

RESUME

SUROCHITA BASU, Ph.D.

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ACADEMIC QUALIFICATIONS

Ph.D. (Botany)	2008	Central Institute of Medicinal and Aromatic Plants, Lucknow	University of Lucknow	Chromosome and Genome identification through conventional and molecular cytogenetic analysis in certain medicinal plants, with major emphasis on <i>Chlorophytum</i> and <i>Aloe</i>
M.Sc. (Botany)	2001	University of Calcutta	University of Calcutta	69.5 Botany (Specialisation: Cell Biology, Molecular Genetics and Plant Tissue Culture)
B.Sc (Honours)	1999	Presidency College, Calcutta	University of Calcutta	61.6 Botany (Honours), Zoology, Chemistry
part I-1 st and 2 nd year	1996-			
part II-3 rd year	1998			
	1999			62.5 Botany (Honours)
Intermediate (10+2)	1995	Loreto Convent College, Lucknow	U.P. Board	69.2 Hindi, English, Biology, Physics, Chemistry
High School	1993	St. Agnes' Loreto Day School, Lucknow	I.C.S.E	81.5 English, Hindi, Mathematics, Science, History Civics Geography, Sanskrit

RESEARCH APTITUDE

Qualified **CSIR-UGC National Eligibility Test (NET)** jointly conducted by **CSIR** and **UGC** in **June 2001** as **CSIR- JRF** and **LS**.
Qualified Graduate Aptitude Test in Engineering (**GATE**) in **2002** with **96.69** percentile score

RESEARCH EXPERIENCE

Six years research experience in Cytogenetics and Medicinal & Aromatic Plant Breeding at Central Institute of Medicinal and Aromatic Plants as Research Fellow under the supervision of Prof. U.C. Lavanina from March 2002 to January 2008 (CSIR-JRF-NET & SRF) and Fourteen years research and teaching experience after Ph.D. Supervised one PhD. Candidate, Degree Awarded. **Citations 243, h-index 5, i10-index 3**

TEACHING EXPERIENCE

Two-year Teaching experience as Assistant Professor & Head In-Charge of Botany at R.K. Mahavidyalaya, Kailashahar, North Tripura; under Tripura University (April 2008-Feb2010) and more than twelve years as Assistant Professor of Botany at Tripura University, Suryamaninagar since Feb 2010- Till Date.

Participated in Orientation Programme 97 in 2009 and Refresher Course in Botany, Microbiology in 2013 at UGC-Academic Staff College, Lucknow University and Interdisciplinary Refresher Course on Naitalim in 2019 at FDC and Refresher course in Science and Technology in 2019, at Tripura University

AREA OF RESEARCH

Cytogenetics of medicinal plants; evolutionary evaluation of genome and chromosome structure through conventional and molecular cytogenetic analysis; Genetic manipulation of medicinal plants and progeny maintenance for crop improvement programme and evaluation of prospective better models; Fundamental research on karyotype and meiotic chromosome analysis in *Chlorophytum*, *Aloe*, *Costus* and *Ophiopogon*; Genetic manipulation and meiotic chromosome analysis of *Vetiveria*, *Withania*, *Bacopa* and *Cymbopogon*.

PUBLICATIONS AND HONOURS/AWARDS

Fourteen Research Papers, One Research Paper in Proceeding, Three papers as chapters in book, One US Patent and several abstracts and presentations in seminars/ conferences. Five National including two Gold Medal Awards and two International awards

RESEARCH SUPERVISION

Supervised one **INSPIRE Fellow** for Ph.D. Candidate **Debasree Lodh** awarded Ph.D. degree in 2018 on **“Chromosomal variations in some important plant species of Tripura used in Ayurveda”** The work led to identification of multiple cytotypes from natural populations of *Costus speciosus* and new distributional record of a species of *Mucuna* from the state of Tripura.

Supervised 24 M.Sc dissertations

PROJECT

Completed a Research Project on **Delineation of cytotypic diversity in *Costus Speciosus*, *Ophiopogon* and *Melastoma* of Tripura to elucidate significance of chromosomal variation in Conservation**; more than 10 lacs, funded by **CSIR, Government of India, 2016-2019**.

HONOURS/ AWARDS / FELLOWSHIPS

NATIONAL

1. National Scholarship of the Government of India in 1999 for standing in merit at B.Sc. level.
2. Junior and Senior Research Fellowship (CSIR-NET-JRF) 2001.
3. “Certificate of Merit” for Best poster presented during 25th Silver jubilee conference of the Indian Botanical Society held on 27th -29th October 2002
4. “Certificate of Merit” for Best poster presented during 26th Annual conference of the Indian Botanical Society held on 28th -31st December 2003
5. “Certificate of Merit” for Best poster presented during 27th Annual conference of the Indian Botanical Society held on 29th -31st October 2004
6. “K.S. Bilgrami Gold Medal” for Young Botanist 2006 for Best poster presented 29th Annual conference of the Indian Botanical Society held at ML Sukhadia University, Udaipur during 9th -11th Oct.2006.
7. “Prof. S. N. Dixit Gold Medal” for Best Poster Presentation at the 40th All India Botanical conference of the Indian Botanical Society held at Punjabi University, Patiala during 15th -17th September 2017

INTERNATIONAL

1. “Certification Of Technical Excellence (Class II)” for excellence in Research and other uses by International Vetiver Network, USA in 2006
2. “Certification Of Excellence (The King of Thailand Vetiver Awards)” for excellence in Research in Vetiver in Agricultural Sciences by Fifth International Conference on Vetiver in 2011

MEMBERSHIP

Life member of Indian Science Congress Association

Life member of Indian Botanical Society

PATENT

1. **US Plant Patent No. PP26,47** Filing No 13/506,598 Inventors: Lavania UC, Rai SK, Lavania S, Basu S, Dubey BK, Ram Ujagir. Autotetraploid *Vetiveria zizanioides* plant useful for carbon sequestration and soil conservation named ‘CIMAP-KH 40’

RESEARCH PAPERS IN INTERNATIONAL/ NATIONAL JOURNALS

1. Srivastava S, Lavania UC, Mishra NK, **Basu S, 2002:** Chromosome behaviour in diploid and its bearing on tetraploid meiosis in *Bacopa monnieri* (L) Pennell. *Nucleus* **45:** 57-60. (IF: 0.57) ISSN 0976-7975.
2. Lavania UC, **Basu S**, Srivastava S, Mukai Y, Lavania S, **2005:** In Situ Chromosomal Localization of r-DNA Sites In ‘Safed Musli’ *Chlorophytum* Ker Gawl and their Physical Measurement by Fiber FISH. *Journal of Heredity* **96:** 155-160. (IF: 2.81) ISSN 1465-7333.
3. Lavania UC, Misra NK, Lavania S, **Basu S**, Srivastava S, **2006:** Mining de novo diversity in palaeopolyploids. *Current Science* **90 (7):** 938-941. (IF: 0.72) ISSN 0011-3891.
4. Lavania UC, Kushwaha JS, Lavania S, **Basu S 2010:** Chromosomal Localization of rDNA and DAPI bands in solanaceous medicinal plant *Hyoscyamus niger* L. *Journal of Genetics* **89 (4):** 493-496. (IF: 1.18) ISSN 1673-8527.
5. Lavania UC, Srivastava S, Lavania S, **Basu S**, Misra NK, Mukai Y **2012:** Autopolyploidy differentially influences body size in plants, but facilitates enhanced accumulation of secondary metabolites, causing increased cytosine methylation. *The Plant Journal* **71 (4):** 539-549. (IF: 6.58) ISSN 0960-7412.
6. Lodh D, **Basu S 2013:** Karyomorphological analysis and cytotypic diversity in natural populations of *Costus speciosus* Koen. ex Retz. *Nucleus* **56(3):**155-162. (IF: 0.56) ISSN 0976-7975.
7. Lavania UC, **Basu S**, Kushwaha JS, Lavania S **2014:** Seasonal temperature variations influence tapetum mitosis patterns associated with reproductive fitness. *Genome* **57(9):**517-521. (IF: 2.16) ISSN 0831-2796.
8. **Basu S**, Lodh D **2018:** Artificial induction of polyploidy in *Andrographis paniculata* (Burm.F.) Wall ex Nees. *J. Indian Bot. Soc.* **97(1):**21-28. (IF: 0.88). ISSN 0019-4468.
9. **Basu S 2019:** Meiotic correlations and bound arm associations between the diploid and autotetraploid of *Withania somnifera* (L.) Dunal, and implications on genetic stability. *Nucleus* **62(1):**15-20. (IF: 0.56) ISSN 0976-7975.
10. Das P, Pal S, **Basu S 2020:** Metabolic adaptability in liver and gastrocnemius muscle of mice following subacute lead toxicity. *Toxicology and Industrial Health* **36(7):** 487-501. (IF: 1.71). ISSN 0748-2337.
11. **Basu S**, Brahma R **2020:** Chromosomal aberrations in *Allium cepa* induced by drinking water samples: A case study. *Inter. J. Geo. Earth Env. Sci.* **10(3):** 100-108. ISSN 2277-2081.
12. **Basu S**, Majumdar R **2020:** Differential cytotoxicity of *Melastoma malabathricum* L. aqueous extract on root meristem cells of *Allium cepa* L. *Inter. J. Sci. Inno. Res.* **8(1):** 24-44. ISSN 2347-2189.

13. **Basu S, Tripura K 2021:** Differential sensitivity of *Allium cepa* L. and *Vicia faba* L. to aqueous extracts of *Cascabela thevetia* (L.) Lippold. ***South African J. Botany* 139:** 67-78. (IF 2.32) ISSN 0254-6299.
14. Nath B, **Basu S 2021:** Genotoxic effect of *Clerodendrum infortunatum* L. aqueous leaf decoction on root meristem cells of *Allium cepa* L. ***Journal of Scientific Research* 65(5):** 56-61. ISSN 0447-9483.

RESEARCH PAPERS IN PROCEEDINGS

1. Lavania UC, **Basu S, Lavania S 2006:** Towards Bio-Efficient and Non-Invasive Vetiver: Lessons from Genomic Manipulation and Chromosomal Characterization. In Proceedings of the Fourth International Vetiver Conference.

RESEARCH PAPERS IN BOOKS

1. Lodh D, Patari P, **Basu S, Jasim Uddin Md 2017:** Diversity, Botany and Importance of two *Mucuna* species: *M. bracteata* DC. and *M. interrupta* Gagnep. in Tripura. In Trends in Frontal Areas of Plant Science Research. Ed. S.Sinha, R.K. Sinha, Narosa Publishing House:181- 189. **ISBN 978-81-8487-605-5**
2. Patari P, **Basu S 2019:** Chromosome Damage in root meristem cells of *Allium cepa* upon treatment with aqueous extract of *Mucuna monosperma* Dc. In Recent trends in Biodiversity Conservation and Bio-resource Utilization. Ed. A. Guha, D.Sen, New Delhi Publishers:293-299. **ISBN 978-93-88879-27-9**
3. Reang J.S., **Basu S 2021:** Cytotoxicity assessment of *Diospyros lanceifolia* Roxb. using *Allium cepa* test. In Biological Sciences: Impacts on Modern Civilization, Current and Future Challenges. Ed. Anupam Guha, New Delhi Publishers, New Delhi: 167- 175. **ISBN 978-81-947417-4-9**, DOI: 10.30954/ndp.bio.2020.15

ABSTRACTS/ PAPERS IN CONFERENCES AND SEMINARS

1. Lavania UC, Mishra NK, Srivastava S, **Basu S, Lavania S (2002)** Bud sports in *Mentha arvensis* ***Jour. Indian Bot. Soc.* 81 S:** 60.
2. Basu S (2003) Somatic and mitotic characterization of *Chlorophytum comosum* Jacques. ***Jour. Indian Bot. Soc.* 82 S:** 86.
3. Srivastava S, Mishra NK, **Basu S (2003)** Cytogenetic evaluation and breeding perspectives of induced autotetraploids vis a vis genotypic diversity in the Aromatic Grass *Cymbopogon martinii*. **Abstracts S:** 79.
4. Lavania UC, Mishra NK, Srivastava S, **Basu S, Kushwaha JS, Lavania S (2004)** Bud sport variation: A potential genetic resource for secondary metabolite prospecting in *Mentha arvensis* ***Jour. Indian Bot. Soc.* 83 S:** 70.
5. Basu S (2006) Genomic multiplication facilitates non-invasive and bio-efficient features in

Vetiver. *Jour. Indian Bot. Soc. Abstracts S*: 170.

6. Basu S, Kushwaha JS (2006) Mitotic patterns during syncyte formation in tapetal cells of *Cymbopogon jwarunkusha* X *C. confertiflorus*. *Jour. Indian Bot. Soc. Abstracts S*: 86.
7. Basu S, Lavania UC (2008) Karyotype Orthoselection in Aloe. *Jour. Indian Bot. Soc.* 86 S: 295.
8. Lavania UC, Basu S, Kushwaha JS, Srivastava S, Lavania S (2011) Clonal polyploids in the aromatic grasses, the Cymbopogon, Breeding prospects and seasonal variation in reproductive fitness. . *Jour. Indian Bot. Soc Abstract*: 214.
9. Basu S, Verma D, Lavania S (2011) Essential oil accumulating cells in vetiver roots necessitate microbial associations for oil biogenesis. *Abstract S*: 44.
10. Lavania UC, Srivastava S, Rai SK, Basu S, Verma D, R Seema, Lavania S (2011) Botanical, Cytogenetical and Molecular characterization of the two common species of *Vetiveria*, and ploidy mediated reduced fertility. *Abstract S*: 44
11. Rai SK, Basu S, Srivastava S (2013) DNA marker, ITS nrDNA sequence and karyomorphology based characterization of oleiferous and non-oil species of *Vetiveria* L. 100th ISCA
12. Lodh D, Basu S (2013) Chromosomal characteristics of *Ophiopogon japonicas* (L.f) KerGawl. 100th ISCA
13. Basu S (2014) Cytotoxic effect of *Diospyros lanceifolia* Roxb. on root cells of *Allium cepa*. *Jour. Indian Bot. Soc.* 92 S.
14. Basu S (2015) Mitigation of genetic variation in *Withania somnifera* through polyploid intervention. 102nd ISCA
15. Lodh D, Basu S (2015) Facultative pseudovivipary and ant interaction in *Costus speciosus* (Koen. ex. Retz.) 102nd ISCA
16. Basu S (2015) The Fascinating World of FISH. Seminar on Advances in Modern Biotechnology, State Biotech Hub, Tripura University
17. Basu S (2016) Cytotoxic effect of Indian cedar aqueous wood extract on meristem cells of *Allium cepa*. *Jour. Indian Bot. Soc. Abstract S*.
18. Basu S and Srivastava S (2017) Karyomorphological variations vis-a-vis polyploidy and speciation in *Chlorophytum* Ker Gawl. *Jour. Indian Bot. Soc. Abstract S*.
19. Basu S and Nath B. (2017) Evaluation of cytotoxic potential of *Clerodendrum infortunatum* L. using *Allium cepa* test. In 104th ISCA
20. Basu S (2020) Cytotoxic effects of *Melastoma malabathricum* L. water extract on *Allium cepa* L. In 107th ISCA
21. Basu S (2021) Development of Shoot apical meristem: A perspective. *Jour. Indian Bot. Soc. Abstract S*.