Grasses and their Varieties in Indian Literature

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Abstract
Grasses have been widely distributed all over the planet. They have been in use for various purposes since time immemorial and held sacred by our ancestors. Although grass is a general term there are several species that are still not recognized by the common man. Even astounding is that the efficacy and special uses of grasses unknown to us are discussed widely in ancient Indian texts. The present article tries to bring out the different grasses mentioned in these texts. It would be good to study, identify, and research the uses of these grasses as given in these texts.

Grasses occupy wide tracts of land in the world. They occur in all types of soil and under all climatic conditions. The grass family exceeds all other plant classes in its economic value and service to man and animals. Recognition of various types of grass and their uses have come down from immemorial times of humanity. The grass family (Gramineae) comprises of more than 10000 species of different grasses classified broadly under two series – Panicaceae and Poaceae (Dabadghao and Shankaranarayan, 1973). Grasses are great survivors, toughest, able to withstand being burnt, frozen, drowned, parched, grazed, or trampled upon, and regenerate fast. The values of grasses have been revered by ancient civilizations all over the world.

Grasses in the Vedas
From Vedic times, grass has been upheld to be most sacred that it was used for various purposes. Grass was used to construct an altar (Vedi), to make seat, used as amulets or charms, for religious ceremonies and so on. Ancient sages have identified several types of grasses. The Rigveda (RV) identifies several types of grasses giving their qualities and uses (Arya and Joshi, 2005). Some of them are:

- **Darbha (Imperata cylindrica)**: It has two varieties – Kharadarbha (Desmostachya bipinnata) and Mridudarbha (Eragrostis ciliaris) (RV 1.191.3). The Atharvaveda (AV) cites that its efficacy is to calm anger (AV 6.43); it is rich in roots, has 1000 leaves and 100 stalks (AV 19.32.1). It is identified with Soma as king of plants (AV 8.7.20). Botanically it has been found that it is the hardiest grass whose roots penetrate deep up to 5 feet.

- **Kusha (Desmostachya bipinnata)**: It is termed as kushara (RV 1.191.3) and is generally equated with Kharadarbha.
Grasses in Indian literature

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- **Durva** (*doorva; Cynodon dactylon*): It grows on damp ground and is a species of bent grass (RV 10.16.13, 10.134.5).
- **Ulapa**: It is referred in RV 10.142.3 and AV 7.66.1.
- **Kasha** (*Saccharum spontaneum*): It is used for mats (RV 10.100.10).
- **Sara** (*Saccharum sara*): It is referred in RV 1.191.3 and AV 4.7.4. It is a reed generally used for making arrow shafts.
- **Shashpa** (young sprouting grass): It is referred in Yajurveda Samhita (YV) (19.13.81).
- **Balvaja** (*Eleusine indica*): Baskets are made out of it (RV 8.55.3). It is also referred in AV 14.2.22.
- **Sairya**: It is mentioned in RV 1.191.3. It is a species of grass infested by insects.
- **Sada**: It is referred in RV 9.15.6 and YV 25.1. It is a special species.

There are some other species of grass identified and glorified by other Vedic texts like the *Brahmanas* and *Samhitas*. Most of these are found in *Taittiriya Brahmana* (TB), *Shatapatha Brahmana* (SB), *Aitareya Brahmana* (AB), *Taittiriya Samhita* (TS), *Maitrayani Samhita* (MS), and *Kathaka Samhita* (KS). They are:

- **Sugandhitejana** (fragrant grass): AB (1.28.28), SB (13.5.2.17), TS (6.2.8.4)
- **Veerana** (*Andropogon muricatus*; syn. *Vetiveria zyizaniodes*): SB (13.8.1.15)
- **Balvaja** (*Eleusine indica*): SB (14.1.3.11), TS (2.2.8.2), KS (10.10), MS (2.2.5)
- **Gavedhuka** (*Coix barbata* or *Coix lacryma-jobi*): SB (14.1.2.19)
- **Munja** (*Saccharum sara*): TB (3.8.1.1.), SB (6.6.1.23), TS (5.1.9.5)
- **Isheeka** (reed grass): SB (4.3.4.16), TB (3.8.4.3)
- **Barhis** (sacrificial grass): SB (1.9.2.29)
- **Ashvavala** (*Saccharum spontaneum*): SB (3.4.1.17)
- **Shumbala** (straw): Harisvamin’s commentary of SB (12.5.2.3)

Grasses in the epics and Puranas

Sage Valmiki in his Ramayana mentions grass in several contexts used as seat for sacred purposes (1.3.2) and as a charmed missile (5.38.29). He also mentions *kusha* grass used for rituals (3.15.5) and for thatching cottages at Panchavati along with *kasha* and *shara* (3.15.22). Tulasidas in his Ramayana states that Devi Sita speaks to Ravana after holding a straw as a screen in between.

Trinadhari ota rahata vaidehi
Many varieties of grass and their uses are extoled in several Puranas. An additional feature in Puranas is that the efficacious values of various grasses are mentioned. Some of these are:

- **Damanaka** (*Phragmites karka*): Skandha Purana (II.2.38.13) mentions this grass sprung from a place where a demon of the same name was killed by Lord Vishnu.

- **Darbha** (*Imperata cylindrica*): The Skandha Purana (VI.221.46) mentions that they are a must for Shraddha (ritual of manes). The Garuda Purana (II.19.19) also mentions that the Trinity dwell in the blades of darbha. Agni Purana (266.12) states that darbha should be used in initiation and other rituals.

- **Doorva**: The Vamana Purana (18.9) mentions two varieties of this grass – white and dark based on shades of green. The Garuda Purana (I.131.1-2) extols the virtues of worshiping this grass in Shukla Paksha of Bhadrapada as Doorvashtami. This is also upheld by Bhavishya Purana.

- **Kusha** (*Desmostachya bipinnata*) and kasha (*Saccharum spontaneum*): Brahma Purana (219.41) says that these grasses have been ‘born’ from body hairs of Lord Vishnu for protection of Shraddha (ritual of manes).

- **Balvaja** (*Eleusine indica*): Vayu Purana (75.51-52) states that this species is not liked by cattle.

- **Varana, lava, and lavavarsha**: Species of grass quoted in Vayu Purana (75.51-52); it is also mentioned that these grasses are progeny of Valli, daughter of Ira (69.338-341).

### Grasses in post-Vedic literature

Several *kavyas* in the Vedas, epics, and Puranas have immense references to the species of grasses. Kalidasa in his *Ritusamhara* (I.25, VI.25, III.1) refers to the various grasses darbha, doorva, niladoorva, kasha, kusha, and shara. Mudrarakshasa quotes the kasha grass.

The Sushruta Samhita (Sutrasthana, 38) refers to several grasses like darbha, doorva, kasha, kusha, and shara. Some additional grasses mentioned by Sushruta in Sushruta Samhita are:

- **Dhyamaka** (*Andropogon lamgier*): Used in treating vayu and kapha doshas (38.12).

- **Gundra** (*Typha angustifolia*; syn. *T. elephantina*): Known as elephant grass and used in treating urinary diseases (37.3).

- **Musta** (*Cyperus rotundus*): Known as nutgrass (10.3, 38.13, 38.26).

- **Usheera and nalada** (*Andropogon muricatus*; syn. *Vetiveria zizanioides*): Known as Cuscus grass (38.12).

The *Ashvavaidyaka* of Jayadatta dated to 15th century AD states that a vicious horse is to be fumigated with the fragrant grass khus (*Andropogon muricatus*; syn. *Vetiveria zizanioides*). Likewise an entire list of grasses to be given to elephants is enlisted in the *Yavasadhyaya* of Palakapya’s *Hastyavurveda* (IV.24ff). The text identifies several types of grasses eaten by elephants.
some of which grow in the wild. An attempt is made below to identify these grasses with available data.

**Verses 24–27a**

Trinavastha maharaja vijantavya vicakshanaih | surabhi kuruvinda va pramoda shvetapatrika| mridushunti kareeram cha tatha vanarapucchika| sauvastika vicitika tathalohitapatrika| rasadani giritrinam tatha parnaguha rasa| etanimadhuranyahurvipe katukani cha| vatakopeeni bhuyishtam shleshmapittaharani cha|

The grasses surabhi (fragrant grass – *Boswellia serrata*), kuruvindam (*Vigna mungo*), pramoda (*Lennea grandis*), shvetapatrika (*Pistica stratiotes*), mridushunti (*Zingiber officinale*), kareeram (*Capparis aphylla*), vanarapucchika (*Heteropogon contortus* or *Perotis latifolia*), sauvastika (may be *Sauveerika* meaning a variety of *kshudrabardaribhedah* – Madanapala Nighantu V.6; or vastuki meaning shvetacillishakah according to *Rajanighantu* V.7), vichitika, lohitapatrika (*Leptochloa filiformis* or *shalincashaka*), rasadani (*Boswellia serrata* or *rasonirgundi* according to *Vaidya Nighantu*), giritrinam (hill grass), parnaguha (grass of caves), and rasa (*Boswellia serrata*) are sweet and bitter on drying. They remove vata, shleshma, and pitta disorders.

**Verses 27b–30a**

Girikakshi vamshapatri nrityakandi tathaiva cha| icchahu gankapatri ca trinapallavikapi cha| arjunashcopalam caiva dandashhookapramodakah| trinaparnamritashchaitva tatha kakaparooshaka| etani madhuranyahurvipe tu manishinah| pittashleshmaanilartebhyo vaaranebhyo pradeeyate|

The grasses namely girikakshi (may be girinimba according to *Vaidya Nighantu* or *Balamushika* according to *Amarakosha*), vamshapatri (*Coccinum fenestretum*), nrityakandi (*Coriandrum sativum*), icchagu (may be icchuka meaning matulunga vriksha according to *Shabdachintamani*), gankapatri (*Triticum sativum*), trinapallavika (*Striga asiatica*), arjuna (*Terminalia arjuna*), upalam (sharkaraaluka according to *Medinikosha* or *dadrughnavriksha*), dandashooka (*Bambusa arundinacea*), pramodaka (*Lennea grandis*), triparna, amrita (*Cynodon dactylon*), and kakaparushaka (*Clanthus puniceus* alba) are sweet and remove disorders of pitta and shleshma in elephants.

**Verses 30b–35a**

Ardrapatri marubakam joornamarthavibhanjikam| sthalajam raktadandam cha kumpalaamschaiva patrikam| kanyurvarakalonikakarenu supacheetrinam| suparnavarivellam cha kasham kushatrinam tatha| ulukhalam pratirasam tatha pucchakameva ca| purusham varasomam cha tathaiva charupatrikam| sutam cha bilvashciva cikkini raktakundakam| rookshani madhuranyahurvipe katukani cha| vatakopeeni bhuyishtam shleshmapittaharani cha| etajjangalamuddishtam trinajaatamasamshayam|

**Verses 24–27a**

Trinavastha maharaja vijantavya vicakshanaih | surabhi kuruvinda va pramoda shvetapatrika| mridushunti kareeram cha tatha vanarapucchika| sauvastika vicitika tathalohitapatrika| rasadani giritrinam tatha parnaguha rasa| etanimadhuranyahurvipe katukani cha| vatakopeeni bhuyishtam shleshmapittaharani cha|

The grasses surabhi (fragrant grass – *Boswellia serrata*), kuruvindam (*Vigna mungo*), pramoda (*Lennea grandis*), shvetapatrika (*Pistica stratiotes*), mridushunti (*Zingiber officinale*), kareeram (*Capparis aphylla*), vanarapucchika (*Heteropogon contortus* or *Perotis latifolia*), sauvastika (may be *Sauveerika* meaning a variety of *kshudrabardaribhedah* – Madanapala Nighantu V.6; or vastuki meaning shvetacillishakah according to *Rajanighantu* V.7), vichitika, lohitapatrika (*Leptochloa filiformis* or *shalincashaka*), rasadani (*Boswellia serrata* or *rasonirgundi* according to *Vaidya Nighantu*), giritrinam (hill grass), parnaguha (grass of caves), and rasa (*Boswellia serrata*) are sweet and bitter on drying. They remove vata, shleshma, and pitta disorders.
Grasses such as ardrapatri (Zingiber officinale), marubakam (Marjorana hortenis), joornam (Sorghum vulgare), vibhanjika and those that are sthalaja grasses such as raktadanda, kumpala (may be kushmanda – Benincasa hispida), patrika (Borassus flabellifer), kangu (Panicum miliaceum or kaigu grain according to Amarakosha), varaka (Panicum miliaceum), lonika [Portulaca oleracea or Patrashaaka variety according to Bhavaprakasha (Poorna Bhaga), karenu (probably a poisonous plant known generally as karnikaphalam; a special plant in Sushruta Samhita Cik.30.5), supacheetrina, suparna (Wattakaka volubilis or nagakesaravriksha according to Paryayamuktaivali), vaarivella (vaarivalli meaning Kaarivella according to Madanapala Nighantu; kaarivella meaning kathillakavriksha according to Hemacandra), kasha (Saccharum spontaneum), kusha (Desmostachya bipinmata), ulukhala (Commiphora wightii), pratirasa, pucchaka (langoolam according to Amarakosha; or may be badarivriksha according to Paryayamuktaivali or mashaparni according to Vaidya Nighantu), purusha (Calcothamium inophyllum), varasomam (probably Solanum nigrum and Pierocarpus santalimus), charupatrika (Prumes puddum), sutam (Salvina cucullata), bilvaja (Aegle marmelos), cikkiini (Centipeda orbicularis), and raktakundaka (red variety of Iscoemum pilosum or Crocus sativus or Nerium indicum) are dry, sweet, and remove disorders of vata, shleshma, and pitta in elephants. They are mostly found growing in Jangala regions where there is little water and grass while heat is more).

**Verses 35b–39**

_A np aj am p r a v a k s h y a m i rasadoshaavipakata|| shyamakam joornapadam cha shilpikam karabhitrinam| tilaparni manjarika mahamridulika tatha|| mahashyamakamevatha tathaiva shakatatinam|| prashantika manjarika ikshuparni nalastatha|| shlakshnakarapara caiva tatha parushapatrika|| peethakaaragaladukam kalaayam shatapatika|| mritaveerakapatri cha tatha meshavishanika|| guccham trinam shlakshnaguchham tatha chaivekshuadalia||

Now narrating the grasses that grow in _Anupa_ tract (low-lying regions abounding in water and marshy plants like canes, bamboos and so on) such as shyamakam (Panicum frutescens), joornapadam (Sorghum vulgare), shilpika (known as kareya shimpige in Kannada) _kaarabhitrina_ (Peucedanum graveolens), _tilaparni_ (Cleome gynandra or shriveshtam according to Rajanighantu), _manjarika_ (Indigo paurifolia or Aloe barbadensis), _mahashyamakam_ (Ichncarpus frutescens), _shakatatinam_ (Anogeissus latifolia or dhavavriksha according to Ratnamala), _prashantika_ (Ocimum basilicum), _mahamridulika_ (Indigo paurifolia or Aloe barbadensis), _mahashyamakam_ (Ichncarpus frutescens), _shakatatinam_ (Anogeissus latifolia or dhavavriksha according to Ratnamala), _prashantika_ (Ocimum basilicum), _ikshuparni_ (leaves of sugarcane), _nala_ (reed – _Phragmites_)

_The Ashvayaidyaka of Jayadatta dated to 15th century AD states that a vicious horse is to be fumigated with the fragrant grass khus._
Grasses in Indian literature

roxburghiii), grasses which are smooth, parushhaapatrika (Grewia asiatica), pitha (Boswellia seratta), kaarala (probably Hyoscyamus niger), gudaka (molasses rich medicine according to Paribhasha Pradeepa), Kalaya (a variety of rice or gandadoorva according to Vaidya Nighantu), shatapatrika (Rosa centifolia), mritaveerakapatri (Cannabis sativa), meshavishanika (Cassia auriculata or Daemia extensa), guccha (Samadera indica or Ruta graveolens), Shlakshnaguccha (soft variety of the guccha grass), and ikshuchaalika (Asteracantha longifolia).

The text also highlights the efficacies of grass. Grass quenches thirst, is satisfying, nourishes the mind, strengthens grahani (place of Agni), helps in equalizing imbalance of the three doshas as well as of blood, and nourishes the organs of sense. It states that in the rainy season one should feed elephants with the Sthalaja variety of grasses, in cold season those of Jangala and Sthalaja varieties, in autumn one should feed them with grasses of marshy regions, in spring with grass and bitter kashayas, in summer with molasses and ginger with grass.

Another Tamil work, attributed to Gorakhar, disciple of Machindrar (Matsyendranatha) mentions a fluorescent grass Jyotiphul that turn’s cow milk red when immersed in it (Venkatarajan, 1960).

Some special uses of grasses

Some strange uses of special grasses are found in Sage Bharadwaja’s texts Vaimanika Shastra and Amshubodhini Shastra. In the Vaimanika Shastra (Josyer, 1973), he quotes an ancient text Ashana Kalpa under Sutra 12 stating:

Doorvashtakam munjashtakam kushashatam tathaiva hi

(For food) there exists six kinds of durva grass, six kinds of hemp, and six kinds of kusha grass.

Strangely the Vaimanika Shastra also mentions various uses of grass in making equipment for aeroplanes. Some of them are:

- Munja and darbha grass used in preparation of artificial cloth Pataprasarana yantra as quoted in an ancient text Kriyasara.
- Kusha grass, about 38 parts, used in making a special artificial crystal called shabdaphenamani.
- Kuruvinda – Used in preparation of a special mud glass Sunda quoted by Parthiva Pakalpa.
- A special grass jambalika used to make an anti-lightning glass and for a crystal rucikamani.
- A special grass trinaiga used in making cold proof glass stated by Darpana Prakarana.
- Acid made from grass trinottpanadravaka used in electric yantra (instrument) of Sundara vimana.

The Amshubodhini (Sharma, 1931) also quotes that a salt was extracted from white variety of doorva grass.
Quoting, another text Yantrasarvasva, Sage Bharadwaja also describes construction of an equipment (*Indrani yantra*) out of grasses. Under this section it refers to various classes of grass, thus indicating that there was an elaborate identification and classification process of grasses. It states that the 3rd, 9th, 11th, 22nd, 30th, and 42nd classes of grass are known as *Pishangamunja*, *Pingalamunja*, *Rajjumunja* and so on. However the nature of these grasses is unknown.

**Grasses in pre-modern literature and culture**

Several varieties of grasses have also been recorded in the various folk literature, travel diaries, and memoirs of different European travelers who visited India. Of these some special types of grasses have been discussed below. Van Rheede’s “Hortus Malabaricus” (Manilal, 2003) mentions about *camapullu* (*Leptochloa malabarica*) that is eaten during times of scarcity or famine. The Kondh tribe of Orissa use the grass *jaragade* (*Coix lacryma-jobi*) as sacred food and China grass (*cheena*; *Panicum miliaceum*) as food in marriage (Pal, 1986). The Hos and Birhors have legends as to origin of *sabai* grass (*Ischeamum angustifolium*) while the Baiga tribe has legends of spear grass (*Andropogon contortus*) and thatching grass. The “Memoirs on History, Folklore and Distribution of the races of North Western Provinces of India” records several species of grass known by vernacular names (Henry, 1869) (Table 1).

In Tamil literature some special annual grasses such as *kuruthupullu* (*Chloris barbata*; feather finger grass), *nassamplellu* (*Panicum antidotale*; blue panic grass), *kuduraival pullu* (*Perotis indica*; Indian comet grass), *amaripullu* (*Setaria verticillata*; bristly foxtail grass) and some perennial grasses like *iravanpullu* (*Spinifex littoreus*) are mentioned.

Other Ayurvedic lexicons and texts recognize annual grasses such as *venupatrika* (*Opismenus burmannii*; wavy leaf basket grass), *canikatrina*, *vrittagundatrina*, *panyandhaatrina*, *karpooratrina* (*Cymbopogon flexuosus*), *jambeeratrina* (*Cymbopogon citratus*), *markatahastrina* (*Dactyloctenium aegyptium*) and perennial grasses like *niladoorva* (*Cynodon dactylon*), *chorapushpi* (*Chrysopogon aciculatus*), and *garmotika* (*Coix gigantica*; aquatic Job’s tears).

**Conclusions**

From the above discussion it is clear that the identification and study of grasses was known from ancient times. Although grass may seem to be insignificant compared to the large trees, fruit and flowering species, it remains a wonderful biological study involving the process of identification, its medicinal and other uses and its significance in religious customs. Some of the grasses mentioned in ancient literature still remain unidentified because of lack of these names in well known *Nighantu* and lexicons. Especially the grasses mentioned in the texts of *Palakapya’s Hastyayurveda* and the uses of grass in Sage Bharadwaja’s texts do deserve much attention as they portray the rich scientific knowledge
Grasses in Indian literature

Further research on various grasses in other ancient literature such as the vast poetical and Ayurvedic texts in various regional languages may give us a wonderful database of the grass knowledge prevalent in India. Knowing this one must appreciate and try to conserve these rich species of the home land before they are long lost to future generations.

Table 1. Grasses in North Western Provinces of India.

<table>
<thead>
<tr>
<th>Vernacular name</th>
<th>Uses and qualities</th>
<th>English name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bekas</td>
<td>Fodder for horned cattle; injurious to horses</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Bhada</td>
<td>Kind of grass in poor soil</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Bisakhapara</td>
<td>Grass used in medicine</td>
<td><em>Trianthema pentandra</em></td>
</tr>
<tr>
<td>Banacari</td>
<td>High jungle grass</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Ciracitta</td>
<td>Grass resembling young <em>bajra</em> (<em>Pennisetum glaucum</em>); one does not feel hungry for 21 days after eating it</td>
<td><em>Setaria verticillata</em></td>
</tr>
<tr>
<td>Gandara</td>
<td>Thatching grass</td>
<td><em>Andropogon muricatus</em></td>
</tr>
<tr>
<td>Gadichata</td>
<td>Grass growing with <em>darbha</em>, three times larger</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Gandhela</td>
<td>Sweet smelling grass</td>
<td><em>Andropogon muricatus</em></td>
</tr>
<tr>
<td>Ganela</td>
<td>Long species of thatching grass</td>
<td><em>Avena fatua</em></td>
</tr>
<tr>
<td>Gargava</td>
<td>Checks growth of rice fields; buffaloes fond of it</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Jhojharu</td>
<td>Known as wild indigo; eaten by camels</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Jharava</td>
<td>Nutritious grass for cattle to improve milk quality</td>
<td><em>Panicum crusgalli</em></td>
</tr>
<tr>
<td>Jaraga</td>
<td>Fodder especially for horses</td>
<td><em>Andropogon annulatus</em></td>
</tr>
<tr>
<td>Janeva</td>
<td>Fragrant grass cultivated with <em>kharif</em> crops</td>
<td><em>Andropogon ischaemum</em></td>
</tr>
<tr>
<td>Gojha</td>
<td>Thorny grass used as medicine</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Ganteela</td>
<td>Knotty grass</td>
<td><em>Eleusine flagellifera</em></td>
</tr>
<tr>
<td>Saravala</td>
<td>Head bearing grass</td>
<td><em>Heteropogon contortus</em></td>
</tr>
<tr>
<td>Palava</td>
<td>Large straw</td>
<td><em>Andropogon pertusus</em></td>
</tr>
<tr>
<td>Girjee</td>
<td>Grass that grows one yard high</td>
<td><em>Andropogon foveolatus</em></td>
</tr>
</tbody>
</table>

Grass quenches thirst, is satisfying, nourishes the mind, strengthens *grahani* (place of Agni), helps in equalizing imbalance of the three doshas as well as of blood, and nourishes the organs of sense.

Especially the grasses mentioned in the texts of Palakapy’s Hastyayurveda and the uses of grass in Sage Bharadwaja’s texts do deserve much attention as they portray the rich scientific knowledge known to our ancient seers.
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