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Documentation of grass species of Alamatti Hill Range Vijayapur district of Karnataka, India

Arati Laddimath ^{1*}, Prashanth PKM ²

^{1,2} Department of Botany, Karnataka State Akkamahadevi Women's University, Vijayapur, Karnataka, India

* Corresponding Author: Arati Laddimath

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Abstract

Grass species research survey of Alamatti hill range, Vijayapur district of Karnataka conducted during March 2018 to March 2022. The purpose of this survey was to document the grass species. There are about 115 species of grasses belonging to 56 genera and 4 families were documented. Utility of grasses documented.

Keywords: Grass species, Alamatti hill range, Vijayapur, Karnataka

Introduction

Grasses are widely distributed on earth; they occupy nearly 24% of the geographical area in India. In India 268 genera and 1200 species of grasses found. Grasses comprises families like poaceae (grasses), cyperaceae (sedge), juncaceae (rushes) and typhaceae (typha). Poaceae is fifth largest family in angiosperms. Grasses has good resistance power and adaptations. Grasses are important for grazing animals like cattle, horse, buffalo and sheep. Many birds consume grains of grasses. Grasses provide shelter for frogs, insects, snakes and lizard for breeding purpose. These are dominant grasses in Alamatti. Grasses are used in many ways in Vijayapur district, preparing households like brooms, huts preparation, ropes, stuffing for pillows, mat, board, brushes, thatching. Sugar is obtained from wild sugarcane, ornamental, And also important for medication.

Materials and Methods

Survey of grass study conducted on March 2018 to March 2022 in Alamtti, Vijayapur district. Grass species were photographed in the field. The voucher specimens and the grass seeds are preserved for conservation and to maintain biodiversity. The seeds of Grasses collected season wise and stored at the herbarium centre, Department of post graduate studies and Research in Botany, Karnataka State Akkamahadevi Womens University, Vijayapur.

Voucher specimen collection and identification

Collected data and information include, scientific name, family, vernacular name, utilization, habit. Grass species were photographed in the field. Grass specimens were identified, by referring Flora of Gulbarga District^[4], three volumes of the Flora of Presidency of Madras^[3], Flora of Bombay^[8], Flora of Eastern Karnataka^[6]. The voucher specimens were stored at the herbarium centre, Department of post graduate studies and Research in Botany, Karnataka State Akkamahadevi Womens University, Vijayapur.

Study Area

Alamatti is a small village in Basavan bagewadi taluk in Vijayapur district of Karnataka state, India. A major dam has been constructed across the Krishna river Alamatti. Alamatti dam is also known as Lal Bahadur Shastri dam.

It is a Hydrolytic project on the Krishna River in North Karnataka. Krishna River is the fourth biggest river in terms of water inflows. The river is almost 1288 kilometers long. The Alamatti dam is the main reservoir of the Upper Krishna Irrigation Project, the 290 MW power stations is located on the right side of the Alamatti Dam. The facility uses vertical Kalpan turbines. It is one of the major source of irrigation for Maharastra. Alamatti is occupied by three types of soils wiz, black soil, red sandy soils and mixed soils. The soil of Alamatti area is rich in content of basalt rock, magnetite,

magnesium, aluminium and iron oxide. The temperature varies between 42° c during summer and 15°c winter season respectively. In May month mean maximum temperature is 40°c. Alamatti is consists of the dry and arid tract of the Deccan Plateau. The climate of this region is arid, tropical and steppe type. The Alamatti receives normal rainfall 578.0 mm and the vegetation of this region is mainly dry and deciduous and may broadly as vegetation on plains. The natural vegetation near Alamatti Dam area is like dry and hot having rich flora.



Fig 1: Map of the study area



Fig 2: Alamatti

Results

In the present research survey account, there are about 115 species of angiosperms belonging to 56 genera and 4 families of grass species were reported. The predominant family is poaceae with species, poaceae is dominant family contributing 96 species (83.47 %) of these. Family cyperaceae is leading with 15 species (13.04 %) followed by Juncaceae with 2 species (1.73%) and Typaceae with 1 species (0.869 %). Analysis of habit shows that herb is predominate with 108 species (93.91%), followed by shrubs with 7 species (6.08%). No trees found in this region. There is no grass trees found in this region. Data obtained from the

survey is compiled in Table 1. All grass species scientific name, family, vernacular name, time of availability, utility are provided.

Discussion

Singh, Documented 364 grass species in Karnataka state [5]. Chugh documented 64 grass species in Shriganganagar dist of Rajasthan [2]. Upase studied grasses of Gulbarga dist [8]. Arati Laddimath studied Wild Edible Plant species of Alamatti Hill Range and Sub-regions [1], Dist Vijayapur, Karnataka, but grass species study has not been reported till in Alamatti.

Table 1: Wild edible plant species of Alamatti hill range and sub regions, Vijayapur dist

S. No	Scientific name	Family	Local/ Vern name	Time of availability	Habit	Utility
1.	<i>Andropogon pumilus</i> Roxb	Poaceae	Gondawal	January to April	H	Used as fodder
2.	<i>Apluda mutica</i> L.	Poaceae	Oobina hullu	August to December	H	Good fodder especially for buffaloes when young and green
3.	<i>Aristida adscensianis</i> L.	Poaceae	Ooba	October to December	H	Mainly used as fodder though its nutritive value quickly declines as it matures.
4.	<i>Aristida funiculata</i> Trin. Et Rupr.	Poaceae	Trishula oobina hulla	December to February	H	Used as forage
5.	<i>Aristida setaceae</i> Retz.	Poaceae	Kasbergi hulla	November to December	H	Inflorescence is used to prepare broom
6.	<i>Aristida kenyensis</i>	Poaceae	Khadda	November to December	H	Ecologically good indicator of over grazing.
7.	<i>Aristida purpurascens</i> vel aff.	Poaceae	Ooba	January to April	H	Rare grass, leaves used as fodder.
8.	<i>Axonops compressus</i>	Poaceae	-	April to June	H	Broad leaf carpet grass used for grazing specially in plantation crops, good lawn grass.
9.	<i>Bolboschoenus maritimus</i> (L.)Palla	Poaceae	-	March to May	H	Fodder
10.	<i>Bothriochloa bladhii</i> (Retz)	Poaceae	Thurikaddi Jenukaddi	April to July	H	Fodder

11.	<i>Bothriochloa insculpta</i> (A. Rich.) A. Camus	Poaceae	Thurikaddi	May to July	H	Leafy forage crop that can grow, it can be cut to make good quality hay.
12.	<i>Bracheria dichotomiflorum</i>	Poaceae	-	April to July	H	Used as forage.
13.	<i>Bracheria deflexa</i> (Schumach) C.E. Hubb	Poaceae	-	May to July	H	Used as supplemental food source among other cereal crop.
14.	<i>Bracheria eruciformis</i> (J.E. Sm.)	Poaceae	Antu garike hullu	January to June	H	Used as fodder.
15.	<i>Bracheria ramosa</i>	Poaceae	--	May to July	H	Used as boiled wholgrain,(porridge), eaten as millet.
16.	<i>Bracheria reptans</i> (L.) Gard.	Poaceae	-	May to July	H	It is a good fodder
17.	<i>Carex echinata</i> Murray	Poaceae	-	May to July	H	Used as fodder.
18.	<i>Cenchrus ciliaris</i> .L	Poaceae	Kolakatte hullu	May to July	H	An excellent fodder. Attempts ae being made to atxend it over wider areas.
19.	<i>Chloris barbata</i> Sw.	Poaceae	Manchad kalu hullu	May to July	H	Juice of this plant is used as anti-bacterial and anti-microbial to treat skin disorder.
20.	<i>Chloris virgata</i> Sw.	Poaceae	Gudi hullu/ Ganjali hullu	May to July	H	It is used as livestock feed, and leaf are soaked in waterand applied on wounds to prevent infection.
21.	<i>Chrysopogon fulvus</i> (spreng) chiov	Poaceae	Kanni hullu/Gannji kariki	May to July	H	Fodder
22.	<i>Cymbopogon citratus</i> (DC.)	Poaceae	Gouthi/ Chaha ele/ Nimbe hullu	September to December	H	Plant grown for its aromatic oil
23.	<i>Cymbopogon calarathus</i>	Poaceae	Ganajali	eptember to December	H	1. Stem is used to treat herpes 2.Aromatic oil is extracted from stem
24.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Karika	January to July	H	1.Used as forage 2. To worship God Ganapathi
25.	<i>Cyperus alopecuroides</i> Rottb	Cyperaceae	Naribalulla	May to July	H	1.Grows as ornamental 2. The plant (stem) is gathered from the wild for local use in making mats 3. The culms are used for matting and rush-bottomed chairs 4. The inflorescence stalk and leaves are used to make mats that are used in Hindu marriage and thread ceremonies 5. The dried leaves and stems are used for thatching houses and sheds
26.	<i>Cyperus compressus</i>	Cyperaceae	Usumaani hullu	August to December	H	Used to treat various disease like diarrhea, malaria, stomach and bowel disorders.
27.	<i>Cyperus difformis</i>	Cyperaceae	Kari sanna Jambu	August to December	H	Used to prepare clean seed beds prevent seed production and avoid contamination.
28.	<i>Cyperus distans</i>	Cyperaceae		August to December	H	Used to treat diarrhoea, malaria and stomach bowel disorders
29.	<i>Cyperus eragrostis</i>	Cyperaceae	Jek	March to June	H	Used as fooder
30.	<i>Cyperus esculentus</i>	Cyperaceae	Neerina jeka	March to June	H	Tubers are used as food
31.	<i>Cyperus exaltatus</i> (giant sedge)	Cyperaceae	Kempu jambu	April to June	H	Useful for paper making
32.	<i>Cyperus flavidus</i>	Cyperaceae		April to May	H	Used as tonic stimulant, fevrifuge, amenorrhoea, and also used as fodder.
33.	<i>Cyperus kyllingia</i>	Cyperaceae	Kailing	April to June	H	Used as fodder
34.	<i>Cyperus rotundus</i>	Cyperaceae		March to May	H	1. Root is used with hair oil 2. Root is used as a olibanum (Dhoopa/ Loban) 3.Fresh tubers are diaphoretic, astringent and have been used to combat scorpion stings
35.	<i>Cyperus tenerife</i>	Cyperaceae	Kempu Jek	October to December	H	Used as fodder
36.	<i>Cyperus triceps</i>	Cyperaceae	Kylinga	May to July	H	Used for treating fevers and digestive system disorder
37.	<i>Dactyloctium aegyptium</i> (L)Willd	Poaceae	Tapparkyan kasa/ Konan thale hullu	September to December	H	Used as fodder, and the seeds used to make alcoholic beverages
38.	<i>Dactyloctium scindicum</i> Boiss	Poaceae	Sanna Tapparkyan kasa	April to July	H	Used as fodder
39.	<i>Dicanthium annulatum</i> (Forsk.)Stapf	Poaceae		April to July	H	Highly esteemed as fodder grass
40.	<i>Dicanthium aristatum</i> (Poir.) C.E. Hubb	Poaceae	Ganajali/ Garike hullu	April to August	H	Used as fooder
41.	<i>Dicanthium foveolatum</i> (Del.) Roberty	Poaceae	Urukana hullu	April to August	H	Used as medicine, leaf decoction are drunk to treat intestinal worms
42.	<i>Dicanthium Pertusum</i> (L.) W.D. Clayton	Poaceae	Urukana hullu	April to July	H	Used as fodder
43.	<i>Digitaria bicornis</i> (Lamk.) Roem and Schult.	Poaceae	Thapari hullu	March to September	H	The seeds are eatable ,and made into a fermented to make the beer
44.	<i>Digitaria ciliaris</i> (Retz.) Koel.	Poaceae	Doddakki hullu	April to July	H	Used as fodder, and to treat gonorrhoea.
45.	<i>Digitaria longiflora</i> (Retz.) Pers.I	Poaceae	Thapari hullu	April to July	H	Used as forage to feed animals

46.	<i>Digitaria sanguinalis</i> L.(Scop)	Poaceae	-	April to July	H	Used as fodder, and making paper
47.	<i>Dinebra chinensis</i> (L.) P.L. Peterson N. Snow	Poaceae	Hulugyan hullu/ Nari balad hullu	April to July	H	Used as fodder.
46.	<i>Dinebra retroflexa</i> (Vahl.)Ponzer	Poaceae	Hulagyan hullu/Nari balulla	January to June	H	Used as forage
47.	<i>Echinochloa colona</i> (L.) Link	Poaceae	Othagaddi	March to July	H	Used as forage and all kind of stock.
48.	<i>Echinochloa crus-galli</i> (L.) Beauv	Poaceae	Shimpagyan hullu/Kaadu dabbe hullu	April to July	H	It is used in disease of the spleen. young shoot are eaten as vegetable
49.	<i>Echinochloa glabrescens</i> Munra e x. Hook. f	Poaceae	-	March to July	H	Used as forage.
50.	<i>Echinochloa muricata</i> (P. Beauc.)	Poaceae	Antu garike hullu	March to July	H	Seeds are used as food.
51.	<i>Eleusine indica</i> (L.) Gartener	Poaceae	Hakki kaalin hullu	February to July	H	It is used in medicine as diuretic anti- helimenthic, and treating cough .
52.	<i>Eragrostis ambalis</i>	Poaceae	Gubbi kasa	February to April	H	Used as ornamental grass , and for lawns.
53.	<i>Eragrostis aspera</i> Nees.	Poaceae	Gubbi kasa	February to April	H	Birds eat grains
54.	<i>Eragrostis japonica</i> (Thumb) Trin.	Poaceae	Gubbi kasa	February to April	H	Used as fodder
55.	<i>Eragrostis tenella</i>	Poaceae	Pathrike hullu	February to June	H	It is grazed by cattle and buffaloes.
56.	<i>Eragrostis uniolodes</i>	Poaceae	-	March to June	H	Used as forage, and also as a green manure.
57.	<i>Eragrostis minor</i> (L.) Beduv	Poaceae	Gubbi kasa	February to April	H	This grass is commonly used as livestock fodder. The seeds appears to be of high nutritional value for some animals. It prevent soil erosion.
58.	<i>Eragrostis pilosa</i> (Retz) Nees. Ex Steud	Poaceae	Kaadu sanna same hullu	February to April	H	Used as cereals and forage and fodder.
59.	<i>Eragrostis viscosa</i>	Poaceae	Gubbi kasa	February to April	H	Live stock fodder
60.	<i>Eulalia trispicata</i> Henr.	Poaceae	-	April to August	H	Used as fodder
61.	<i>Fimbristylis dichotoma</i> (L.) Vahl	Cyperaceae	-	March to July	H	Used as green manure and soil stabilizer
62.	<i>Fimbristylis miliaceae</i> (L.) Vahl	Cyperaceae	-	October to January	H	Used as fodder
63.	<i>Furiena pubescene</i> (poir.) Kunthl	Cyperaceae	-	March to July	H	Used as forage for cattle
64.	<i>Heteropogon contortus</i> (L.) Roem. And Schult	Poaceae	Oobina hullu	June to December	H	Used as erosion control and the revegetation of degraded habitats.
65.	<i>Hordeum jubatum</i> L	Poaceae	Kasabarige hullu	August to December	H	Seeds are used as cereal making bread and porridge.
66.	<i>Hyparrhenia filipendula</i> (Hochst)Stapf	Poaceae	-	October to December	H	The stems are used for thatching and for making mats and screens for ceiling. This grass provides fair to good grazing and hay
67.	<i>Hyparrhenia hirta</i> (L.)Stapf	Poaceae	-	April to July	H	Stem is used to prepare mat and baskets.
68.	<i>Juncus bufonius</i>	Juncaceae	-	January to April	H	Used as fodder
69.	<i>Juncus effusus</i>	Juncaceae	-	April to July	H	Ornamental grass
70.	<i>Imperata cylindrica</i> (L.) Raesch	Poaceae	-	April to July	H	Ornamental grass
71.	<i>Ischaemum indicum</i>	Poaceae	Mabbu Ganjal	January to May	H	Used as forage
72.	<i>Leptochloa scbra</i>	Poaceae	-	January to April	H	Used as fodder
73.	<i>Melenocenchris abyssinica</i> (R.Br.ex Fresen.) Hoscast.	Poaceae	-	Moist place	H	Used as forage
74.	<i>Melanocenchris jacquemontii</i> Jaub. Et Spach.	Poaceae	-	October to January	H	Used as fodder
75.	<i>Panicum repens</i> L.	Poaceae	-	April to July	H	Used as forage for grazing or cutting
76.	<i>Panicum virgatum</i> L.	Poaceae	-	April to July	H	1. Switchgrass is grown as a drought resistant ornamental grass average to wet soils and in full sun to part shade. 2. Switch grass can be used as a feedstock for biomass energy production, as ground cover for soil conservation, and control erosion, for forage and grazing.
77.	<i>Paspalum distichum</i> L	Poaceae	-	June to October	H	Useful in erosion control and soil binder
78.	<i>Paspalum dilatatum</i> poir	Poaceae	-	March to June	H	This grass is a food source for several avian species.
79.	<i>Pasplidium flavidum</i> (Retz)A Camus	Poaceae	-	June to November	H	Used as forage
80.	<i>Pasplidium geminatum</i> (Forssle) Stapf.	Poaceae	-	January to April	H	Used as fodder
81.	<i>Pennisetum americanum</i> L	Poaceae	Sajje	May to July	H	Rich in magnesium, used as a food
82.	<i>Pennisetum hohenackeri</i> Hochst.	Poaceae	-	Hanna mev	H	Used as forage.
83.	<i>Pennisetum setaceum</i> Hochst.	Poaceae	-	April to August	H	Used as forage for cattles.

84.	<i>Pennisetum villosum</i>	Poaceae	-	January to April	H	Fodder
86.	<i>Perotis indica</i> (L.) o. ktze	Poaceae	-	September to - December	H	Used as forage.
87.	<i>Phalaris canariensis</i>	Poaceae	-	October to January	H	Used as fodder
88.	<i>Phalaris minor</i> L.	Poaceae	-	June to December	H	Used as forage and fodder for livestock.
89.	<i>Phleum arenarium</i>	Poaceae	-	October to December	H	Used as forage
90.	<i>Polypogon monspeliensis</i> (L.) Desf	Poaceae	Chitraathruna	March to May	H	Infusion of the plant ash has being used in the treatment of heart palpitation.
91.	<i>Rottboellia cochinchinensis</i> (Lour). WD. Clayton	Poaceae	-	September to December	H	Used as fodder for livestock.
92.	<i>Saccharum officinarum</i> L. (Cultited)	Poaceae	Kabbu	February to July	S	Interesting annual accent. Large container. Commercial production of sugar and molasses plus biofuels.
93.	<i>Saccharum spontaneum</i> L	Poaceae	Kaadu kabbu	November to January	H	Used as fodder. Stem is edible, yield sugarcane juice
94.	<i>Sehima sulcatum</i> (Hack.) A. Camus	Poaceae	-	November to February	H	Used as forage for livestock.
95.	<i>Setaria barbata</i> (Lam.) Kunth	Poaceae	-	February to July	H	Used as treat paralysis and also used as fodder.
96.	<i>Setaria glauca</i>	Poaceae	-	February to July	H	Aarati is prepared from inflorescence to eradicate disease in sheep
97.	<i>Setaria intermedia</i> Roem. Et Schult	Poaceae	Sheer kabba	September to December	H	Grass is reported to be liked by cattle.
98.	<i>Setaria pumila</i> (Poir)Roem & Schult	Poaceae	-	September to January	H	Can be eaten as sweet and savoury food in all the way that rice is used.
99.	<i>Setaria verticellata</i> Beauv	Poaceae	Antaraki/Hanaji	November to February	H	Used as forage.
100.	<i>Setaria viridis</i> (L.) P. Beauv	Poaceae	-	November to February	H	Used as fodder.
101.	<i>Sorghum halapense</i> (L.) Pers	Poaceae	Kahi jola	March to May	H	Cultivated as fodder.
102.	<i>Sorghum volgare</i> . (Cultited)	Poaceae	Bili Jola	June to October	H	Seeds edible
103.	<i>Spodiopogon rhizophorus</i> (Steud.) Pilg	Poaceae	-	August to January	H	Used as fodder.
104.	<i>Sporobolus dainder</i> (Retz.) P. Beauv	Poaceae	-	Hanchi hullu	H	Control soil erosion and thaching
105.	<i>Sporobolus coromondelis</i> (Retz) kunth	Poaceae	Nari balulla/Gubbi pucha	September to December	H	Used for livestock as food.
106.	<i>Tetrapogon villisus</i> (Roxb) chior	Poaceae	-	November to February	H	Used as fodder.
107.	<i>Tetrapogon tenellus</i>	Poaceae	-	August to November	H	Used as fodder.
108.	<i>Themeda triandra</i> Forsk	Poaceae	-	January to April	H	Used as domestic livestock production
109.	<i>Tragus roxburghi</i>	Poaceae	-	June to August	H	Used as fodder for livestock
110.	<i>Triticum aestivum</i> L	Poaceae	Godi hullu	It flowers from June to July and seeds ripen from August to September	H	1. Grains are edible 2. Leaves and stem used as a fodder (forage) 3. Straw used in mashroom culture 4. Wheat flour used as prevent childhood asthma 5. Wheat is also used in the manufacturing of beer and alcoholic beverages 6. Wheat is used to prepare biscuits and breads 7. Porridge (Sajjaka) dish is prepared
111.	<i>Typha angustata</i> Bory ans Chauband	Poaceae	Aap	March to June	S	1. Whole plant is used prepare rope for hut 2. Flower is used in smoking to ignite (Chilumi/Dudi alli) 3. Mat is prepared from leaf; 4. Board is prepared by stem
112.	<i>Urochloa panicoides</i> P.	Poaceae	-	January to April	H	Weed used as summer grass.
113.	<i>Urochloa subquadrifera</i>	Poaceae	-	January to May	H	Used as fodder.
114.	<i>Zea mays</i> L. (Cultited)	Poaceae	Mekke theni	June to September	S	1. Corn seed are edible 2. Suji of corn is used to prepare upama 3. Corn oil is used to prepare dishes 4. Instead of sugar corn syrup is used for sweetness 5. Popcorn is prepared from seeds of corn 6. Corn silk is used for bladder infection and also used to treat heart failure, diabetes, high cholesterol levels and blood pressure level.

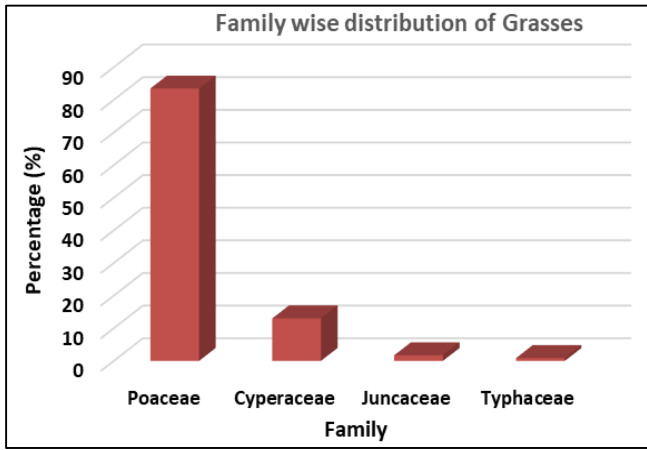


Fig 3: Grass species Habitwise distribution

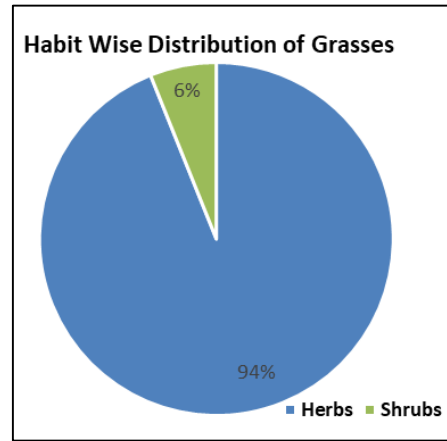


Fig 4: Familywise distribution of grasses



Bothriochloa insculpta



Cenchrus ciliaris



Chrysopogon fulvus



Cyperus alopecuroides



Cyperus eragrostis



Cyperus exaltatus



Fuirena pubescens



Juncus effusus



Imperata cylindrica

*Sporobolus dainder**Themeda triandra**Urochloa subquadripapa***Fig 5:** Grass species of Alamatti hill

Conclusions

Grass species survey conducted on March 2018 to March 2022 in Alamatti hill range area, Vijayapur district. The main purpose of this survey was to document grass species. There are about 115 species of angiosperms belonging to 56 genera and 4 families were reported found to be used. Scientific name, family, vernacular name, time of availability, edible part, habit and mode of consumption are provided. The study suggests that the present information grass species Alamatti hill range area of Vijayapur district may be used for phytochemical and pharmacological research in future for the development of new sources.

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