

## Dr. Timir Baran Jha

**Designation- Former Professor**

**Qualification- M.Sc., Ph.D.**

Title of Ph.D. Thesis, Institution & Year:

Title of the thesis: "Isolation and Study of Plant Protoplasts and Study of Chromosomal behaviour of Callus Tissue during their Growth *in vitro*"

Institute: Calcutta University

Year: 1982



### **Brief Introduction-**

Prof. Timir Baran Jha did M.Sc. in Botany with Cytogenetics specialization from Calcutta University in 1975 with First Class marks. He has nearly four decades of Research experience in the field of Plant Biotechnology and Plant Chromosome and was awarded Ph. D. from Calcutta University in 1982 on the topic "**Isolation and Study of Plant Protoplasts and Study of Chromosomal behaviour of Callus Tissue during their Growth *in vitro***". He has worked as Additional Director of Public Instructions (Administration) in the Higher Education Directorate, Govt. of West Bengal from April 1998- April 2002.

### **Current Teaching Topics-**

Plant Biotechnology, Tissue Culture, Plant Cytogenetics.

### **Experience -**

Prof. Jha served different Government Colleges of West Bengal (1979-1995) under West Bengal Education Service (WBES) and 1995-2014 under West Bengal Senior Educational Service (WBSES) in academic field. He taught Under Graduate and Post Graduate courses in Botany for more than 34 years. He worked as Convener for Board of P. G. studies in Botany for about five years. He has Served PG Dept. of Botany, Barasat Govt. College as Professor of Botany from 2013-2014 and Erstwhile Presidency College and Now Presidency University as Professor and Head, Department of Botany from 2002-2013. He also worked as Coordinator, Department of Biotechnology, Presidency University from 2009 to August 2012.

### **He also served as:**

- Coordinator DST-FIST Programme, Dept. of Botany Presidency University (2003-2013).
- Coordinator DBT STAR College scheme for Life Science departments in Presidency University (Formerly presidency College), sponsored by the Department of Biotechnology, Govt. of India (2009 – 2012)
- Officer on Special Duty (OSD, Additional assignment) , Presidency University ; Dec.2010 – August 2012
- Served Post Graduate Department of Botany, Darjeeling Govt. College as Prof. & Head from 1995 to 1998.
- Guest teaching in the Department of Genetics, University of Calcutta ( 2015-2017)
- Guest teaching in the PG Department of Botany, RKMVC College Rahara (2015-2017)

### **Research Interest -**

Nearly four decades of research experience in the field of

- **Plant Biotechnology** Protoplast culture, Micropropagation, Analysis of Secondary metabolites, Plant DNA fingerprinting ,in many economically important crop plants
- **Plant Chromosome.** The primary objective of plant chromosome analysis is to prepare Chromosomal data base on important crops like Lentil, Capsicum, Sesamum, Rice etc using molecular cytogenetic methods. For the first time in India we have used fluorescent and non fluorescent dyes for characterization of plant chromosomes of Lentil (Musur), Capsicum(Chilli), Sesamum(Til ) etc.

### **Completed Projects with Funding Agency-**

#### **Research Projects: ( 2018 - 1988)**

- 2015 - 2018: Awarded UGC Major Research Project on Karyosystematic Analysis of Indian Lentils Through Fluorescent Chromosome Banding. Approximate amount 16L

#### **Completed**

- 2012 -2015: ICMR : Co.PI Project on "Documentation of genetic and phytochemical variations and assessment of Immunomodulatory and anticancer activities of *Gymnema sylvestre (retz)r.Br &S and newly described species Gymnema kollimalayanum Ramach & M.B Viswan, from Eastern India and Western Ghats*", in Collaboration with RMRC , Belgaum, Karnataka. Approximate amount Rs. 22 L (Completed)
- 2009 - 2012: P.I. of a CSIR sponsored project on "Analysis of Important Bioactive Compounds and Genomic DNA Polymorphism in *Swertia*". amount Rs. 16.9L
- 2008-2011: Co.PI, UGC Major. Detection and Chemical analysis of myo-inositol biosynthesis in some vascular cryptogams under in vivo and in vitro conditions. amount Rs. 7L

- 2007-2010: P.I of WB DST sponsored project on Micropropagation of Chlorophytum and Glycyrrhiza. amount Rs. 15L
- 2004-2007: P.I. of C.S.I.R. (Govt. of India) funded project on “ Germplasm preservation & clonal propagation of medicinally important Swertia species” amount Rs. 18L
- 2003- 2006: P.I of UGC (Govt of India) sponsored project on " Micropropagation and chemical analysis of Ephedra" amount Rs. 6L
- 1997-2000: Co-PI of Department of Biotechnology , (Government of India) sponsored project on "Anther culture, somatic embryogenesis and artificial seed production in tea" in collaboration with Dr. S. Jha, (PI), CAS, Department of Botany), CU. amount Rs. 27L
- 1996-1998: Principal Investigator of UGC sponsored minor research project entitled “ Studies on pattern of genetic and nongenetic variation in Taxol content in natural populations of Himalayan Yew *Taxus baccata*" amount Rs. 1L
- 1992-1995: Co-Investigator In charge of Department of Science & technology (Government of India) sponsored project on "Micropropagation of Cashewnut" being implemented at Tissue Culture Lab, CAS, Department of Botany, University of Calcutta in collaboration with DR S JHA (PI) amount Rs. 5L
- 1988-1991: Principal Investigator, Department of Science & technology (Government of India) sponsored project on "Mass propagation of Tea Varieties Growing in Darjeeling District through Tissue Culture Methods". Under young Scientist Programme, Implemented at Plant Cellular and Molecular Genetics Lab, Bose Institute, Calcutta, in collaboration with Professor S K Sen, amount Rs. 5

#### **Selected Recent Publications –**

##### *Journal Papers:*

1. **Jha T.B. Karyotype analysis from aerial roots of *Piper nigrum* based on Giemsa and fluorochrome banding** Cytologia (In Press) 2019
2. **Jha T.B., Saha P.S., Adak M., Jha S. and Roy P. Chromosome morphometric analysis of Indian cultivars of *Lens culinaris* Medik. using EMA based Giemsa staining method.** Caryologia: International Journal of Cytology, Cytosystematics and Cytogenetics, **Vol . 70, No . 3, 270–283, 2017.**
3. **Jha T B , Saha P S, Nath S, Das A and Jha S Morphological and cytogenetical characterization of ‘Dalle Khursani’: a polyploid cultivated *Capsicum* of India** Scientia Horticulturae **215, 80-90, 2017**
4. **Jha T B and Saha P S Characterization of some Indian Himalayan *Capsicums* through floral morphology and EMA based chromosome analysis** Protoplasma DOI **10.1007/s00709-016-1001-z 2016, 254:921–933, 2017**
5. **Das A, Nandagopal K & Jha T B Molecular characterization of some Indian Aloe vera populations through RAPD and ITS markers** Plant Biosystems, **dx.doi.org/ 10.1080/ 11263504.2016.1203833 2016**
6. **Jha T B and Nath S EMA based chromosome analysis in *Bixa orellana* L. and *Limonia acidissima* L.** Nucleus **59 ( 2) 93-98 2016**
7. **Jha T B. and Halder M Searching chromosomal landmarks in Indian Lentils through EMA based Giemsa staining method** Protoplasma, DOI **10.1007/s00709-015-0873-7, 252:283–299, 2015**
8. **Samaddar T, Myo Ma Ma Than, Jha T B and Jha S Cytogenetic and DNA analyses in three species of Swertia from Eastern Himalaya** Caryologia **doi.org/ 10.1080/00087114. 2015.**
9. **Nath S & Jha T B , Mallick S K & Jha S. Karyological relationships in Indian species of Drimia based on fluorescent chromosome banding and nuclear DNA amount** Protoplasma **doi: 10.1007/s00709-014-0679-z. Epub 2014 , 252(1):283-99. 2015**
10. **Jha T.B., Mahanti A and Ghorai A : Karyotype Analysis of Indian Lentils Through EMA Based Giemsa Staining** Caryologia **68 (4) 280-288, 2015**
11. **Anusree Das, SK. Moquammel Haque, Biswajit Ghosh, Krishnadas Nandagopal, Timir Baran Jha Morphological and genetic characterization of micropropagated field grown plants of *Aloe vera* L.** Plant Tissue Cult. & Biotech **25(2): 231-246, 2015 (December)**
12. **Jha T.B , Chromosomes of *Aegle marmelos* & *Azadirachata indica* through EMA method.** Nucleus **57(3):185–188, 2014**
13. **Basu S and Jha T B, Direct organogenesis, phytochemical screening and assessment of genetic stability in clonally raised *Chlorophytum borivilianum* Sant et Fern.** *Environmental and Experimental Biology* **12: 167–178, 2014**
14. **Samaddar T, Jha S and Jha T B : Indian *Swertia* from Eastern Himalaya: Strategies for conservation and biotechnological improvement, Invited review in a Book ‘ The Gentianaceae Volume 1 - Characterization and Ecology”** By Springer, **279-302, 2014**

15. Jha T B , Samaddar T, Nath S., and Das A., Direct organogenesis, and genetic characterization of *Solanum pseudocapsicum* L *in vitro* regenerated plants PTC & B , **24(1):67-72**, 2014
16. Jha T B, S Mukherjee, A Basak and J Adhikari: *In vitro* Morphogenesis in *Selaginella microphylla* (Kunth.) , Plant Biotechnology Reports , DOI 10.1007/s11816-012-0255-y, **7(3)**, 239-245, 2013
17. Ghosh S, Das A, Ghorai A & Jha T B Comparative kayomorphology of edible *Musa* cultivars of West Bengal Caryologia: International Journal of Cytology, Cytosystematics and Cytogenetics, **Vol. 66, No. 3, 243–250**, 2013
18. Bandopadhyay S, Nandagopal K and Jha T.B. Characterization of RAM to SAM transitions by differential screening of randomly amplified cDNAs from *in vitro* cultures of *Selaginella microphylla*. *Biologia Plantarum* , DOI 10.1007/s10535-013-0325-1 , 57( 3), 597 – 600, 2013
19. Samaddar T, Choube,B., Jha S and Jha T B Determination of Swertiamarin and Amarogentin Content and Evaluation of Antibacterial Activity in Eastern Himalayan Species of *Swertia* L. *Pharmacognosy Communications* **3(4):64-70**. 2013
20. Sautrik Basu and Timir Baran Jha *In vitro* Root Culture : An Alternative Source of Bioactives in the Rare Aphrodisiac Herb *Chlorophytum borivillianum* Sant et Fern *Plant Tissue Cult.& Biotech* 23(2) 133-145, 2013

*Book Chapter:*

**Book** (For Undergraduate & Post Graduate students): Jha ,T.B. and Ghosh B.: PLANT TISSUE CULTURE BASIC AND APPLIED [2<sup>nd</sup> revised edition] 2016, **Platinum Publishers Kolkata, West Bengal .**

**Seminar/Conference Presentations/Invited Talk – (2010 onwards)**

1. Invited to deliver a lecture on “Global challenges and Biotechnological advancement in Plants” in the International Conference on Chemical and Environmental Sciences 2019, (ICCAES 2019) 19-21<sup>st</sup> Sept Organized by the IEM Kolkata
2. Participated in the 40<sup>th</sup> meeting of Plant Tissue Culture Association of India & International Conference on Trends in Plant Sciences and Agrobiotechnology Feb 14-16<sup>th</sup> 2019 at IIT Guwahati, Assam
3. Participated and delivered lecture in the International conference of Botany , University of Dhaka, Bangladesh , Feb; 2018
4. Participated and delivered an invited lecture in the International conference on
5. “The Green Planet : Past, Present & Future” organized by the Dept. of Botany University of Calcutta on 21-23<sup>rd</sup> December 2016.
6. Delivered a lecture in the 8<sup>th</sup> International Plant Tissue Culture & Biotechnology Conference (Dec.3-5) Dhaka, Bangladesh 2016. Theme; Biotechnology for Innovative Agriculture and Food Security
7. 37<sup>th</sup> Annual meeting of PTCA(India) & National Symposium on Plant Biotechnology for Crop Improvement (Feb 25-27) at NBRI, Lucknow, India, 2016
8. 7<sup>th</sup> International Plant Tissue Culture & Biotechnology Conference at University of Dhaka, Bangladesh, March1-3, 2014
9. 35<sup>th</sup> Annual meeting of PTCA(India) & National Symposium on Advances in Plant Molecular Biology & Biotechnology, IISER Pune,India, March 10-12,2014
10. National Conference on Plant Tissue Culture held at CFTRI, Mysore, March 11-13, 2013
11. 10. XII<sup>th</sup> International symposium of Plant Biotechnology at St. Louis Missouri, USA, Oral Presentation: Quality biofuels from *in vitro* grown genetically uniform plants of *Jatropha curcas* June 6-11, 2010.
12. National symposium on Plant Cell Tissue & Organ Culture, Kolkata March 3-5, 2010

**Awards/Recognitions-**

Nominated by the Indian National Science Academy (INSA) under International Collaboration programme in Kagoshima University, Japan, 2010.

**Ph. D. Examiner:** Evaluating Ph. D. Thesis of candidates from different Universities and Institutes within and outside the country

**Contact Details:**

Email: **tbjha2000@yahoo.co.in**

Mobile: **09432184468**