




Faculty Details proforma for DU Web-site

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Title	Professor	First Name	Indranil	Last Name	Dasgupta	Photograph
Designation	Professor					
Address	Department of Plant Molecular Biology University of Delhi South Campus Benito Juarez Road, New Delhi-110021					
Phone No	Office	011-24111639				
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Web-Page						
Educational Qualifications						
Degree	Institution				Year	
B.Sc. (Hons.)	Presidency College, Kolkata				1977	
M.Sc.	Jawaharlal Nehru University, New Delhi				1980	
Ph.D.	Jawaharlal Nehru University, New Delhi				1987	
Career Profile						
2004- present: University of Delhi South Campus, Professor						
1996-2004: University of Delhi South Campus, Reader						
1993-1996: TERI, New Delhi, Fellow						
1988-1993: John Innes Centre, Norwich, U.K., Higher Scientific Officer						
1987-1988: Jawaharlal Nehru University, New Delhi, Research Scientist.						
Administrative Assignments						
Chair, Governing Body, Maitreyi College, University of Delhi (2013-2017)						
Dean, Faculty of Interdisciplinary and Applied Sciences, University of Delhi (2012-2013)						
Head, Department of Plant Molecular Biology, University of Delhi (2010-2013)						
Provost, Aravali and Saramati Hostels, University of Delhi South Campus (2015-2019).						
Areas of Interest / Specialization						
Molecular biology of plant-virus interactions, genetically engineered viral resistance in crop plants, analysis of genes of plant viruses, use of modified plant viruses in gene expression and gene silencing, plant responses to biotic stress.						
Subjects Taught						
Molecular genetics and prokaryotic gene expression at the M.Sc. level and advanced plant virology and plant-virus interactions at the Ph.D. level.						
Time table of the subjects taught during the current semester						

Research Guidance

Has guided 20 Ph.D., 2 M.Phil. and 20 M.Sc. students till date. Currently, guiding 5 Ph.D. and 1 M.Sc. student.

Publications Profile (till 2018)

1. Krupovic, M., Blomberg, J., Coffin, J. M., Dasgupta, I., Fan, H., Geering, A. D., Gifford, R., Harrach, B., Hull, R., Johnson, W., Kreuze, J. F., Lindermann, D., Llorens, C., Lockhart, B., Mayer, J., Muller, E., Olczewski, N. E., Pappu, H. R., Pooggin, M. M., Richert-Poeggeler, K. R., Sabanadzovic, S., Sanfacon, H., Schoelz, J. E., Seal, S., Stavalone, L., Stoye, J. P., Teycheney, P. -Y., Tristem, M., Konin, E. V., Kuhn, J. H. (2018) *Ortervirales*: A new virus order unifying five families of reverse-transcribing viruses. *Journal of Virology* 92:e00515-18. <https://doi.org/10.1128/JVI.00515-18>.
2. Kushawaha, A. K., Rabindran, R. and Dasgupta, I. (2018) Rolling circle amplification based analysis of Sri Lankan cassava mosaic virus isolates from Tamil Nadu, India suggests a low level of genetic variability. *VirusDisease* 29(1): 61-67. DOI10.1007/s13337-018-0432-x.
3. Johnson, A. M. A., Sai Gopal, D. V. R., Sudhakar, C. and Dasgupta, I. (2017) Citrus yellow mosaic virus infecting *Citrus sp.*: a threat to the citrus industry and quarantine issue. *Journal of General Plant Pathology* 83:57-65.
4. Thompson, J.R., Dasgupta, I., Fuchs, M., Iwanami, T., Karasev, A.V., Petrzik, K., Sanfacon, H., Tzanetakis, I., van der Vlugt, R., Wetzel, T., Yoshikawa, N. and ICTV Report Consortium (2017). ICTV Virus Taxonomy Profile: *Secoviridae*. *Journal of General Virology* 98: 529-531.
5. Kant, R. and Dasgupta, I. (2017) Phenotyping of VIGS-mediated gene silencing in rice using a vector derived from a DNA virus. *Plant Cell Reports* 36: 1159-1170.
6. Borah, B.K., Zarreen, F., Baruah, G. and Dasgupta, I. (2016) Insights into the control of geminiviral promoters. *Virology* 495: 101-111.
7. Valarmathi, P., Kumar, G., Robin, S., Manonmani, S., Dasgupta, I. and Rabindran, R. (2016) Evaluation of virus resistance and agronomic performance of rice cultivar ASD 16

after transfer of transgene against *Rice tungro bacilliform virus* by backcross breeding. *Virus Genes* 52: 521-529.

8. Kelkar, V., Kushawaha, A.K. and Dasgupta, I. (2016) Identification of amino acid residues of the coat protein of *Sri Lankan cassava mosaic virus* affecting symptom production and viral titer in *Nicotiana benthamiana*. *Virus Research* 217: 38-46.
9. Singh, A., Saraf, S., Dasgupta, I. and Mukherjee, S.K. (2016) Identification and validation of a virus-inducible tasi-RNA-generating TAS4 locus in tomato. *Journal of Biosciences* 41(1): 109-118.
10. Rishishwar, R., Mazumdar, B. and Dasgupta, I. (2015) Diverse and recombinant begomoviruses and various satellites are associated with Bhendi yellow vein mosaic disease of okra in India. *Journal of Plant Biochemistry and Biotechnology*. 24: 470-475.
11. Kant R., Sharma S. and Dasgupta I. (2015) Virus-induced gene silencing (VIGS) for functional genomics in rice using Rice tungro bacilliform virus (RTBV) as a vector, In, *Methods in Molecular Biology* 1287: 201-217.
12. Kushawaha, A.K., Rabindran, R. and Dasgupta, I. (2015) Phylogenetic analysis and biolistic infectivity of cloned *Sri Lankan cassava mosaic virus* DNA-A from Tamil Nadu, India on *Nicotiana benthamiana*. *Acta Virologica* 59 (1): 57-63.
13. Singh, A., Taneja, J., Dasgupta, I. and Mukherjee, S.K. (2014) Development of plants resistant to tomato geminiviruses using artificial trans-acting small interfering RNA. *Molecular Plant Pathology* 16(7): 725-734.
14. Johnson, A.M.A., Dasgupta, I. and Sai Gopal, D.V.R. (2014) Development of Loop mediated isothermal amplification and SYBR Green Real time PCR methods for the detection of *Citrus yellow mosaic badnavirus* in citrus. *Journal of Virological Methods* 203: 9-14.
15. Jyothsna, M., Manonmani, S., Rabindran, R., Dasgupta, I. and Robin, S. (2013) Introgression of transgenic resistance for tungro disease into mega variety ASD16 of Tamil Nadu through marker-assisted backcross breeding. *Madras Agricultural Journal* 100(1-3): 70-74.
16. Borah, B.K., Sharma, S., Kant, R., Johnson, A.M.A., Saigopal, D.V.R. and Dasgupta, I. (2013) Bacilliform DNA-containing plant viruses in the tropics: commonalities within a genetically diverse group. *Molecular Plant Pathology* 14(8): 759-771.
17. Purkayastha, A., Sharma, S. and Dasgupta, I. (2013) Virus-induced gene silencing for rice using agroinoculation: *Methods in Molecular Biology* 975: 33-45, In: *Virus-Induced Gene Silencing, Methods and Protocols*, Ed: Becker, A., Springer Science + Business Media,

LLC, Humana Press, New York.

18. Mathur, S. and Dasgupta, I. (2013) Further support of genetic conservation in Indian isolates of Rice tungro bacilliform virus by sequence analysis of an isolate from North–Western India. *Virus Genes* 46: 387-391.
19. Johnson, A.M.A., Borah, B.K., Saigopal, D.V.R. and Dasgupta, I. (2012) Analysis of fulllength sequences of two *Citrus yellow mosaic badnavirus* isolates infecting *Citrus jambhiri* (Rough Lemon) and *Citrus sinensis* L. Osbeck (Sweet Orange) from a nursery in India. *Virus Genes* 45: 600-605.
20. Verma, V., Sharma, S., Vimla Devi, S., Rajasubramaniam, S. and Dasgupta, I. (2012) Delay in virus accumulation and low virus transmission from transgenic plants expressing Rice tungro spherical virus RNA. *Virus Genes* 45: 350-359.
21. Borah, B. K. and Dasgupta, I. (2012a) PCR-RFLP analysis indicates that recombination might be a common occurrence among the cassava infecting begomoviruses in India. *Virus Genes* 45: 327-332.
22. Borah, B. K. and Dasgupta, I. (2012b) Begomovirus research in India: A critical appraisal and the way ahead. *Journal of Biosciences* 37: 791-806.
23. Sharma, S. and Dasgupta, I. (2012) Development of SYBR Green I based real time PCR assays for quantitative detection of *Rice tungro bacilliform virus* and *Rice tungro spherical virus*. *Journal of Virological Methods* 181: 86-92.
24. Roy, S, Banerjee, A, Tarafdar, J, Senapati, BK and Dasgupta, I. (2012) Transfer of transgenes for resistance to rice tungro disease into high yielding rice cultivars through gene based marker-assisted selection. *The Journal of Agricultural Science* 150: 610-618.
25. Baskaran, P and Dasgupta, I. (2012) Gene delivery using microinjection of agrobacterium to embryonic shoot apical meristem of elite *indica* rice cultivars. *Journal of Plant Biochemistry and Biotechnology* 21 (2): 268-274.
26. Sharma, S, Rabindran, R, Robin, S and Dasgupta, I. (2011) Analysis of the complete sequence of rice tungro bacilliform virus from southern India indicates it to be a product of recombination. *Archives of Virology* 156: 2257-2262.
27. Borah, BK, Cheema, GS, Gill, CK and Dasgupta, I. (2011) A geminivirus-satellite complex is associated with Leaf deformity of Mentha (mint) plants in Punjab. *Indian Journal of Virology* 21(2): 103-109.
28. Purkayastha, A, Sharma, S and Dasgupta, I. (2010) A negative element in the downstream region of the *Rice tungro bacilliform virus* promoter is orientation- and

position-independent and is active with heterologous promoters. *Virus Research* 153: 166-171.

29. Purkayastha, A, Mathur, S, Verma, V, Sharma, S and Dasgupta, I. (2010) Virus-induced gene silencing in rice using a vector derived from a DNA virus. *Planta* 232: 1531-1540.
30. Borah, BK., Sai Gopal, DVR and Dasgupta, I. (2009). PCR-RFLP shows high genetic diversity of *Citrus yellow mosaic badnavirus* in southern India. *Indian Journal of Virology* 20 (2): 12-16.
31. Purkayastha, A and Dasgupta, I. (2009). Virus-induced gene silencing: A versatile tool for discovery of gene functions in plants. *Plant Physiology and Biochemistry* 47: 967-976.
32. Borah, BK, Johnson, AMA, Sai Gopal, DVR and Dasgupta, I (2009) Sequencing and computational analysis of complete genome sequences of Citrus yellow mosaic badnavirus from acid lime and pummelo. *Virus Genes* 39: 137-140.
33. Ganesan, U, Suri, SS, Rajasubramaniam, S, Rajam, MV and Dasgupta, I. (2009) Transgenic expression of coat protein gene of *Rice tungro bacilliform virus* in rice reduces the accumulation of viral DNA in inoculated plants. *Virus Genes* 39:113–119.
34. Mittal, D, Borah, BK and Dasgupta, I. (2008) Agroinfection of cloned Sri Lankan cassava mosaic virus DNA to *Arabidopsis thaliana*, *Nicotiana tabacum* and cassava. *Archives of Virology* 153: 2149-2155.
35. Borah, BK, Johnson, AMA, Sai Gopal, DVR and Dasgupta, I. (2008) A comparison of four DNA extraction methods for the detection of Citrus yellow mosaic badnavirus from two species of citrus using PCR and dot-blot hybridisation. *Journal of Virological Methods* 151:321-324.
36. Tyagi, H, Rajasubramaniam, S., Rajam, MV and Dasgupta, I. (2008) RNA-interference in rice against Rice tungro bacilliform virus results in its decreased accumulation in inoculated rice plants. *Transgenic Research* 17:897-904
37. Tyagi, H, Rajasubramaniam, S and Dasgupta, I. (2007) Regeneration and *Agrobacterium*-mediated transformation of a popular *indica* rice variety ADT39. *Current Science* 93(5): 678-683.
38. Mathur, S and Dasgupta, I. (2007) Downstream promoter sequence of an Indian isolate of *Rice tungro bacilliform virus* alters tissue-specific expression in host rice and acts differentially in heterologous systems. *Plant Molecular Biology* 65(3): 259-275.
39. Verma, V and Dasgupta, I. (2007) Molecular analysis of coat protein genes of *Rice tungro spherical virus* from eastern and southern India. *Indian Phytopathology* 60(1);

99-104.

40. Verma, V and Dasgupta, I. (2007) Sequence analysis of the complete genomes of two *Rice tungro spherical virus* isolates from India. *Archives of Virology* 152 (3); 645-648.
41. Patil, BL, Dutt, N, Briddon, RW, Bull, SE, Rothenstein, D, Borah, BK, Dasgupta, I, Stanley, J and Jeske, H. (2007) Deletion and recombination events between the DNA-A and DNA-B components of Indian cassava-infecting geminiviruses generate defective molecules in *Nicotiana benthamiana*. *Virus Research* 124; 59-67.
42. Patil, BL and Dasgupta, I. (2006) Defective Interfering DNAs of Plant Viruses *Critical Reviews in Plant Sciences* 25:47-64.
43. Rothenstein, D, Haible, D, Dasgupta, I, Dutt, N, Patil, BL and Jeske, H. (2006) Biodiversity and recombination of cassava-infecting begomoviruses from southern India. *Archives of Virology* 151(1): 55-69.
44. Dutt, N, Briddon, RW and Dasgupta, I. (2005) Identification of a second begomovirus, Sri Lankan cassava mosaic virus, causing cassava mosaic disease in India. *Archives of Virology*, 150(10); 2101-2108.
45. Patil, BL, Rajasubramaniam, S, Bagchi, C and Dasgupta, I. (2005) Both Indian cassava mosaic virus and Sri Lankan cassava mosaic virus are found in India and exhibit high variability as assessed by PCR-RFLP. *Archives of Virology* 150(2); 389-397.
46. Niazi, FR, Dasgupta, I, Singh, J, Mathur, S and Varma, A. (2005) Characterization of new strains of rice tungro viruses. *Indian Phytopathology* 58(3); 308-313.
47. Joshi, R, Kumar, V and Dasgupta, I. (2003) Detection of molecular variability in rice tungro bacilliform viruses from India, using polymerase chain reaction-restriction fragment length polymorphism. *Journal of Virological Methods* 109; 89-93.
48. Dasgupta, I, Malathi, VG and Mukherjee, SK (2003) Genetic engineering for virus resistance. *Current Science* 84(3); 341-354.
49. Nath, N, Mathur, S and Dasgupta, I. (2002) Molecular analysis of two complete rice tungro bacilliform virus sequences from India. *Archives of Virology* 147; 1173-1187.
50. Joshi, R and Dasgupta, I. (2001) Cloning and molecular analysis of DNA of rice tungro bacilliform virus from different rice growing regions of India. *Indian Phytopathology* 54(4); 469-475.
51. Dasgupta, I. (1999) Recent developments in the molecular biology of rice tungro viruses. *Indian Journal of Virology* 15(1); 7-13.

52. Varma, A, Niazi, FR, Dasgupta, I, Singh, J, Cheema, SS and Sokhi, SS. (1999) Alarming epidemic of rice tungro disease in North-West India. *Indian Phytopathology* 52; 71-74.
53. Dasgupta, I, Das, BK, Nath, PS, Mukhopadhyay, S, Niazi, FR and Varma, A. (1996) Detection of rice tungro bacilliform virus in field and glasshouse samples from India using polymerase chain reaction. *Journal of Virological Methods* 58; 53-58.
54. Fan, Z, Dahal, G, Dasgupta, I, Hay, J and Hull, R. (1996) Variation in the genome of rice tungro bacilliform virus: molecular characterization of six isolates. *Journal of General Virology* 77; 847-854.
55. Futterer, J, Potrykus, I, Valles-Brau, MP, Dasgupta, I, Hull, R and Hohn, T. (1994). Splicing in a plant pararetrovirus. *Virology* 198(2); 663-670.
56. Dahal, G, Dasgupta, I, Lee, G and Hull, R. (1992) Comparative transmission of three isolates of rice tungro virus by green leafhopper. *International Rice Research Newsletter* 17(3); 19.
57. Dahal, G, Dasgupta, I and Hull, R. (1992) Comparative transmission of, and varietal reaction to, three isolates of rice tungro disease. *Annals of Applied Biology* 120; 287-300.
58. Hay, JM, Jones, MC, Blakebrough, ML, Dasgupta, I, Davies, JW and Hull, R. (1991) An analysis of the sequence of an infectious clone of rice tungro bacilliform virus, a plant pararetrovirus. *Nucleic Acids Research* 19 (10); 2615-2621.
59. Jones, MC, Gough, K, Dasgupta, I, Subba Rao, BL, Cliffe, J, Qu, R, Shen, P, Kaniewska, M, Blakebrough, M, Davies, JW, Beachy, RN and Hull, R. (1991) Rice tungro disease is caused by a RNA and a DNA virus. *Journal of General Virology* 72; 757-761.
60. Dasgupta, I, Hull, R, Eastop, S, Poggi-pollini, C, Blakebrough, M, Boulton, MI and Davies, JW. (1991) Rice tungro bacilliform virus DNA independently infects rice after *Agrobacterium*-mediated transfer. *Journal of General Virology* 72; 1215-1221.

Publications in the Last one year

1. Kumar, G., Zarreen, F. and Dasgupta, I. (2020) Rice Tungro Disease, In: Encyclopedia of Virology, Elsevier. Doi: 10.1016/B978-0-12-809633-8.21243-0.
2. Kumar, G. and Dasgupta, I. (2020) Comprehensive molecular insights into the stress response dynamics of rice (*Oryza sativa* L.) during rice tungro disease by RNA Seq-based comparative whole transcriptome analysis. *Journal of Biosciences* 45: 27.
3. Sanfacon, H., Dasgupta, I., Fuchs, M., Kasarev, A. V., Petrzik, K., Thompson, J. R.,

Tzanetakis, I., van der Vlugt, R., Wetzler, T. and Yoshikawa, T. (2020) Proposed revision of the family Secoviridae taxonomy to create three subgenera, "Satsumavirus", "Stramovirus" and "Cholivirus" in the genus Sadwavirus. *Archives of Virology* 165: 527-533.

4. Kushawaha, A. K. and Dasgupta, I. (2019) Infectivity of cloned begomoviral DNAs: an appraisal. *VirusDisease* 30: 13-21, DOI 10.1007/s13337-018-0453-5.
5. Rishishwar, R. and Dasgupta, I. (2019) Suppressors of RNA silencing encoded by geminiviruses and associated DNA satellites. *VirusDisease* 30: 58-65, DOI 10.1007/s13337-108-0418-8.
6. Malathi, V. G. and Dasgupta, I. (2019) Insights into the world of ssDNA viruses. *VirusDisease* 30: 1-2.
7. Kant, R. and Dasgupta, I. (2019) Gene silencing approaches through virus-based vectors: speeding up functional genomics in monocots. *Plant Molecular Biology* 100: 3-18.
8. Gogoi, A., Kaldis, A., Dasgupta, I., Borah, B. K. and Voloudakis, A. (2019) Sense and antisense-mediated resistance against Sri Lankan cassava mosaic virus (SLCMV) in *Nicotiana benthamiana*. *Biologia Plantarum* 63: 455-464.
9. Singh, A., Mohorianu, I., Green, D., Dalmay, T., Dasgupta, I. and Mukherjee, S. K. (2019) Artificially induced phased siRNAs promote viral resistance in transgenic plants. *Virology* 537: 208-215.
10. Kumar, G., Jyothsna, M., Valarmathi, P., Roy, S., Banerjee, A., Tarafdar, J., Senapati, B. K., Robin, S., Manonmani, S., Rabindran, R. and Dasgupta, I. (2019) Assessment of resistance to rice tungro disease in popular rice varieties in India by introgression of a transgene against rice tungro bacilliform virus. *Archives of Virology* 164: 1005-1013.
11. Naresh, M., Khan, Z. A., Kumar, R., Kale, S. P., Patil, V. M., Rajput, J. C. and Dasgupta, I. (2019) Occurrence and variability of begomoviruses associated with bhendi yellow vein mosaic and okra enation leaf curl diseases in south-western India. *VirusDisease* 30: 511-525.

Conference Organization/ Presentations (in the last three years)

1. VIROCON 2017 at NITTE University, Mangaluru (7th-9th December, 2017). Delivered a Lead Lecture and Chaired a Session.
2. VIROCON 2018 at PGIMER, Chandigarh (12th-14th November, 2018). Organized a session and delivered a talk.
3. VIROCON 2020 at Indian National Science Academy, New Delhi (18th -20th February, 2020). Delivered a keynote presentation and chaired a session.

Research Projects (Major Grants/Research Collaboration)

Title of project: The J. C. Bose Fellowship

<p>Funding agency: Department of Science and Technology, Government of India Amount in lakhs of rupees: 95.0 Date of sanction and duration: 17.03.2017 for five years.</p>
<p>Awards and Distinctions</p> <p>Fellow, National Academy of Sciences India, Allahabad (2009) Fellow, Indian Academy of Sciences, Bangalore (2010) Fellow, Indian National Science Academy, New Delhi (2014) Visiting Professorship, Northwest University of Agriculture and Forestry, China (2015) The J. C. Bose Fellowship (2017)</p>
<p>Association With Professional Bodies</p> <p>Member, Editorial Board, Virus Disease Vice-President, Indian Virological Society Member, Working Group on Caulimoviridae and Working Group on Secoviridae, International Committee on the Taxonomy of Viruses</p>
<p>Other Activities</p> <p>1. Holder of the following patents: a) Indian Patent No. 278167 entitled "A DNA construct for gene silencing in rice" b) US Patent no. 07728122 entitled "RTBV promoter and process thereof" c) Eurasian patent no. 013229 entitled same as above. All three patents awarded jointly to University of Delhi and Department of Biotechnology, Government of India.</p> <p>2. Technology transfer: Technology related to expression of heterologous genes by the use of RTBV promoter, developed at the University of Delhi South Campus was transferred to Bejo Sheetal Seeds, Jalna, Maharashtra on 24.11.2008.</p>



Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.