
PUBLICATIONS

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Sr. No	Title of paper	Author's Name	*Journal Name*	Year Page No.
1.	Vegetational diversity in the land of Bhey (Garbada)	Dhara Gandhi, Susy Albert, Neeta Pandya and Krishna Panchal	*International Journal of Bioscience Reporter*	Vol. 8(1), 45-50, 2010
2.	Pictorial floristic diversity of grasses and associated vegetation from three grasslands of Randhikpur Forest Range, Dahod, Gujarat.	S.N.Tyagi, Amee Padhiar, Susy Albert, Neeta Pandya, Gandhi Dhara and Krishna Panchal	*The Indian forester*	Vol. 136, 1581-1592, 2010
3.	Diversity of grasses and associated legumes in the grasslands of Rampur Range in Panchmahal, Gujarat	Dhara Gandhi, Susy Albert, Neeta Pandya and Krishna Panchal	*Jounal of Economic Botany and plant Taxonomy*	Vol. 35(1), 193-202, 2011
4.	Socioeconomic study of grasses and legumes in Baria and Godhra Forest division, Gujarat	Dhara J. Gandhi, Susy Albert, Neeta R. Pandya and Krishna R.Panchal	*Notulae Scientia Biologicae*	Vol. 3(3), 53-61, 2011
5	Morphometric analysis of caryopses in nine species of *Eragrostis* (Poaceae) from using SEM and light microscopy	Dhara Gandhi, Susy Albert and Neeta Pandya	*Telopea*	Vol. 15, 87-97, 2013
6.	Microsculpturing of Floret and Caryopsis in *Heteropogon* Species (Poaceae)	Dhara Gandhi, Susy Albert and Neeta Pandya	Proceedings of Biodiversity Conservation Status, Future And Way Forward, (19-20th July, 2014) at K.S.Rangasamy College of Technology, Tiruchengode, Tamil Nadu, India. organized by National of Academy of Biological Sciences, Chennai.	
7	Morphometric variations in caryopses and seedlings of two grass species growing under contrasting habitats	Dhara Gandhi and Susy Albert	*Notulae Scientia Biologicae*	Vol. 7(3), 355-360, 2015
8	Handbook on the morphology of common grasses: Identification and characterization of caryopses and seedlings	Dhara Gandhi, Susy Albert and Neeta Pandya	Apple Academic Press Inc., Canada., 2016 International Standard Book Number-13: 978-1-77188-249-1 (Hardcover) International Standard Book Number-13: 978-1-77188-250-7 (eBook)	
9	Contribution to the grass flora of Gujarat state	Dhara Gandhi, Susy Albert and Neeta Pandya	*Indian forester*	Vol. 143(12), 1294-1298, 2017

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VEGETATIONAL DIVERSITY IN THE LAND OF BHEY (GARBADA)

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ABSTRACT

In the present study diversity of grasses and other associated herbaceous flora was analyzed of Bhey which comes in range of Garbada of Panchmahal District in Gujarat state. This region is hilly area with yellow soil. The study was conducted twice (2008), in monsoon and in post monsoon period. The diversity of different species was more in post monsoon period. In this region tree species were found to be more than the herbaceous flora. *Madhuca indica* was predominantly found in this region. Among the grasses *Ischaemum indicum* was found to be the abundant species and the tribal people grow *Paspalum scorbiculatum*. The flour of these grains is used by the tribal Adivasi, Rathva's of this region. The other species present in the area are also utilized by the tribes living in this region.

Key Words: Bhey, Diversity, Grasses, Herbaceous flora.

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DIVERSITY OF GRASSES AND ASSOCIATED LEGUMES IN THE GRASSLANDS OF RAMPUR RANGE IN PANCHMAHAL, GUJARAT

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ABSTRACT

The present study was conducted with an aim to document the floristic diversity of grasses and associated legumes occurring in the grasslands of Rampur Range in Baria Division of Panchmahal District, Gujarat. A total number of around 67 grasses and 29 legumes was deocumented from this region. Among the grasses *Heteropogon contortus*, *Themeda triandra*, *Sorghum halepense* and *Apluda mutica* were found to be dominant in these areas. *Themeda laxa* is not found in any other regions of Baria Division except Rampur grassland. Similarly, among the legumes *Crotalaria albida*, *Crotalaria burhia*, *Crotalaria hebecarpa* were found only in Rampur grassland. *Rhynchosia minima* predominantly was found to be associated with *Ophioros exaltatus* while species of *Indigofera* were found associated with *Heteropogon contortus*. Among the documented grasses in Rozam *Coix lacryma-jobi* is found to be restricted in this region. *Sehima nervosum* is a highly palatable grass which was introduced by the Forest Department in this region. Under the existing natural conditions *Sehima nervosum* has taken over other grasses in few areas in the form of isolated dense patches.

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PICTORIAL FLORISTIC DIVERSITY OF GRASSES AND ASSOCIATED VEGETATION FROM THREE GRASSLANDS OF RANDHIKPUR FOREST RANGE, DAHOD, GUJARAT

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SUMMARY

Floristic diversity of grasses and other associated herbaceous flora mainly the legumes was analyzed in three major forest sites occurring in Randhikpur range of Limkheda Taluka in Dahod district of Gujarat state. The study was with a view to asses the vegetation and suggest management strategy for speeding up the tree forms in the area. The area had low floral diversity in the premonsoon mainly because livestock rearing was the main resources of livelihood which has brought about the over-exploitation of the existing vegetations, which were less, both in number and abundance. In the post monsoon these areas possessed around forty four different species. At the three sites, among the grasses *Heteropogon contortus* Var. *contortus* Subvar. *genuisus*, *Heteropogon contortus* Var. *contortus* Subvar. *typicus*, *Themeda triandra* and *Apluda mutica* appeared to be dominant.

Key words: **Floristic diversity, Grasses, Randhikpur, Sudiya, Annopura, Chhapri.**

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Socioeconomic Study of Grasses and Legumes in Baria and Godhra Forest Division, Gujarat

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Abstract

Gujarat has rich traditional knowledge associated with biodiversity. The cultural diversity in the Indian society reflects close relationship between the existence of human life and nature including all other living creatures and non-living features. The present paper deals with the traditional knowledge of villagers in 10 villages nearby the grasslands in Panchmahal and Dahod districts of Gujarat, India regarding the multipurpose use of grasses and associated legumes prevailing in these grasslands. A survey with the help of questionnaire was conducted to analyze the socioeconomic status. 69 grass species and 34 legumes could be identified growing in these grasslands of which 92 were used for livestocks. Among these grasses the most preferred grass species were *Dichanthium annulatum* and *Sehima nervosum* because of its high palatability. Three grasses and 8 legume species were used for food and medicine. The study emphasize the use of plant wealth to human needs of the regions and assist in appraisal of various anthropogenic interventions accountable for loss of prevailing biodiversity of the region.

Keywords: Baria, grasses, Godhra, legumes, socioeconomic

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Morphometric analysis of caryopses in nine species of *Eragrostis* (Poaceae) from India using SEM and light microscopy

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Abstract

Seed exomorphic characters of nine different species of *Eragrostis* were investigated by Light and Scanning electron microscopy. In the present study the micro-morphological characteristic features of caryopses such as shape, dimension, colour, epidermal cell surface structure and features of anticlinal and periclinal walls were examined. Light microscopy revealed that most of the studied caryopses varied in shape from obloid to ovoid. The caryopses in most of the species of *Eragrostis* are sticky in nature due to the presence of surface slime cells, which makes them appear shiny and transparent. This morphological feature was able to be observed under SEM but not light microscopy. The nine different species could be differentiated on the basis of shape and position of the hilum and embryo.

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Microsculpturing of Floret and Caryopsis in Heteropogon Species (Poaceae)

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Abstract

Microsculpturing of florets and caryopses of four different species of *Heteropogon* were investigated by Light and Scanning electron microscopy to determine the significance of their features as taxonomic characters. Micromorphological characteristic features of florets and caryopses such as shape, dimension, colour, epidermal cell surface structure and features of anticlinal and periclinal walls were examined. Most of the light microscopical fetures were similar for studied species. SEM study also showed great variations. Hilum of the *H. ritchiei* showed reticulate pattern under SEM differentiating it from the species which showed a ruminate pattern of sculpturing. Morphometric analysis which included length, breadth, thickness, embryo %, hilum % showed maximum values for *Heteropogon triticeus*.

Keywords: Floret, caryopses, microsculpturing, light microscopy, Scanning Electron microscopy

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Morphometric Variations in Caryopses and Seedlings of Two Grass Species Growing Under Contrasting Habitats

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Abstract

Urochondra setulosa grows in marine conditions, while *Sporobolus indicus* grows near fresh water and sometimes also close to moist places along roadside areas. Both species belong to the same tribe and same family. The two grass species growing under different habitats showed characteristic variations in their morphometric traits of the caryopsis and seedlings. *U. setulosa* growing in salty area had characteristic features, e.g. leaf and culm with salt deposition, rigid leaf blade with pointed leaf tip, while *S. indicus* growing near fresh water showed glabrous nodes and internodes. Morphometric analysis of caryopses of both species showed very similar features, without prominent differences in their length, breadth and thickness. But light microscopy and scanning electron microscopic (SEM) studies showed variations. Under light microscopy, features like colour, shape and compression of caryopses showed differences among the species. SEM studies of caryopses revealed a reticulate type of pattern of sculpturing on both dorsal and ventral surfaces, whereas anticlinal and periclinal walls in *U. setulosa* were elevated with folded walls, while in *S. indicus* had non elevated undulating walls. In conclusion, each individual grass ecotype evolves some characteristic morphological features to thrive well under a particular environment. Both species studied hereby, grown in different habitats, showed remarkable differentiations in their characters, thus indicating that habitats play a major role in traits of the plant growth.

Keywords: Caryopses, salinity, grass, Poaceae, *Sporobolus indicus*, *Urochondra setulosa*

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CONTRIBUTION TO THE GRASS FLORA OF GUJARAT STATE

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ABSTRACT

The documentation of grasses in the different forest area of Gujarat State was explored. The documentation of grasses in the different forest areas of Gujarat State was explored. Especially in Saurashtra and Central Gujarat, Grass species were collected. Detailed morphological characterization of the vegetative and reproductive parts were carried out using dissecting and binocular microscope (Olympus microscope-SZ2-ILST). Identified species were further confirmed at Blatter Herbaria (St. Xavier's College, Mumbai).

Key words: Grasses, Gujarat, Addition of species.

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Identification and Characterization of Caryopses and Seedings

Dhara Gandhi • Susy Albert • Neeta Pandya

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