

**BIOCHEMICAL CHARACTERIZATION OF INDUCED  
DEFENSE IN TOMATO AGAINST *Fusarium*  
*oxysporum* f. sp. *lycopersici***

*Sudhamoy Mandal*

**BIOCHEMICAL CHARACTERIZATION OF INDUCED  
DEFENSE IN TOMATO AGAINST *Fusarium  
oxysporum* f. sp. *lycopersici***

*Thesis submitted to the  
Indian Institute of Technology Kharagpur  
For award of the degree*

*of*

**Doctor of Philosophy**

*by*

**Sudhamoy Mandal**



**AGRICULTURAL AND FOOD ENGINEERING DEPARTMENT  
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR  
KHARAGPUR – 721 302, INDIA**

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# Curriculum Vitae

Sudhamoy Mandal

sudhamoy.blitz@gmail.com

## Education

- ✦ M. Sc. (Plant Pathology) 1996 from Indian Agricultural Research Institute (IARI), New Delhi. Website: [www.iari.res.in](http://www.iari.res.in)
- ✦ B.Sc. (Ag.) Honrs. 1993 from Bidhan Chandra Krishi Viswavidyalaya (BCKV), Mohanpur, Nadia, West Bengal. Website: [www.bckv.edu.in](http://www.bckv.edu.in)

## Professional Experience

### Employment

- ✦ Plant Pathology Laboratory, Central Horticultural Experiment Station (ICAR), Aiginia, Bhubaneswar, PIN – 751019, INDIA.  
Website: [www.iihr.res.in](http://www.iihr.res.in)

### Other

- ✦ Bioinformatics in genomics and proteomics: Short term course at Indian Institute of Technology, Kharagpur (September 22 – 23, 2006)
- ✦ Foundation course training at National Academy of Agricultural Research Management (NAARM), Hyderabad (June 1 – September 28, 1999).
- ✦ Senior Research Fellowship of Indian Council of Agricultural Research (ICAR), New Delhi (1996-97 program).
- ✦ Junior Research Fellowship of Indian Council of Agricultural Research (ICAR), New Delhi (1993-94 program).

## Publications

- ✦ **Sudhamoy Mandal**, Adinpunya Mitra (2008). Reinforcement of cell wall in roots of *Lycopersicon esculentum* through induction of phenolic compounds and lignin by elicitors. **Physiological and Molecular Plant Pathology**. Doi:10.1016/j.pmpp.2008.02.003
- ✦ **Sudhamoy Mandal**, Adinpunya Mitra (2008). Accumulation of cell wall-bound phenolic metabolites and their upliftment in hairy root cultures of tomato (*Lycopersicon esculentum* Mill.). **Biotechnology Letters**. Doi:10.1007/s10529-008-9666-9
- ✦ **Sudhamoy Mandal**, Adinpunya Mitra, Nirupama Mallick (2008). Biochemical characterization of oxidative burst during interaction between *Solanum lycopersicum* and *Fusarium oxysporum* f. sp. *lycopersici*. **Physiological and Molecular Plant Pathology**. (Accepted for publication)
- ✦ **Sudhamoy Mandal**, Nirupama Mallick, Adinpunya Mitra (2008). Salicylic acid induces resistance to *Fusarium oxysporum* f. sp. *lycopersici*, causal organism for *Fusarium* wilt of tomato. **Journal of Plant Physiology**. (Revised submitted).

## CERTIFICATE

*This is to certify that the thesis entitled, “**Biochemical characterization of induced defense in tomato against Fusarium oxysporum f. sp. lycopersici**”, submitted by Sudhamoy Mandal to the Indian Institute Technology Kharagpur for the partial fulfillment of award of the degree Doctor of Philosophy, is a record of bona fide research work carried out by him under our supervision and guidance.*

*The thesis in our opinion, is worthy of consideration for award of the degree of Doctor of Philosophy in accordance with the regulation of the Institute. To the best of our knowledge, the results embodied in this thesis have not been submitted to any other University or Institute for the award of any other Degree or Diploma.*

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Supervisor

(Dr Adinpunya Mitra)  
Associate Professor

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Supervisor

(Dr Nirupama Mallick)  
Associate Professor

Date:

Dedicated  
to  
My Late Mother

*(who still bestows her blessings on me from her heavenly abode since  
23rd August, 2001)*

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**(Sudhamoy Mandal)**