



Cyperus Odoratus L. (Cyperaceae): a Newly Recorded Species in Flora of Upper Gangetic Plain (Fugp), India

Rahul, Satya Narain

Abstract: *Cyperus odoratus* L. (Cyperaceae) is reported here as a new distributional record for the Flora of the Upper Gangetic Plain and the adjacent Siwalik and Sub-Himalayan tracts of Uttar Pradesh, India. The species was encountered during targeted floristic surveys conducted between 2020 and 2025. Identification was confirmed through detailed morphological examination and comparison with authenticated specimens and protologues. This addition expands the known range of the species in northern India and highlights the need for continued taxonomic documentation in understudied transitional zones. This paper provides a detailed taxonomic description, citation, habit, habitat, ecology, flowering and fruiting, distribution, and photographs of the species.

Key words: *Cyperus odoratus* L., Newly recorded species, Flora of Upper Gangetic Plain (FUGP).

Nomenclature:

FUGP: Flora of the Upper Gangetic Plain

CNH: Central National Herbarium

BSA: Botanical Survey of India

DUTHIE: Duthie Herbarium

I. INTRODUCTION

Cyperaceae is the third-largest monocot family of flowering plants by Larridon *et al.*, 2021[4]. The genus *Cyperus* L. derives its name from Greek word *kupeiros*, meaning “sedge”. In India, the family Cyperaceae is represented by 32 genera and 610 taxa (553 species, 24 subspecies and 33 varieties) by Prasad *et al.* 2020 [7]. *Cyperus* L. is a largest genus of Cyperaceae, distributed across tropical as well as temperate regions. In India, the genus *Cyperus* is represented by more than 70 species by Prasad and Singh 2002 [6]; Prasad *et al.* 2020 [7]. Several authors have contributed to the documentation of Cyperaceae in the flora of India they are Ramachandran and Soosairaj 2014 [10], Singh, 2025 [8].

The Gangetic plains of India have long been a centre of floristic interest due to their rich diversity of flora, fauna, and cultural heritage.

Manuscript received on 11 October 2025 | First Revised Manuscript received on 17 November 2025 | Second Revised Manuscript received on 16 March 2026 | Manuscript Accepted on 15 April 2026 | Manuscript published on 30 April 2026.

*Correspondence Author(s)

Dr. Rahul*, Department of Botany, University of Allahabad, Plant Taxonomy Laboratory, Duthie Herbarium (DUTHIE), Prayagraj (Uttar Pradesh), India. Email ID: rahulray9918@gmail.com, ORCID ID: [0009-0005-0649-2098](https://orcid.org/0009-0005-0649-2098)

Dr. Satya Narain, Professor, Department of Botany, University of Allahabad, Plant Taxonomy Laboratory, Duthie Herbarium (DUTHIE), Prayagraj (Uttar Pradesh), India. Email ID: satyanarain.au@gmail.com

© The Authors. Published by Lattice Science Publication (LSP). This is an open-access article under the CC-BY-NC-ND license <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Numerous botanists have studied the vegetation of this region over time. Early major contribution to the Gangetic plains were made by Duthie, 1903-1929[1], followed Raizada, 1976 [9], who reported 15 genera and 77 species, later updated till 2024. The genus *Cyperus* within the flora of the Upper Gangetic Plain is represented by 21 species by Duthie 1903-1929 [1]. Several new taxa from this region have been described by Parker, 1929 [5], Saini *et al.* 1985 [11]. In Uttar Pradesh, Cyperaceae has been explored by Uniyal *et al.* 1997[12], and Khanna, 2017 [3].

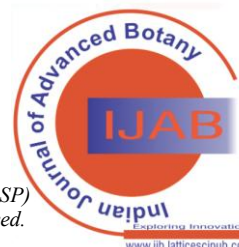
Cyperus odoratus L., a species native to the Americas, is here reported as a new record for the flora of the Upper Gangetic Plain, India. Previously, this species was documented only from southern part of the country, particularly Tamil Nadu. During recent floristic exploration in the Upper Gangetic Plain of Uttar Pradesh, specimens of *C. odoratus* were collected from moist and open habitats, especially along roadside wetlands. This collection extends the known geographical distribution of the species from southern to northern India, thereby filling an important gap in its national range. The occurrence of *C. odoratus* in this region indicates to diverse ecological conditions and suggests possible dispersal through disturbed and anthropogenic habitats.

II. MATERIALS AND METHODS

During floristic exploration of the family Cyperaceae, *Cyperus odoratus* L. was collected from the Balrampur district of Uttar Pradesh, representing a new record for the Flora of the Upper Gangetic Plain (FUGP). After detailed examination of their morphological characters, the specimens were identified using various floras and online herbarium specimen from the Royal Botanical Garden, Kew, England. Voucher specimens were recorded with their name, place, and date and prepared as herbarium sheets following standard methodology by Jain and Rao, 1977 [2]. These specimens were deposited in the Duthie Herbarium (DUTHIE), Department of Botany, University of Allahabad, Prayagraj, and Uttar Pradesh.

III. TAXONOMIC DESCRIPTION

Cyperus odoratus L., Sp. Pl.: 46 (1753). *Papyrus odorata* (L.) Willd., Abh. Konigl. Akad. Wiss. Berlin 1812-1813: 73 (1816). *Papyrus odorata* (L.) Kunth, F. W.H. von Humboldt, A. J. A. Bonpland & C. S. Kunth, Nov. Gen. Sp. 1: 217 (1816). *Diclidium odoratus* (L.) Schrad. Ex Nees, C. F. P. von Maritus & auct. Suc. (eds.), Fl Bras. 2(10): 54 (1842). *Torulinium odoratum*



Cyperus Odoratus L. (Cyperaceae): a Newly Recorded Species in Flora of Upper Gangetic Plain (Fugg), India

(L.) S. S. Hooper, Kew Bull. 26: 579 (1972).



Plate No. 1: Cyperus odoratus L., A: Habitat, B: Inflorescence, C: Spikelet, D: Glume, E: Achene

Perennial sedge with reduced rhizome, fibrous root. Stem 25.0 – 122.0 cm long, stout, trigonal, smooth, base swollen into tuber. Leaves shorter than stem, brownish, long, leaf blade 4.0 – 9.8 mm thick, flat. Involucral bracts 6 – 8, usually longer than inflorescence. Inflorescence up to 22.0 cm long, compound or decompound anthela. Spikes oblong-cylindrical, many spikelets. Spikelets 1.0 – 2.5 cm long, 0.8 – 1.0 mm broad, slightly laxly arranged, spreading downward, linear cylindrical, up to 25 flowered. Rhachilla winged, broadly elliptical, corky, and yellowish at maturity. Glumes 2.0 – 4.0 mm long, concave, ovate-elliptic, shiny, 7 – 9 veined, apex mucronate, yellowish brown colour. Stamens 3; anthers broadly linear, style medium length. Stigmas 3. Nut 0.6 – 0.8 mm long, trigonous, oblong to obovoid – oblong, slightly curved, young stage red but black when mature.

- A. Flowering and Fruiting:** August - January
- B. Habitat and Ecology:** Rare, it grows in disturbed places, edge of river and ponds, paddy field margin.
- C. Global Distribution:** America, Africa, Australia, Europe, Madagascar and Asia: Bangladesh, China, Japan, Myanmar, Philippines, Queensland, Thailand, Taiwan, Vietnam, Andaman and Nicobar Island, Malaya, Iran, Iraq and India
- D. Indian Distribution:** Tamil Nadu and Uttar Pradesh.
- E. Specimens Examined:** Uttar Pradesh, Balrampur, (27°50'6655" N, 82°37'6088" E.), Date: 21/12/2024; Rahul 36191: Duthie Herbarium (DUTHIE).

IV. CONCLUSION

The discovery of new plant, *Cyperus odoratus* L. as an addition to the flora of the Upper Gangetic Plain highlights the rich biodiversity and ecological significance of this region. This finding contributes to the understanding of regional flora, supports conservation efforts, and provides valuable data for future taxonomic and ecological studies. Therefore, continued exploration and documentation are essential to preserve the botanical diversity and to monitor environmental changes affecting the flora of the Upper Gangetic Plain.

ACKNOWLEDGEMENTS

The authors are thankful to the Head of Department of Botany, University of Allahabad, for facilitates, and to the

University Grant Commission for financial assistance. The author are also thankful to Dr. R. K. Gupta, Scientist-E and In-charge of the Central National Herbarium (CNH), Howrah, Kolkata, and to Dr. Vinay Ranjan, Scientist-E and Head of office, Botanical Survey of India (BSA), Central Regional Centre, Prayagraj, for providing access to library and herbarium facilities.

DECLARATION STATEMENT

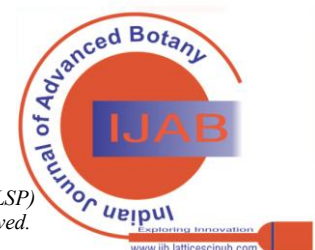
Some of the references cited are outdated and are noted explicitly as [1], [2], [5], [6], [7], [9], [10], [11], and. [12] However, these works remain significant for the current study, as they are pioneering in their fields.

As the article's author, I must verify the accuracy of the following information after aggregating input from all authors.

- **Conflicts of Interest/ Competing Interests:** Based on my understanding, this article has no conflicts of interest.
- **Funding Support:** This article has not been funded by any organizations or agencies. This independence ensures that the research is conducted objectively and without external influence.
- **Ethical Approval and Consent to Participate:** The content of this article does not necessitate ethical approval or consent to participate with supporting documentation.
- **Data Access Statement and Material Availability:** The adequate resources of this article are publicly accessible.
- **Author's Contributions:** The authorship of this article is contributed equally to all participating individuals.

REFERENCES

1. Duthie, J. F. 1903-1929. *Flora of Upper Gangetic Plain and of the adjacent Siwalik & Sub-Himalayan tracts*. 3 Vol. Govt. Press, Calcutta. <https://www.biodiversitylibrary.org/page/11430364>
2. Jain, S. K. and R. R. Rao 1977. *A hand book of field and herbarium methods*. Today and Tomorrows Printers and Publishers, New Delhi. 157. <https://www.scirp.org/reference/referencespapers?referenceid=1805541>
3. Khanna, K. K. 2017. Angiospermic plants of Uttar Pradesh. A check list. *Geophytology*. 47 (1). 69- 110. https://www.palaebotanicalsociety.org/geophytology/vol47_2017.php
4. Larridon, I., A. R. Zuntini, E. Leveille-Bourret, R. L. Barrett, J. R. Starr, A. M. Muasy, *et al.* 2021. A new classification of Cyperaceae (Poales) supported by phylogenetic data. *Journal of Systematics and Evolution*. 59(4): 852 – 895. <https://doi.org/10.1111/jse.12757>
5. Parker, R. N. 1929. Cyperaceae. In J. F. Duthie (Ed.), *Flora of the Upper Gangetic Plain and of the adjacent Siwalik and Sub-Himalayan tracts*, 3(3): 320 – 371. Calcutta: Government Printing. DOI: <https://doi.org/10.5962/bhl.title.10981>
6. Prasad, V. P. and N. P. Singh. 2002. *Sedges of Karnataka, India* (Family Cyperaceae). Scientific Publishers (India), Jodhpur. https://books.google.com/books/about/Sedges_of_Karnataka_India.html?id=OnIQQAAMAAJ
7. Prasad, V. P., Chowdhary, S. D., Jana, B. and Maji, A. 2020. Cyperaceae In: *Flowering Plants of India: An Annotated Checklist; Monocotyledons*. (Eds. Mao, A. A. and Dash, S. S.) Botanical Survey of India. Kolkata. https://books.google.com/books/about/Flowering_Plants_of_India.html?id=wK34zgEACAAJ
8. Singh, R.K. 2025. New combinations in *Cyperus* (Cyperaceae). *Journal of Biodiversity and Conservation* 9(4): 58–60. DOI:





<https://doi.org/10.5281/zenodo.17556088>

9. Raizada, M. B. 1976. *Supplement to the Duthie's flora of Upper Gangetic Plain*. Bishen Singh Mahendra Pal Singh, Dehradun. <https://www.semanticscholar.org/paper/Supplement-to-Duthie's-Flora-of-the-Upper-Gangetic-Raizada-Duthie/94d9f885ca969bfa38352ec8b919f3c165b3fa01>
10. Ramachandran, A and S. Soosairaj. 2014. *Cyperus odoratus* L. (Cyperaceae) A newly recorded species in India. *International Journal of Pharm Tech Research*. 6(2): 518-520. [https://sphinxnsai.com/2014/PTVOL6/PT=16\(518-520\)AJ14.pdf](https://sphinxnsai.com/2014/PTVOL6/PT=16(518-520)AJ14.pdf)
11. Saini, D. C., N. K. Sharma and S. K. Singh (1986). Two new records of Cyperaceae from Upper Gangetic Plain. *J. Bomby. Nat. Hist. Soc.* 82: 431-435. <https://www.biodiversitylibrary.org/page/50395117>
12. Uniyal, S. K., A. Swami and B. P. Uniyal (1997). *Cyperaceae of Uttar Pradesh- A Checklist*. Bishen Singh Mahendra Pal Singh, Dehradun. <https://www.bagchee.com/books/BB8370/cyperaceae-of-uttar-pradesh-a-check-list>

AUTHOR'S PROFILE



Dr. Rahul, M.Sc., Ph.D. a botanist, plant taxonomist, and ethnobotanist specializing in the Cyperaceae of Uttar Pradesh. I hold a PhD in Plant Taxonomy, with research focused on the morphological, ecological, and molecular diversity of sedges across various ecosystems. I also document ethnobotanical knowledge of rural and indigenous communities, highlighting the cultural and medicinal significance of native plants of Uttar Pradesh. I have published multiple UGC-approved and peer-reviewed papers on new records, morphology, ecology, and ethnobotany. Actively involved in seminars, workshops, and biodiversity projects, I mentor students and promote plant conservation, sustainable resource use, and awareness of the ecological roles of sedges.



Dr. Satya Narain, M.Sc., Ph.D., is a Senior Professor and Head of the Department of Botany, specializing in plant taxonomy, systematics, and biodiversity assessment. His research integrates morphological, ecological, and molecular approaches to investigate plant diversity, evolutionary relationships, and adaptive strategies. He has successfully supervised 21 PhD scholars and has published 85 research papers in UGC-listed, Scopus-indexed, and peer-reviewed journals. His work contributes significantly to taxonomy, conservation biology, and sustainable management of plant resources through rigorous field-based and analytical research.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the Lattice Science Publication (LSP)/ journal and/ or the editor(s). The Lattice Science Publication (LSP)/ journal and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.