



संहती कार्यसाधिका । शिलं परं भूषणम्  
Shetkari Shikshan Prasarak Mandal's

## KRISHNA MAHAVIDYALAYA, RETHARE BK.

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### Key Indicator 3.3 – Research Publication and Awards

#### 3.3.2: Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during year 2021-22.

Sr. No	Name of the teacher	Title of the book/chapters published	Title of the paper/Book	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Dr. C. B. Salunkhe	Nil	Morphological Variation in common Bluestem Grass	National conference on biodiversity and biosciences- Research book	National conference on biodiversity and biosciences	National	2022	978-81-956739-6-4	Krishna Mahavidyalaya, Rethare Bk	Prarup Publication Kolhapur
2	Dr.S.H.Jadhav	Advances in Plant Science Volume V	Advances in Plant Science Volume V	Nil	Nil	National	2022	978-93-91768-67-7	Krishna Mahavidyalaya, Rethare Bk	Bhoomi Publishing

3	Miss M.S. Pawar	Nil	१९६० नंतरच्या ग्रामीण कादंबरीतील स्त्री जीवनाचे चित्रण	बळवंत कॉलेज, विटा आणि साठोतरी मराठी साहित्यातील विविध प्रवाह	बळवंत कॉलेज, विटा आणि साठोतरी मराठी साहित्यातील विविध प्रवाह	National	2022	978-93- 92584-62-6	Krishna Mahavidyalaya, Rethare Bk	Harshvardha n Multiservice s, Pvt Ltd Beed
4	Dr. V. K. Sonawane	Nil	‘हैद्राबाद संस्थानातील मराठवाडयाचा मुक्तीसंग्राम’ पान नं १५५ ते १८०	प्रा. डॉ. उत्तम सावंत उपप्राचार्य यशवंत महाविद्यालय ,नांदेड सेवा पूर्ती गौरव ग्रंथ	Nil	National	2022	978-93- 93341-05-1	Krishna Mahavidyalaya, Rethare Bk	Publisher SHAURYA PUBLICAT ION, Latur.
5	Dr. N. V. Gaikwad	Nil	Study of Agriculture land use and chemical fertilizer use in Satara District	Unnati International Journal of Multidisciplinary Scientific Research	International conference on changing trends in Environmental, Agriculture and Impact on rural development	International	2022	2581-8872	Krishna Mahavidyalaya, Rethare Bk	International Scientific research solution



*(Signature)*  
Principal  
Krishna Mahavidyalaya, Rethare Bk,  
Tal. Karad : 415 108 (M.S)



## Morphological Variation in Common Bluestem Grass

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Potdar<sup>2</sup>

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**CITATION:** Mane, P.R., Salunkhe, C.B., and G.G., Potdar (2022). Tree Diversity of Dandoba Hills, Sangli Dist. (M.S.) India: In Pol, S.B., Shendage, S.M., Dalavi, J.V. and V.S., Nangare, National Conference on Biodiversity and Biosciences-Research Book, Balwant College, Vita pp. 20-32

**ABSTRACT:** Number of racemes per inflorescence and hair pattern on the spikelet and pits on pairs of spikelets are most useful characters for the identification of *Bothriochloa*, although an obvious range of variation exists within certain species complexes. *B. pertusa* is commonly known as bluestem grass. It is a widespread species, found to occur in the plains, cultivated field bunds, along roadsides, and on forest floors. The present communication is part of the revisionary work of the genus *Bothriochloa* for India. A detailed description of the species and variations in inflorescence, habit, and hairy pattern on the spikelets are discussed.

**KEYWORDS:** Andropogoneae, *Bothriochloa*, variation, inflorescence, Poaceae.

**INTRODUCTION:** The genus *Bothriochloa* Kuntze belonging to the tribe Andropogoneae of the family Poaceae Barnhart is widely distributed throughout the world, and represented by 38 species (POWO, 2022; Swamy *et al.*, 2021; Mane *et al.*, 2022). The genus is represented in India by 13 species, of which six species, viz. *B. compressa* (Hook.f.)Henrard, *B. ensiformis* (Hook.f.) Henrard, *B. grahamii* (Haines)Bor, *B. jainii* Deshp. & Hemadri, *B. longifolia* (Hack.) Bor and *B. woodrovii* (Hook.f.)A.Camus are endemic (Prasanna *et al.*, 2020; Kellogg *et al.*, 2020; Mane *et al.*, 2022).

### **MATERIAL AND METHODS:**

The exploratory investigations for the present study were undertaken during the years 2019-2022. During field studies, Each form was collected and processed for Herbarium preparation by standard methods (Jain & Rao, 1977). Also collected germplasm studies.

Every specimen was carefully studied by dissecting the floral parts of the duplicate specimens under dissection and stereomicroscopes. Detailed study of the dried specimens and their identification were carried with the help of various relevant literature such as, (Bor, 1960, Sreekumar & Nair, 1991, Kabeer & Nair, 2009, Potdar *et al.*, 2012) etc. Further, detailed revisions (Deshpande, 1984) and relevant taxonomic papers were consulted wherever required. The identified specimens were further confirmed by comparing them with the authentic specimens available at CAL, BSI, BSA, BLATT, BSID, MH, SUK, BSJO, etc. All the collected specimens during the present work are deposited in Krishna Mahavidyalaya and one set will be submitted to the Department of Botany, Shivaji University, Kolhapur. A detailed description of the species, phenology, distribution, and variation in inflorescence depicted in the photo plate (Figure 3).

### **RESULT AND DISCUSSION:**

*Bothriochloa pertusa* (L.)A.Camus in Ann. Soc. Linn. Lyon Ser. 2, 76: 164. 1931; Bor, Grasses Burma, Ceylon, India & Pakistan 109. 1960; Bhattacharya (Sunanda Moulik), Grasses Bamboos India 1: 267. 1997; Prasanna *et al.*, Poaceae in Mao & Dash (eds.) Fl. Pl. India Annot. Checkl. Monocot. 328. 2020; *Holcus pertusus* L., Mant. Pl. Altera 301. 1771; *Andropogon pertusus* (L.) Willd., Sp. Pl. 4(2): 922. 1806; Hook.f., Fl. Brit. India 7: 173. 1896; *Amphilophis*

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# Advances in Plant Science

Volume V

Editors

Dr. Sandip P. Patil

Dr. M. Muthukumaran

Dr. Sunita H. Jadhav

Dr. Swarupa V. Agnihotri





# Advances in Plant Science Volume V

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## About Editors



Dr. Sandip P. Patil, M.Sc., SET, Ph. D. is currently working as the Head of Microbiology Department and IQAC coordinator at R. C. Patel Arts, Commerce and Science College, Shirpur-425405, India. He has teaching experience of 13 years to UG and PG classes of Microbiology and Biotechnology. He is the recognized research guide of KBC NMU, Jalgaon in the subject of Microbiology. Currently 02 students are pursuing their doctoral studies under his able guidance. He has completed 03 research projects from various national funding agencies. He has published 18 research papers in reputed international journals, 05 books and 02 Indian patent to his credit. He has won First Prize at State Level Avishkar-2017 and Best Innovation Award by GHR Research Labs, Nagpur. His research expertise is in the field of Microbial Biochemistry, Enzymology, Industrial Microbiology, Plant pathology and Plant-microbe interactions etc. He is the Life member of Association of Microbiologists of India (AMI) and Biotech Research Society of India (BRSI).



Dr. M. Muthukumar, M.Sc., B.Ed., M.Phil., Ph.D., (Botany) from the University of Madras. He was born in 15th January 1978. He is an Assistant Professor of PG and Research Department of Botany, Ramakrishna Mission Vivekananda College (Autonomous), Chennai - 600004, Tamil Nadu, India. He has significantly contributed in the field of Plant Science, specifically Algal Bio-technology. He is an expert in algal culture collection, isolation, identification and mass cultivation. He also has specialized knowledge on biological wastewater treatment and effluent reuse, especially industrial exposure in application of microalgae in waste water management and has done laboratory and field level pilot and scaled up working models pertaining to many industries. He is familiar with the fresh water algae of South India and has a sound knowledge of limnology and various other fields, which are very much related to the Algology and Environmental Science. Dr. Munusamy Muthukumar received many prestigious awards. To cite a few, his doctoral work credential was awarded best Ph.D thesis in the year 2010 in Botany (Prof. K. Kalyanasundaram Memorial Prize) by the University of Madras; The Appreciation of Good Service Merits Award for the year 2014 from the Tamil Nadu Water Supply and Drainage Board (TWAD Board), Government of Tamil Nadu, Chennai; Young Scientist of the Year 2016 Award; National Teaching Excellence Award 2017; Dr.APJ Abdul Kalam Award 2018 for Excellence etc. He has done more than 36 special professional training programmes in National and International Workshops and participated in more than 186 National and International Conferences/Symposia/Webinars. He has written 5 chapters in books and about 68 research articles published in reputed National and International Proceedings & Journals. He was invited to present 7 special lectures in the National and International Conferences. He is Life Member of various scientific forums.



Dr. Sunita H. Jadhav, M. Sc., M. Phil., Ph. D. (Botany) is currently working as an Assistant Professor in Botany at Krishna Mahavidyalaya, Rethare Bk., M. S., India. She is recipient of Dr. G. V. Joshi Memorable Gold Medal and Young Scientist Award in International Scientist Awardson Engineering, Science and Medicine, Trichy, India. Several best paper presentation awards are also in her credit. Her research interest is in the field of plant physiology, plant growth regulation, plant biotechnology and nanotechnology. She has published 20 research papers in National and International Journals of good repute and presented papers in 25 National and International seminars and conferences. She has published 2 books, 2 book chapters and one training manual. She is recognized research guide for M. Phil and Ph. D. course by Shivaji University, Kolhapur. Currently 01 student is pursuing doctoral study under her able guidance. She has delivered series of invited lectures in workshops and various science events at schools and colleges.



Dr. Swarupa V. Agnihotri is working as an Assistant Professor in the Department of Botany, Wilson College, Chowpatty, Mumbai. She had completed her M.Phil. and Ph.D. in the field of plant physiology from the Department of Botany, Shivaji University, Kolhapur. She was awarded with G. V. Joshi memorial award and also received DST-PURSE fellowship. She has published nine research articles in the various national, international journals and proceedings. She has also published book chapters in National and International books. Dr. Agnihotri has attended and presented her research at various national and international conferences, seminars, etc.



साठोत्तरी मराठी साहित्यातील  
विविध प्रवाह

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### ➤ प्रस्तावना:

१९६० नंतर मराठी साहित्यात ग्रामीण, दलित, स्त्रीवादी, जनवादी, आदिवासी, मुस्लिम अशा अनेक नववाङ्मय प्रवाहाचा उदय झाला. त्यातील ग्रामीण साहित्याने मराठी ग्रामीण जीवन—जाणिवेचा ग्रामीण कादंबरी, कथा, कविता, नाटक आदी साहित्यप्रवाहाच्या माध्यमातून अभिव्यक्त केले. त्यामुळे मराठी साहित्यात समाज परिवर्तनाचे नवीन पहाट आली. महात्मा फुले शाहू महाराज, कर्मवीर भाऊराव पाटील, महात्मा गांधी त्यांनी समाजसुधारकांच्या विचारांची त्यांनी दिलेल्या ज्ञानाची शिदोरी घेऊन आपापल्या कादंबऱ्यांच्या माध्यमातून आपल्या मातीशी इमान राखत वास्तव ग्रामीण जीवन शब्दांकित केले आहे. म्हणजेच लेखक ज्या मातीत जन्माला येतो तेथील परिसर अनुभवलेले, पाहिलेले, सोसलेले जीवन अवतीभवतीचा समाजाने वातावरणाचे संस्कार त्या लेखकाच्या व्यक्तिमत्त्वावर होत असतात या संस्काराच्या मुशीतून सामाजिक बांधिलकीची नाळ जोडून लेखकाने अत्यंत डोळसपणे हृदयागत जाणिवेचा लेखणीच्या माध्यमातून लेखक

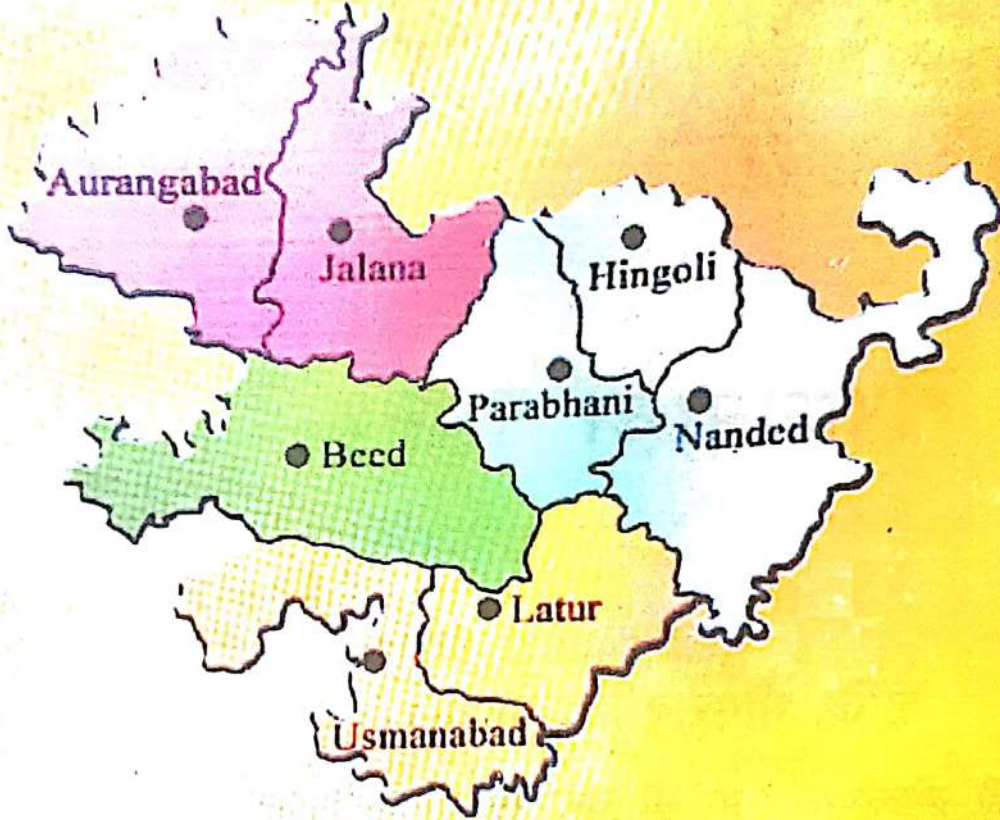
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प्रा.डॉ. उत्तम सावंत उपप्राचार्य यशवंत महाविद्यालय, नांदेड

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ता. कराड जि. सातारा. पिन- ४१५१०८

प्रस्तावना:

१५. ऑगस्ट- १९४७ हा दिवस सर्व भारतीयांसाठी स्वर्ण अक्षरांनी लिहून ठेवण्यासारखा दिवस आहे, कारण याच दिवसी संपूर्ण भारतभर स्वातंत्र्याचे पर्व सुरू झाले होते. मात्र जूनागड, हैद्राबाद व जम्मू आणि काश्मिर हे तीन राज्ये याला अपवाद होती. अजूनही त्या राज्यात स्वातंत्र्याचा सूर्य उगवलाच नव्हता. साहजिकच हैद्राबाद संस्थानात असलेला मराठवाडा पारतंत्र्यात होता. स्वातंत्र्याचे सुख अनुभवणाऱ्या भारताच्या हृदयावर मराठवाड्याच्या पारतंत्र्याची बोचरी जखम होतीच. परकीय सत्तेविरुद्ध एकत्र येतांना भारतीयांनी केलेला नेटाचा प्रयत्न हा कौतुकाचा खराच; पण स्वातंत्र्यानंतरही आणखी एका स्वातंत्र्यासाठी लढा देणं किती क्लेशदायक असेल हे त्याभागात राहणाऱ्या जनतेलाच माहित. निजामाच्या जुलूमी अधिपत्याखाली याप्रांतातील लोकांना कोणतेही राजकीय व नागरी अधिकार नव्हते; म्हणून निजामाविरुद्ध जनमत तयार होऊ लागले. त्यातच निजामाचे पाठबळ असलेला कासीम रझवी याने आपल्या 'रझाकार' या संघटनेच्या माध्यमातून निष्पाप जनतेवर अमानुष अत्याचार सुरू केले. त्यानंतर मराठवाड्यात जनमताचा प्रक्षोभ उसळला. निजामाविरुद्ध मराठवाडा मुक्तिसंग्रामाचे सेनानी उभे राहिले. स्वामी रामानंद तीर्थ यांचेकडे इ.स. १९३८ मध्ये स्थापन झालेल्या, हैद्राबाद स्टेट कॉंग्रेसचे नेतृत्व आले. गोविंदभाई शॉफ, अनंत भालेराव, पुरुषोत्तम चपळगावकर, रामलिंग स्वामी, श्रीनिवासरामबोरीकर, किशोरभाऊ शहाणे, वेदप्रकाश श्यामलाल, यांनी हे स्वातंत्र्य लढ्याचे स्फुलिंग चेतवले. या लढ्यात स्त्रियाही काही मागे नव्हत्या काही धाडसी महिलांच्या नावाचा उल्लेख करणे क्रमप्राप्त आहे. गोदावरीबाई टेके, रुक्मिणीबाई कोरडे, गीताबाई विनायकराव चारठाणकर, काशी मराठे, शशिकला बाम, सांबाबाई बोरा, पोसानीबाई राजांलग, आशाताई वाघमारे, वाळूबाई गंगूलाल, पानकुंवर कोटेचा, सत्यवती श्राफ, माई अंबडकर, लक्ष्मीबाई बाळाजी मयेकर, चंदा जरीवाला, शांताबाई पेडणेकर, नागव्वाबाई







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## The Study of Agricultural Landuse and Chemical Fertilizer Use in Satara District

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The agricultural activity is predominant vital sector which has big boost power to Indian economy, where nearly three-fifths Indian population has directly and indirectly engaged. About 157.35 million hectares are the total agricultural land of India which holds the second leading agricultural land in the world. For agriculture activity, land as well as chemical fertilizer is a very important factor. The large agricultural area size, physical and socio-cultural diversities, different types of land uses are found in India. In fact, agricultural land is a fixed asset which cannot be expanded as well as cannot be enlarged to complete the needs of an increasing population. But, use of chemical fertilizer rises highly agricultural productivity which can be complete the needs of an increasing population. The Satara district has taken for study which is located in the western part of the Maharashtra, where, agricultural land use is high. This research paper is an attempt to analyze the correlation between agricultural landuse and chemical fertilizer use in Satara District. The geographer Spearman's Rank Order method is used for evaluates the correlation of between agricultural landuse and chemical fertilizer. The correlation between agricultural landuse and chemical fertilizer in Satara District is  $r = 0.78$ . It is strong positive or direct correlation.

**Keywords** :- Agricultural Landuse, Chemical Fertilizer, Landuse, Agricultural Productivity, Satara

**The study of agricultural landuse and chemical fertilizer use in satara district**

**Introduction** :- The agricultural activity is

predominant vital sector which has big boost power to Indian economy, where almost three-fifths Indian population has directly and indirectly engaged. About 157.35 million hectares are the total agricultural land of India which holds the second leading agricultural land in the world. For agriculture activity, land as well as chemical fertilizer is a very important factor. The large agricultural area size, physical and socio-cultural diversities, different types of land uses are found in India. In fact, agricultural land is a fixed asset which cannot be expanded as well as cannot be enlarged to complete the needs of an increasing population. But, use of chemical fertilizer rises highly agricultural productivity which can be complete the needs of an increasing population. The fertile soil, high yield varieties crop and chemical fertilizer is the main facts of present agriculture in India. Hence, agricultural landuse and chemical fertilizer use is certainly correlated to each other.

The Satara district is situated in the western region of the Maharashtra state where, about 823855 hect. land of district occupied by agricultural land use. Where, Krishna river is main river, also, other including rivers are - the Koyna, the Tarali, the Nira, the Venna, the Man, the Vasna, the Urmodi, the Yerala, the Kudali, etc. are the important water source of agriculture through Veer Dam, Koyna Dam, Morana Dam, Kanher Dam, Mhaswad Dam, Dhom Dam, Yeralwadi Dam, Uttarmand Dam, etc. especially for agricultural belts of district.

**Study Area** :- The Satara district selected for the study of agricultural landuse and chemical fertilizer. The research study area- Satara district