

CHARLES R. YESUDAS

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PROFILE:

- My strengths are in the field of Plant Biotechnology and Molecular Biology, with skills in the area of HTS molecular methods like robotics for high throughput, marker integration, DNA sequencing, PCR, Agarose/Metaphor/Pulsefield/SDS-PA/PA Gel Electrophoresis and cell culture.
- Analysis of data for association map development and use of Mapmaker EXP version 3.0, Mapmaker QTL version 3.0, QTL Cartographer version 2.5, Map Manager QTXb20 and collection of field/lab data.
- Working knowledge of Robots for HTS, HPLC, GC & LC-MS/MS, and Near Infrared Analyzer (NIR)-Portable Grain Analyzer (PGA) Zeltex ZX 50 for protein, oil and water percentage analysis, ABI PRISM 377 DNA Sequencer, CEQ 2000 XL DNA Analysis System, Geno/Grinder 2000 (DNA extractions) and, DNA Engine Opticon 2 (Continuous fluorescence detector for RT-PCR).
- Worked in multinational companies in India for projects involving planning and designs for Teak (*Tectona grandis* L.) plantations, Tissue culture applications, Silviculture practices, Horticultural practices, management and applications.
- Extensive experience in team building, teaching methodology, scientific protocol applications and team management.
- Languages: English (fluent), Tamil (fluent), Hindi (speak only)
- Computers: PC based Microsoft office, MS Word applications, Excel, PowerPoint, Adobe, Photoshop, Fourth Dimension-version 4.1, Mapmaker EXP version 3.0, Mapmaker QTL version 3.0, QTL Cartographer version 2.5, MapChart version 2.1, Map Manager QTXb20 and Internet.
- Tenacious and motivated in achieving the objective, through hard work, perseverance, patience and conscientious devotion to duties entrusted.

PROFESSIONAL EXPERIENCE

Research Experience

Identification of Genes Underlying Quantitative Trait Loci for Seed Bioactive Factor (Isoflavone) Content and Japanese beetle (*Popillia japonica*, Newman) resistance in *Glycine max* (L.) Merr. Using the Physical Map
(Ph.D.) Dissertation Proposal ('02-'06) completed by July. 2006.

- **Tasks include Robotics for plate filling and clone picking/Identification, Marker integration, BAC DNA constructions to extractions and duplication from BAC Libraries, Genomic DNA extractions (in-house approaches/Geno Grinder 2000), RNA extractions using kits, DNA elutions from agarose gels using kits, Centrifugations, PCR, Gel Electrophoresis, usage of G-Browse for communicating the Physical Map of soybean to user teams and coordination of multi-team research, and usage of Bioinformatics tools-BLAST searches for DNA and Protein sequence comparisons.**
- **Maintenance of field programs (plot layout, planting to harvest of cultivars of Soybean, Essex x Forrest and Flyer x Hartwig, and packing of seeds to storage maintenance).**

- Protein/Oil/Water Analysis using Near Infrared Analyzer (NIR)-PGA ZX-50, DNA sequencing and field/lab data collection (Japanese Beetles/Soybean).
- Testing Japanese beetles for antibiosis/antixenosis effects and identification of gene(s) underlying insect resistance through feeding pattern tests, and analysis of data using Mapmaker EXP, Mapmaker QTL, QTL Cartographer and MapManager QTXb20 programs for Physical and Genetic map building.
- Analysis of data for association maps and use of softwares, Mapmaker EXP version 3.0, Mapmaker QTL version 3.0, QTL Cartographer version 2.5, Map Manager QTXb20 and collection of field/lab data.

Mitotoxicity and Clastogenicity of Dimethoate in the Somatic Cells of *Allium cepa*, L. and the Bone Marrow Cells of *Mus musculus* (Swiss albino mice) *in vivo*

M.Phil. Degree-Thesis ('89-'90).

- Tasks included intraperitoneal injections and sacrificing the animals for bone marrow analysis and chromosome counting for aberrations/abnormalities and pre-clinical trials on *Mus musculus*.
- In lab breeding of mice to show expression of lesions related to exposure to the pesticide Dimethoate in exposed animal offspring.
- Treating, harvesting, and fixing roots for karyotype measurement and analysis.

Cytogenetic Effects of Liv-52 on the Bone Marrow Cells of *Mus musculus* (Swiss albino mice) *in vivo*

M.Sc. Degree-Thesis ('86-'88).

- Tasks included intraperitoneal injections and sacrificing the animal for bone marrow analysis and chromosome counting for aberrations/abnormalities and pre-clinical trials on *Mus musculus*.
- In-lab breeding of mice, to show the expression of the antihepatotoxin Liv-52 in offspring's.
- Preclinical trials.

Exotic Trees of India

B.Sc. Degree-Thesis ('83-'86).

- Tasks include field data collection and specimen collection and, making of Herbariums.

Work Experience

AT SOUTHERN ILLINOIS UNIVERSITY

- 8.16.2005 till date** : Working as a Research Assistant (RA) in the Plant Biotechnology and Genomics Research Facility at SIUC.
- 8.16.2003 to 8.15.2005** : Working as a Research Assistant (RA)/Admissions Assistant (AA) in MEDPREP program using Fourth Dimension software, version 4.1 for Medical records update.
- 5.15.2003 to 8.15.2003** : Worked as an R.A. in the Plant Biotechnology and Genomics Research Facility at SIUC.
- 5.21.2003 to 8.15. 2003** : Worked as a Assistant in the Medical Records at Student Health Programs at SIUC.

PROFESSIONAL ORGANIZATIONS:

- March 1997- Dec 2001** : Chief Manager, Plantation Division, Fusion Agro Plantations, Pvt., Ltd., Chennai-600 018, South India.

- Developments, implementation of novel methods for research practices, manage teams and assist in public relations.
- Management of teams and offering technical expertise in the field of Plant Tissue Culture and related experiments.
- Oversee company's technical policies and supervise governmental contracts, assistance for plot access, research, and development.

June 1994 – Feb 1997 : Chief Manager, Technical Division, Anubhav Plantations Pvt. Ltd., Chennai-600 018, South India.

- Manage plantation site, and offer financial consultations.
- Manage staff teams for lab and field expertise.
- Interact with clients on plantation sites

June 1993- May 1994 : Lecturer, Faculty Improvement Program (FIP-Leave Vacancy), Department of Botany, Bishop Heber College, Trichy-620017, Tamil Nadu, South India.

- Teach Seed Technology for Undergraduate Seniors.
- Teach Environmental Biology for Graduate students.
- Teach General Biology to Undergraduate freshmen through seniors.

1991-2001 : Committee Member- Tamil Nadu Professional Courses Entrance Examination, Chennai, Tamil Nadu, South India.

- Government sponsored coaching for the economically backward students competing in examinations for Professional Courses (Medical & Engineering schools, one-month crash course).
- Conducting weekly exams and evaluating them and making evaluations for progress generated through one on one-study groups.

Teaching Experience

2002-2006:

Spring '05, '06 TA for PSGA 433/PLSS 433/PLB 433/ANS-FN 433, **Introduction to Agricultural Biotechnology**. Course covers basic principles of plant and animal biotechnology using gene mapping in breeding, transgenic approaches in improving crop plant, Technology transfer from lab to marketplace, cloning, transfer and expression.
 Spring '03-TA for PLB 117, **Plants and Society**. Core-Curriculum course.
 Fall '02-TA for PLB 115, **General Biology**. Core-Curriculum course.
 Summer '02-TA for PLB 117, **Plants and Society**. Core-Curriculum course.
 Spring '02-TA for PLB 115, **General Biology**. Core-Curriculum course.
 Dept. of Plant Biology, Southern Illinois University, Carbondale, IL 62901.

1993-1994:

Lecturer, Faculty Improvement Program (FIP-Leave Vacancy), Department of Botany, Bishop Heber College, Trichy-620017, Tamil Nadu, South India.

AREAS OF INTEREST:

To teach or do research in Molecular Biology, Biotechnology, Tissue Culture, GeneticEngineering.

JOURNAL PUBLICATIONS

Jeffry L. Shultz, Deepakkumaran Jayaraman, Kay Shopinski, M. Javed Iqbal, Samreen Kazi, Kimberley Zobrist, Rabia Bashir, Satsuki Yaegashi, Nagajyothi Lavu, Ahmed J. Afzal, **Charles R. Yesudas**, M. Abdelmajid Kassem, Chengcang Wu, Hong Bin Zhang, Christopher D. Town, Khalid Meksem, and David A. Lightfoot. **The Soybean Genome Database (SoyGD): a browser for display of duplicated, polyploid, regions and sequence tagged sites on the integrated physical and genetic maps of *Glycine max*.** *Nucleic Acids Research*, 2006, Vol. 34, Database issue D758-D765; doi:10.1093/nar/gkj050. http://nar.oxfordjournals.org/cgi/reprint/34/suppl_1/D758

Shultz, J. L, **Yesudas, C.**, Yaegashi, S., Afzal, A. J., Kazi, S., Lightfoot, D. A. **Three Minimum Tile Paths from Bacterial Artificial Chromosome Libraries of the Soybean (*Glycine max* cv. 'Forrest'): Tools for Structural and Functional Genomics.** *Plant Methods* 2006, 2:9 (25May2006). <http://www.plantmethods.com/content/2/1/9>

Yesudas, Charles, Town, Christopher, Lightfoot, David A. 2006. **Isolation of Candidate Genes Underlying Loci that Control Genistein Content in *Glycine max*.** *Genome*. (in preparation).

Yesudas, Charles, Shultz, Jeffry, Lightfoot, David A. 2006. **Association mapping of candidate genes underlying loci that control protein content in *Glycine max*.** *Theor. Appl. Genet.* (in preparation).

RESEARCH PAPER PRESENTATIONS/ABSTRACTS/POSTERS

American Society of Plant Biologists (ASPB), Hynes Convention Center, Boston, MA, August 5-9, 2006.

The Soybean Genome Database (SoyGD): A Tool For Integrated Legume Biology. Lightfoot, David A, Shultz, Jeffry L, Kazi, Samreen, Bashir, Rabia, **Yesudas, Charles R**, Jayaraman, Dheepakkumaran, Iqbal, Javed M, Yaegashi, Satsuki, Town, Chris, Koo, Hean.

3rd International Conference on Legume Genomics & Genetics, Brisbane Convention & Exhibition Center, Queensland, Australia, 9-13 April, 2006.

A Catalog by Marker Homology and DNA Sequence Analysis of BACs from Duplicated Regions in Soybean, a Paleopolyploid Genome. David Lightfoot, Jeffry Shultz, **Charles Yesudas**, Hongbin Zhang, Gane Ka-Shu Wong.

Plant and Animal Genome Conference, 2006, Town & Country Convention Center, San Diego, Jan 14-18, 2006.

A Catalog Of Duplicated Regions From Marker Amplicon Homologs And BAC DNA Sequence Analysis In Soybean, A Paleopolyploid Genome. **Yesudas, Charles R.**, Shultz, Jeffry L., Zhang, Hongbin, Wong, Gane Ka-Shu, and Lightfoot, David A.

Plant and Animal Genome Conference, 2006, Town & Country Convention Center, San Diego, CA, Jan 14-18, 2006 and the 3rd International Conference on Legume Genomics & Genetics, Brisbane Convention & Exhibition Center, Queensland, Australia, 9-13 April, 2006.

Recent Additions To The Soybean Genome Database (SoyGD): A Browser For Display Of The Integrated Physical, Genetic And Gene Maps Of *Glycine max*. Jayaraman, Dheepakkumaran, **Yesudas, Charles R.**, Kazi, Samreen, and Lightfoot, David A.

Plant and Animal Genome Conference, 2006, Town & Country Convention Center, San Diego, CA, Jan 14-18, 2006, American Society of Plant Biologists (ASPB), Seattle, WA, July 16-20, 2005, and the 3rd International Conference on Legume Genomics & Genetics, Brisbane Convention & Exhibition Center, Queensland, Australia, 9-13 April, 2006.

Complex Feeding Patterns of Japanese Beetles (*Popillia japonica*, Newman)

On Selected Lines of ExF NILs and RILs. **Yesudas, Charles R.**, Fish, Dan, and Lightfoot, David A.

Plant and Animal Genome Conference, 2006, Town & Country Convention Center, San Diego, CA, Jan 14-18, 2006, American Society of Plant Biologists (ASPB), Seattle, WA, July 16-20, 2005, and poster presented in the 3rd International Conference on Legume Genomics & Genetics, Brisbane Convention & Exhibition Center, Queensland, Australia, 9-13 April, 2006.

Positional Cloning of Genes Underlying QTL for Isoflavones, Protein, Oil and Japanese Beetles (*Popillia japonica*, Newman) Resistance in Soybean [*Glycine max.* (L.) Merr.]. **Yesudas, Charles R.**, Shultz, Jeffry, Iqbal, M. Javed, Jayaraman, Dheepakumaran, and Lightfoot, David A.

American Society of Plant Biologists (ASPB), Lake Buena Vista, FL, July 24 - July 28, 2004.

Browsing the soybean genome: Educational challenges from physical map builds of a recently duplicated genome. Shultz, Jeff, Meksem, Khalid, Langin, Chet, Kazi, Samreen, Zobrist, Kimberly, Yaegashi, Satsuki, Lavu, Nagajyothi, Iqbal, Javed, Potter, Jamie, **Yesudas, Charles**, Wainer, David, Watson, Dennis, Wu, Chencang, Zhang, Hong Bin, Town, Christopher, Lightfoot, David.

Lecture given at the Annual Symposium for Genetics at World University Service Center, Kilpauk, Chennai, South India, July 1990.

Mitotoxicity and Clastogenicity of Dimethoate in the Somatic Cells of *Allium cepa*, L. and the Bone Marrow Cells of *Mus musculus* (Swiss albino mice) *in vivo*. **Yesudas, Charles**, Rajaiah, Durairaj.

PROFESSIONAL ASSOCIATIONS

American Society of Plant Biologists (ASPB)

EDUCATION

Ph. D.	Plant Biology	Southern Illinois University	Carbondale, Illinois, USA	2002 till date
M. Phil.	Botany	Madras University	Madras Christian College (Autonomous), South India	Honors '89-'90
M. Sc.	Botany	Madras University	Madras Christian College (Autonomous), South India	Honors '86-'88
B. Sc.	Botany	Madras University	Madras Christian College (Autonomous), South India	<i>cum-laude</i> '83-'86

REFERENCES

Dr. David A. Lightfoot, Ph.D.

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Department of Plant, Soil and Agricultural Systems
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Dr. Andrew J. Wood, Ph.D.

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Department of Plant Biology
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Dr. M. Javed Iqbal

Research Assistant Professor
Adjunct professor
Departments of Horticulture and Forestry
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