deciduous at maturity. Spikelets long, sessile, narrowly wedge-shaped, 1 to 3-flowered, greenish. Glumes coriaceous, asymmetric, with caudate curving tips, glandular along the keel. Lemmas c. 2.5 mm long, pilose, narrowly ovate.

Fl. & Fr.: July - September.

Palatability: Unpalatable

Loc.: Kota

Figure: *Dinebra retroflexa* (Vahl) Panz.: A. Habitat; B. Inflorescence; C. Enlarged view of a raceme.

18. Echinochloa colona (L.) Link :

Common name: Small barnyard grass, Marsh Grass, जंगलीजांगरा, सावा

Habitat: Commonly found in moist and marshy habitats.

Description: Erect or geniculately ascending annuals, 20-80 cm high, often root- ing at the lower nodes. Leaves linear, acute, flaccid, scabrid or glabrescent, marked by a purplish-brown band at the junction of the blade and sheath. Panicle of racemes branches upto 3 cm long, appressed or ascending to the axis; pedicels 2- nate. Spikelets 23 mm long. crowded, ovate to obovate-elliptic, pubescent. Glumes and lemmas neither awned, nor cuspidate, acute. Caryopsis 1.5-2.0 mm long, planoconvex, broadly elliptic.

Fl. & Fr.: July – October.

Palatability: Palatable

Loc.: Kota

Figure: *Echinochloa colona* (L.) Link: A. Habitat; B. Inflorescence; D. Enlarged view of inflorescence with spikelets

19. Eleusine Indica (L.) Gaertn. :

Common name: Crow foot grass, Indian goose grass, नन्दीमुखी, बलराज

Habitat: Commonly found along open wastelands near moist habitat.

Description: E. indica is a tufted annual grass, prostrate and spreading, or erect to about 40cm, depending on density of vegetation but not usually rooting at the nodes. The root system is very well developed and strong and the name jongs grass, it on germination, the first leaf, about 1cm long tapers very suddenly to a point and may be pressed quite flat on the soil. The inflorescence consists of 3-8 racemes, each 5-10 cm long, about 5 mm wide, arranged more or less digitately, though one raceme may be inserted about 1cm below the others.

Fl. & Fr.: September – January
Palatability: Palatable
Loc.: Kota

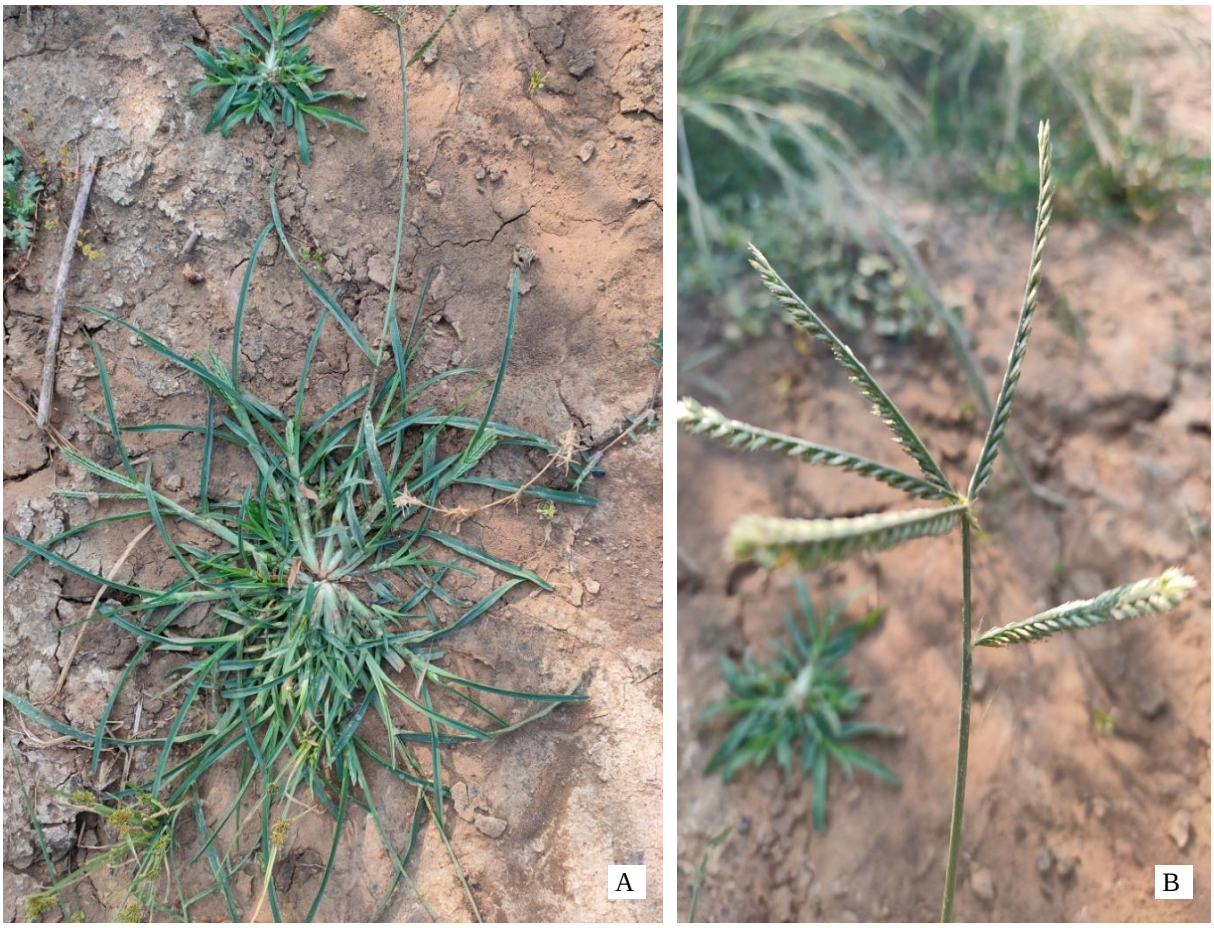


Figure: *Eleusine Indica* (L.) Gaertn: A. Habitat & Habit; B. Inflorescence

20. Eragrostis atrovirens (Desf.) Trin ex. Steud. :

Common name: Thalia Love grass

Habitat: Mostly found near swampy habitats. This species is highly polymorphic as regard to the habit and size of inflorescence.

Description: Tufted perennials, upto 1 m high. Leaves flat or convolute, linear, acute. Ligule membranous. Panicles upto 20 cm long, ovate or oblong. Spikelets5 to 15-flowered, linear. Glumes subequal, ovate-lanceolate, 1-nerved. Lemmas broadly ovate, 3-nerved, acute or subacute when flattened. Palcascabrid on the keel. Stamens 3. Caryopsis c. 0.75 mm long, ellipsoid, reddish-brown.

Fl. & Fr.: August – November

Palatability: Unpalatable

Loc.: Kota

Figure: *Eragrostis atrovirens* (Desf.): A. Habitat; B. & C. Inflorescence

21. Eragrostis japonica (Thunb.) Trin. :

Common name: Pond Love grass, राँकी, छिछनीघास

Habitat: Common in moist and marshy habitats along River & pond sides.

Description: Tufted. Geniculately ascending annuals or perennials, upto 70 cm or more high. Leaves flat, linear, acute, glabrous. Ligule a fimbriate membrane. Panicle 5-45 cm long, either contracted with appressed branches or interrupted with short spreading and sub-whorled branches. Spikelets upto 6.5 mm long, many-flowered. Glumes subequal, hyaline, obtuse, 1-nerved. Lemmas c. 1 mm long, obtuse. Stamens 2. Caryopsis c. 0.5 mm long, obovoid polished, reddish-brown.

Fl. & Fr.: October February.

Palatability: Unpalatable

Loc.: Kota

Figure: *Eragrostis japonica* (Thunb.) Trin**:** A. Habitat; B. Inflorescence; C. Enlarged view of inflorescence with spikelets.

22. Eragrostis pilosa (L.) P.Beauv :

Common name: India lovegrass, चिड़ीघास

Habitat: Common in moist-marshy palaces & wastelands.

Description: It is an annual; caespitose. Culms erect, or geniculately ascending; 20-70 cm long. Ligule a fringe of hairs. Leaf-blades 2–20 cm long; 1–4 mm wide. Inflorescence a panicle. Panicle open; elliptic, or ovate; 4–25 cm long. Primary panicle branches whorled at lower nodes.

Fl. & Fr.: July – October.

Palatability: Palatable

Loc.: Kota

Figure: *Eragrostis pilosa* (L.): A. Inflorescence; B & C. Enlarged view of inflorescence

23. Eragrostis tenella (l..) P.Beauv. ex Roem. & Schult. :

Common name: Japanese Lovegrass, Feather Lovegrass, सदाफूली, चिड़ीघास

Habitat: Commonly found in rocky habitat & grasslands.

Description: *E. Tenella* is a small densely tufted annual grass, with variable size, usually not more than 50 cm high. Clums glabrous, spindly, the nodes at the base, may be ramified or not Leaves up to 10cm long. Inflorescence usually with many slender spreading branches.

Fl. & Fr.: August – November.

Palatability: Palatable

Loc.: Kota

Figure: *Eragrostis tenella* (l..): A. Habitat; B. Inflorescence; C. Enlarged view of spikelet

24. Eragrostis unioloides (Retz.) Nees ex. Steud. :

Common name: Chinese Lovegrass, सीतेचेपोहे, तिल्केघास

Habitat: Common in moist & shady areas.

Description: Chinese Lovegrass is an annual, or perennial, short-lived grass. Stems are rising or prostrate, 7-50 cm long, rooting from lower nodes. Ligule is a fringe of hairs. Leaf-blades are 3-10 cm long, 2-5 mm wide. Spikelets occur in panicles. Spikelets are ovate, laterally compressed, looking like pink hearts, 4-12 mm long, 2-3.4 mm wide. The spikelets can be white too.

Fl. & Fr.: August – November.

Palatability: Palatable

Loc.: Kota

Figure: *Eragrostis unioloides* (Retz.): A. Habitat; B. Hairy leaf base; C. Enlarged view of inflorescence

25. Eriochloa procera (Retz.) C.E.Hubb.:

Common name: Tropical Cup Grass, चिड़ाचावल

Habitat: Common in water-logged places.

Description: Tufted, erect annuals, 30-100 cm high, with swollen and pubescent nodes. Leaves convolute when dry, glabrous; ligule a rim of very short hairs. Inflorescence 5-20 cm long; rachis angular, puberulous, bearing paired spikelets. Spikelets thinly pubescent. Lower glume and palea absent; upper one acute to acuminate. Upper lemma mucronate. Caryopsis free within the hardened lemma, lenticular, compressed, smooth.

Fl. & Fr.: August November.

Palatability: Palatable

Loc.: Kota

Figure: *Eriochloa procera* (Retz.): A. Inflorescence; B. Leaf base & Culm node; C. Enlarged view of inflorescence

26. Heteropogon contortus (L.) :

Common names: Black Speargrass, tangle head grass, शूलघास, कणसुळ

Description: It is densely tufted, perennial and highly palatable, 0.5 to 1.5 m tall, erect or decumbent grass. It is leafy mainly at base. Leaves are firm, linear upto 60 cm long and 3.7 mm broad, often hairy with bulbose base. Racemes are terminal, erect, 4.8 cm long with prominent dark brown awns (3-12 cm long) which are jointly twisted together to form a bundle at maturity. Sessile spikelet 7 mm long, hidden by the pedicelled spikelets.

Fl. & Fr.: August–November.

Palatability: Palatable

Loc.: Kota

Figure: *Heteropogon contortus* (L.): A. & B. Habitat; C. Inflorescence; D. Enlarged view of inflorescence

27. Isachne globosa (Thunb.) Kuntze :

Common name: Swamp Millet, Globose twinball grass, दलदलीचावलघास

Habitat: Commonly found near moist & marshy habitat.

Description: Marsh Millet is a tufted, erect or ascending , mostly perennial grass, with stems 15-60 cm long, trailing; nodes hairless. Leaves ovate-lanceshaped, hairless, base rounded, margin minutely toothed; sheath hairless; ligule a cluster of hairs. Flowers are borne in panicle 4-10 cm long, branches minutely toothed. Spikelets are spherical; glumes similar broadly ovate.

Fl. & Fr.: Almost throughout the year.

Palatability: Palatable; **Loc.: Kota**

Figure: *Isachne globosa* (Thunb.): A. Habitat; B. Inflorescence; C. Spikelets

28. Ischaemum rugosum Salisb. :

Common name: Sara-molla grass, सरमोला

Habitat: Commonly found near moist & marshy habitat.

Description: *I. Rugosum* is a resilient annual that inhabits growing in loose clumps to heights, of 0.5-1.5 m. The species is primarily recognized by the wrinkled texture of the sessile spikelets lower glume, with 4-7 distinct horizontal ribs. The plant produces brown, ovoid grains 2 mm long. The linear leaf blades are 5-30 cm long and 3-15 mm wide, gradually tapering down at the base and sometimes resembling a petiole. Blades have a margin of stiff minute hairs, and may either be smooth or covered with thin hairs on the leaf surface. The spikelets are 4-6 mm long and contain two florets, one sterile and one fertile, the pair lack a rachilla extension between them.

Fl. & Fr.: August – November.
Palatability: Unpalatable
Loc.: Kota

Figure: *Ischaemum rugosum* Salisb.: A. Habitat; B. Leaf blade; C. Enlarged view of inflorescence

29. Iseilema anthephoroides Hack. :

Common name: Erect Musal Grass, गंधेल, पदेडघास

Habitat: Occasionally found in rocky habitat& grasslands.

Description: Tufted annual grass with upright stems originating from a prostrate base, nodes hairless. Leaf-sheaths are 1-2.5 cm; ligule up to 0.5 mm; blades lanceshaped, flat. Panicles are up to 4 cm; spatheoles up to 8 mm. Homogamous spikelet are lanceshaped, to 4 mm. Stalkless spikelets lanceshaped, up to 3.5 mm. Lower glume lanceshaped, up to 3 mm, beaked, 5-nerved, finely velvet-hairy at beak, rough; upper glume to 3 mm, 3-nerved, shortly aristate; lower lemma to 2 mm; upper lemma narrow, to 1.5 mm, awn to 1 cm. Caryopsis ellipsoid, to 2 mm. Salked spikelets are similar to the homogamous spikelet.

Fl. & Fr.: August – November.
Palatability: Palatable
Loc.: Kota

Figure: *Iseilema anthephoroides* Hack.: A. Habitat; B. Inflorescence; C. Spikelets

30. Melanocenchris jacquemontii Jaub. & Spach :

Common name: Desert Black-Millet

Habitat: Occasionally found in rocky habitat.

Description: Tufted, slender annuals, upto 20 cm high. Leaves filiform, convolute, acute, base with whitish, tubercle-based hairs; sheaths covered with scattered, long, tubercle-based hairs; ligule a hairy ridge. Spikes upto 6(-10) cm long, with triquetrous, smooth, flexuous rachis. Clusters of spikelets including the awns upto 8 cm long. green with purplish tinge, 2-flowered. Glumes persistent, elongate-subulate, awn antrorsely barbellate. Lower lemma 3-lobed at the apex, awned. Stamens 3. Stigmas plumose. Caryopsis upto 2.5 mm long, oblong-elliptic, brownish.

Fl. & Fr.: August November.

Palatability: Palatable

Loc.: Kota

Figure : *Melanocenchris jacquemontii* Jaub. & Spach.: A. Habitat; B. Enlarged view of inflorescence (Spikelets).

31. Oryza rufipogon Griff. :

Common name: Red Rice, Wild rice, जंगलीधान, जंगलीचावल

Habitat: Occasionally found in marshy habitat or near water bodies.

Description: Tufted, erect, annual clustered grass, upto 1 m high, with stems spongy below, the lower parts floating and rooting at the nodes, the upper parts sub-erect, stem nodes hairless and hollow. Stems are up to 80 cm high, erect, clustered; nodes hairless. Leaves linear-lanceshaped, base rounded, tip tapering; sheaths to 20 cm long, keeled; ligules ovate, membranous. Panicles effuse, lax. Glumes 2-3 mm long, ovate, unequal. Lemmas ovate-oblong, laterally compressed, 3-nerved, awned; awns 5-10 mm long. Palea 6-10 mm long, oblong. Stamens 6: anthers 2-3 mm long , yellow. Stigmas cream-coloured. Grains are reddish brown, 5-7 mm long, elliptic.

Fl. & Fr.: September–November.

Palatability: Palatable

Loc.: Kota

Figure: *Oryza rufipogon* Griff.: B. Habitat (Inset: Membranous leaf base (ligule); B. Inflorescence; C. Spikelet

32. Paspalum distichum (L.) :

Common name: Knotgrass, Water finger-grass

Habitat: Fairly common in marshy habitats.

Description: Creeping, stoloniferous and rhizomatous perennials, rooting at nodes. Leaves sparsely hairy; ligule short, membranous. Inflorescence consisting of 2-3, one-sided, divaricate racemes; rachis flattened, hispidulous. Spikelets 2-3 mm long, ovate, plano-convex. Lower glume reduced to a small scale; upper one acute, 5-nerved. Lower lemma 3-nerved, glabrous; upper lemma smooth, pallid.

Fl. & Fr.: September – March.

Palatability: Unpalatable

Loc.: Kota

Figure: *Paspalum distichum* (L.): A. Habitat; B. Leaf base; C. Enlarged view of inflorescence; D. Inflorescence

33. Saccharum spontaneum (L.) :

Common names: Wild sugarcane, Kans grass, काँस, मूंज, सरकंडा

Habitat: Common in moist & sandy habitats.

Description: It is a erect, perennial grass, growing up to three meters in height, with spreading rhizomatous roots. Leaves are harsh and linear, 0.5 to 1 meter long; 6 to 15 mm wide. Inflorescence are plumose panicles, which are white and erect, upto50 cm long, with slender and whorled branches, the joints covered with soft white hair.

Fl. & Fr.: August – November.

Palatability: Unpalatable

Loc. Kota

Figure: *Saccharum spontaneum* (L.): A. Habitat; B. Inflorescence; C. Enlarged view of inflorescence

34. Schoenefeldia gracilis Kunth :

Common name: Slender Braid Grass, आरिघास, तलवारघास

Habitat: Common in fallow fields, rocky areas, & grasslands.

Description: Tufted, erect or geniculately ascending annuals, upto 50 cm high. Leaves narrow, linear, acuminate, pilose; ligule hairy. Spikes 2-4, 10-20 cm long, digitate, golden yellow, with closely pectinate, straight, bifarious, awned spikelets. Spikelets 2-4 mm long, subsessile, 1 flowered. Lower glume upto 4 mm long: upper one 3 mm long, ovate lanceolate, aristate, 1-nerved, ciliate at the keel. Lower lemma with a scaberulous awn. Caryopsis c. 2 mm long, linear, with loose pericarp.

Fl. & Fr.: August - November.

Palatability: Palatable

Loc.: Kota

Figure: *Schoenefeldia gracilis* Kunth*:* A. Habitat (Inset: Dry inflorescence); B. Green inflorescence; C. Enlarged view of inflorescence

35. Sehima nervosum (Rottler) Stapf. :

Common names: Rat's tail grass, white grass, सुकई, पवण्याघास

Habitat: Fairly common in rocky areas & grasslands.

Description: It is a perennial grass forming dense tufts with numerous tillers, upto 40- 70 cm height. Culm are erect, hollow, slender, pale straw yellowish and bright on ripening. It has abundant and soft foliage. Leaves are wide, linear leaf blade. Racemes are solitary 5-15 cm long and erector slightly flexed. Both sessile and pedicelled spikelets are awned. The awns are slender and twisted at base. Stamens 3.

Fl. & Fr.: August - November.

Palatability: Palatable

Loc.: Kota

Figure: *Sehima nervosum (Rottler)*: A. Habitat; B. Membranous ligule; C. Inflorescence; D. Enlarged view of inflorescence

36. Setaria pumila (Poir.) Roem. & Schult. :

Common names: Yellow bristle-grass, Cattail grass, छोटी बिल्ली

Habitat: Commonly found near moist & in rocky habitats.

Description: This annual grass grows 20 cm to 70 cm in height, its mostly hairless stems ranging from green to purple-tinged in colour. The leaf blades are hairless on the upper surfaces, twisting, and up to 30 centimetres (12 inches) long. The inflorescence is a stiff, cylindrical bundle of spikelets 2 to 15 centimetres (3⁄4 to 6 inches) long with short, blunt bristles. The panicle may appear yellow or yellow-tinged.

Fl. & Fr.: July –November.
Palatability: Palatable
Loc.: Kota

Figure: *Setaria pumila* (Poir.): A. Habitat; B. Leaf base; C. Inflorescence

37. Setaria verticillata (L.) P.Beauv. :

Common name: Bristly Foxtail, hooked bristle grass, बरचिट्टा, बड़ीबिल्ली

Habitat: Commonly found in sandy clayey soils, particularly along irrigation channels.

Description: Loosely tufted, geniculately ascending or erect grass, 1-2m high, often rooting at the lower nodes. Leaves linear lanceolate, acuminate, narrowed or subauricled, scabrid on both the sides; sheaths striated, compressed, keeled, pubescent; ligule truncate, ciliate. Panicles upto 15 cm long, spiciform, cylindrical to oblong, lobed. Spikelets 2.0-2.5 mm long, enclosed in an involucre; bristles few, each upto 7.5 mm long. Lower glume c. 1 mm long, hyaline, acute; upper one equal to the spikelets, 5 to 7-nerved, obtuse. Lower lemma dorsally compressed, 5 to 7 nerved upper one plano convex, faintly rugulose, coriaceous.

Fl. & Fr.: August – October.

Palatability: Palatable

Loc.: Kota

Figure: *Setaria verticillata* (L.): A. Habitat with green inflorescence; B. Mature inflorescence with seeds

38. Sorghum halepense (L.) Pers.:

Common name: Jhonson grass, वनज्वार, बरू

Habitat: Common in open wastelands & fallow fields.

Description: It is a coarse perennial grass, up to 2 m tall with extensively creeping, fleshy rhizomes which are covered with brown scale-like sheaths, 2 m in length, and often root from the nodes. Inflorescence consists of pendulous panicles, often purple in colour, 25-45cm long, and 3-15cm wide which open when mature. The spikelets are borne in pairs along the branches (with the terminal spikelet being a triplet). The lower sessile spikelet contains the seed. The upper spikelet is pedicellate and is narrower than the lower spikelet. The grain is oblong-ovate and 2-3 mm long.

Fl. & Fr.: September – December.

Palatability: Unpalatable

Loc.: Kota

Figure: *Sorghum halepense* (L.): A. Habitat; B. Inflorescence; C. Enlarged view of inflorescence.

39. Tetrapogon tenellus (Roxb.) Chiov. :

Common name: Tender finger grass, TP grass, टिपीघास

Habitat: Fairly common throughout rocky & sandy habitats.

Description: Tufted. Erect or geniculately ascending annual grass upto30 cm high. Leaves linear lanceolate, acuminate, ciliate. Spikes 3-7 cm long, solitary or paired. Spikelets 5-6 mm long, 4 to 6 (8) flowered, bifarious, 3 awned. Giumes unequal 1- nerved, hyaline, broadly cuneate, acute. Lowest lemma c. 5.5 mm long. Obovate, awned. Grains 1-2 mm long, oblong, brownish.

Fl. & Fr.: July – November.

Palatability: Palatable

Loc.: Kota

Other information: Unmistakable in the field due to the fish-bone like appearance of its spikelets. Since did not have a specific local name, the local field friends started using the botanical name and too know this plant as 'TP' coming from the generic name *Tetrapogon*.

Figure: *Tetrapogon tenellus* (Roxb.): Habitat & Inflorescence.

40. Themeda quadrivalvis (L.) Kuntze. :

Common name: Kangaroo Grass,गुंदेल

Habitat: Common in rocky habitats.

Description: Kangaroo Grass is a tall, erect, geniculately branched, clustered perennial grass that is very variable in appearance and size, ranging from 0.3-1.5 m in height. Plants from higher altitudes tend to be shorter and dark purple, whereas, at lower altitudes, plants are often lighter coloured and flushed only with purple. The basal parts of the cluster are usually compressed. The wedged-shaped, often pendant clusters of spikelets are surrounded by leaf-like spathes or bracts that are brown or reddish brown and are often flushed with mauve, purple or red. The spikelets are also awned, that is, have long stiff bristle-like projections.

Fl. & Fr.: September – November.
Palatability: Palatable
Loc.: Kota

Figure: *Themeda quadrivalvis* (L.): A. Habitat; B. Inflorescence; C. Dry inflorescence

41. Urochloa deflexa (Schumach.) H.Scholz. :

Common name: Deflexed Signalgrass, Deflexed Brachiaria, चिडीचावल

Habitat: Occasionally found in moist-shady habitats.

Description: Losely tufted annual; culms 15-70 cm high, often weak and ascending. Leaf blades broadly linear, wide. Inflorescence of 7-15 racemes borne on an axis 6-15 cm long; racemes 2-9 cm long, often compound, bearing mostly paired distant spikelets spreading from the triquetrous rachis, the inflorescence imitating a panicle; pedicels, or some of them, longer than the spikelets, up to 15 mm long. Spikelets broadly elliptic, 2.5-3.5 mm long, glabrous to pubescent, acute, with a short stipe up to 0.5 mm long; lower glume a third to half the length of the spikelet; upper glume and lower lemma membranous; upper lemma rugose, subacute to acute.

Fl. & Fr.: July-October.

Palatability: Palatable

Loc.: Kota

Figure: *Urochloa deflexa* (Schumach.): A. Habitat; B. Leaf base; C. Enlarged view of inflorescence

GLOSSARY

Acuminate: With sides curving inwards and terminating into a fine tapering point.

Bristles: Thick hair-like structures.

Callus: Formation of a hard tissue.

Caryopsis: One-seeded fruit of the grass family.

Ciliate: Having fringe of hair-like structures.

Connate: United, merged or fused parts.

Cyperaceae: The sedge family.

Digitate: Like fingers of our hands, usually with 3-7 branches.

Dorsal view: An object as viewed from the top.

Ellipsoid: Can be imagined as a compressed sphere.

Emarginate: Having a notch.

Fertile spikelet: A spikelet with all the essential reproductive parts and develops a seed.

Filiform: Thin and slender, like a thread.

Floret: Flower without glumes (with lemma, palea, androecium, gynoecium).

Glabrous: Smooth, without hair.

Glumes: Outermost floral parts (bracts) of the grass flower, can often be modified or reduced or ornamented.

Hispid: With rough and stiff hair.

Incurved: Curved inwards.

Inflorescence: A group of flowers on a plant (a flower head), also used to refer to the arrangement of flowers.

Involucre: A whorl surrounding the spikelet/s, often with bristles/hair-like structures.

Keel: A prominent ridge along a flat surface.

Lanceolate: Oval and tapering at both the ends.

Lateral view: An object as viewed from the side.

Lemma: Part of the grass flower, often with a pointed awn.

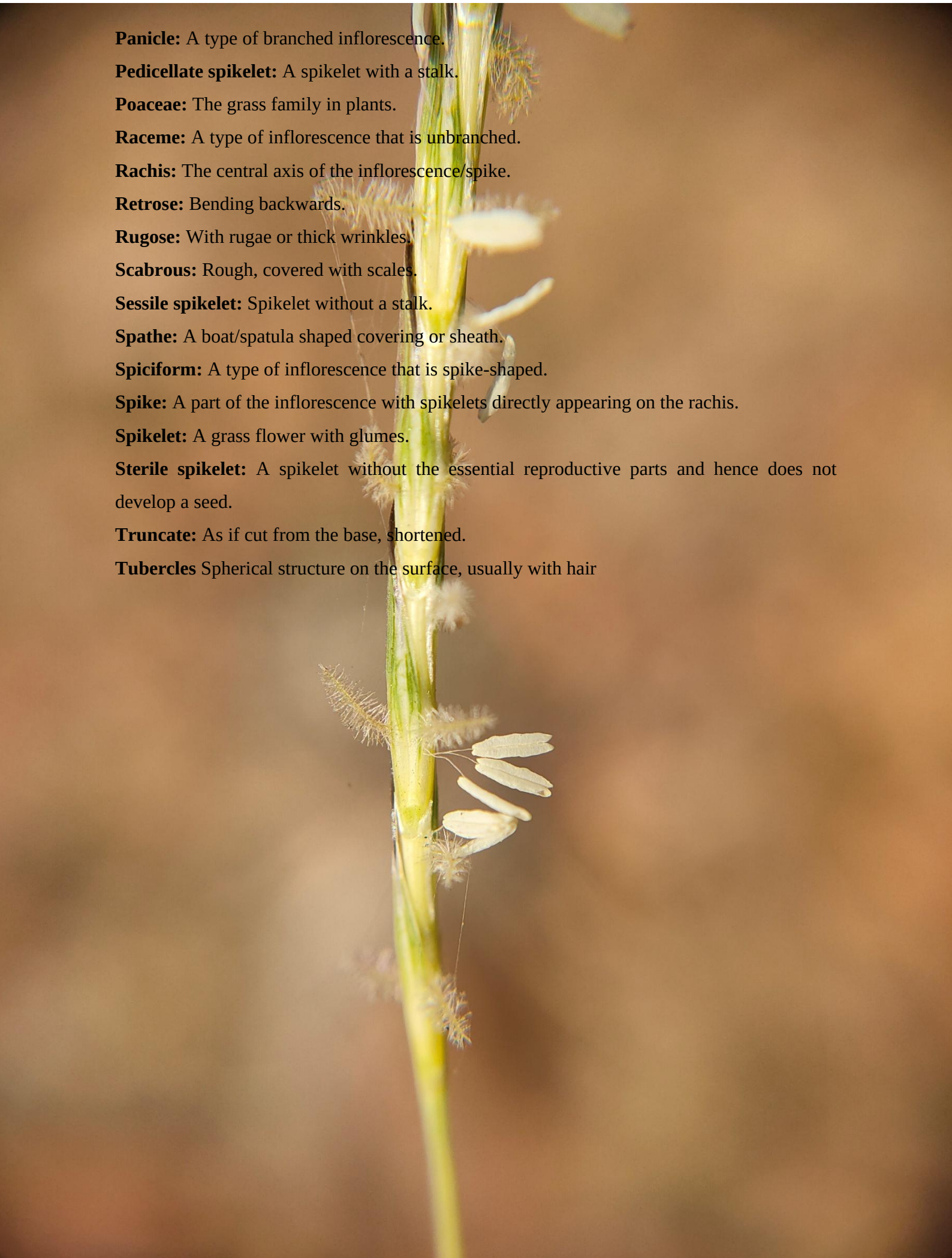
Ligule: The rim of the leaf sheath at the point where it meets the stem, usually with a rim of hair-like structures.

Mucronate: Sides curved sharply inwards and ending abruptly into a sharp short point.

Node: Joint between two internodes.

Oblong: Rectangular with all four ends rounded.

Palea: Part of the grass flower, often membranous.



Panicle: A type of branched inflorescence.

Pedicellate spikelet: A spikelet with a stalk.

Poaceae: The grass family in plants.

Raceme: A type of inflorescence that is unbranched.

Rachis: The central axis of the inflorescence/spike.

Retrose: Bending backwards.

Rugose: With rugae or thick wrinkles.

Scabrous: Rough, covered with scales.

Sessile spikelet: Spikelet without a stalk.

Spathe: A boat/spatula shaped covering or sheath.

Spiciform: A type of inflorescence that is spike-shaped.

Spike: A part of the inflorescence with spikelets directly appearing on the rachis.

Spikelet: A grass flower with glumes.

Sterile spikelet: A spikelet without the essential reproductive parts and hence does not develop a seed.

Truncate: As if cut from the base, shortened.

Tubercles Spherical structure on the surface, usually with hair

INDEX Page No.

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NOTES


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