

## BIO-DATA

1. Name : Prof. Prabir Kumar Paul
2. Designation and Present Position : Deputy Director,  
Dean Faculty of Bio Science and  
Biotechnology  
Amity University, Uttar Pradesh  
Noida. India.
3. Date of Birth : January 1<sup>st</sup>, 1965
4. Languages Known : English, Hindi , Bengali
5. Mother tongue : Bengali

### 6 Academic Details

Course / Assignment	University	Subject ( Studied / Taught)	Year	Experience	
				Research	Teaching
B.Sc ( H) Botany	Delhi	Botany	1983-86		
M.Sc ( H) Botany	Delhi	Botany ( with specialization in molecular cell physiology and molecular plant pathology)	1986-88		
Ph.D	Delhi	Molecular and Physiological aspects of Host –Pathogen interaction	1988-92 Submitted in June ,1992	4 Yrs	
Post Doctral	Delhi	Molecular aspects of induction of defence responses in Barley	1993 – 1998 Worked as a CSIR Research Associate	5Yrs	
Post Doctral	Delhi	Molecular aspects of induction of defence responses in Barley	Selected as Pool officer ( SRA) by CSIR in May,1998 <b>but did not join</b> as got selected for ad-hoc faculty position at Delhi		

			University		
Post Graduate Teaching ( As Research Associate )	Dehi ( Botany Department)		1993-98 Taught theory and practical of <b>Plant Pathology</b>		5Yrs
Undergraduate Teaching	Dayal Singh College , Delhi University	Taught cell biology, Genetics and physiology to B.Sc ( H) Botany students	August 1992 to January 1993.		6 Months
Post Graduate Teaching( As Temporary faculty of Delhi University against permanent vacancy	Botany Department , Delhi University	Molecular Plant Pathology, Cell Biology, Molecular Biology , Mycology	July 1998 to June 2003		5 Yrs
Research ( As Temporary faculty of Delhi University)	Botany Department , Delhi University	Jointly guided M.Phil students working on Molecular aspects of induced defence responses in Barley.	July 1998 to June 2003.	5Yrs	
<b>Professor &amp; Associate Dean</b> (Biotechnology)	Centre for Biotechnology , Former Rai University, Delhi	Taught post - graduate courses – Molecular biology, Recombinant DNA Technology, Cell Biology	July 2003 to August 2005		2Yrs and 2 Months

Research ( at former Rai University )	Centre for Biotechnology , Former Rai University, Delhi	Worked on molecular aspects of interaction between phylloplane microbes and host in induction of induced defence responses by leaf and fruit extracts of <i>A. indica</i>	July 2003 to August 2005	2Yrs	
<b>Professor ,</b> (Biotechnology)	AIB, Amity University, NOIDA	Taught M.Sc and B.Tech classes – Cell Biology, Molecular Biology , Recombinant DNA Technology	Since September, 2005 – still continuing.		

**a. Total Research Experience: 27 Years.**

**b. Total Teaching Experience: 22 Years**

**c. Total teaching and research experience: 22 Years**

#### **7. Field of Specialisation :**

(a) **Teaching:** Molecular biology, Molecular plant pathology, Mycology; Microbiology , Cell biology, Genetics, Recombinant DNA Technology.

(b) **Present research interests :** signal transduction in plant defence responses, molecular events during interaction of a pathogen with a host and non-host ; protein – protein and DNA-protein interaction ; gene expression during plant – phylloplane microbe interaction ; influence of phylloplane microbes on physiology and gene expression in chloroplast and mitochondria , proteomics of cell wall during phylloplane microbe – plant interaction; development of phylloplane microflora based biocides ; molecular mechanisms in colonization of phylloplane by human enteric pathogens . Quorum sensing on pyllloplane .

#### **8. Awards/Distinctions received/achieved:**

- (i) All India Post-Graduate scholarship for pursuing M.Sc. in Botany (1986-88).
- (ii) Awarded Junior Research Fellowship (1988-90) and subsequently Senior Research Fellowship (1990-93) after qualifying NET conducted by CSIR, New Delhi.

- (iii) Selected as Research Associate (1994-99) by CSIR, New Delhi for Post-doctoral Research at Department of Botany, University of Delhi.
- (iv) Selected Senior Research Associate (Pool Officer) by CSIR, New Delhi, for Post-doctoral Research at Department of Botany, Delhi University (1999).
- (v) Fellow and life member , International Society for Conservation of Natural Resources .

### 9. Membership of Academic/Professional Societies:

Member of the:

- (i) Life member of International Society for Conservation of Natural Resources.
- (ii) National Institute of Ecology.
- (iii) Member of American Society of Microbiology

### 10. Publications

Research articles (published) - 23

Research articles (Communicated after revision) – 10

### Complete Patents (Submitted)

Six

### 11. a. Conferences attended

#### International – 11

One each at Barcelona **Spain**, Bandol **France**

California& Oregon, **USA**; Oxford ,**U.K**

Torrino , **Italy** , India ( Delhi ) ,

Australia (New South Wales & Darwin) - **2**

**New Zealand** (Auckland) -**1**, **Thailand** (Chiang Mai – **1**).

#### National – 16

**Number of abstracts in international conferences: 27**

### b. Conference organized: Organising secretary for international conference ,

“Perspectives in Phyllosphere Biology “, February 15-17 , 2012 .Amity University Uttar Pradesh Noida, India. (Supported by DST, New Delhi, India )

### 12. Research Supervisor

6

Co – Supervisor

2

Ph.D Awarded

4

Women Scientist

1

1. Mrs. V.Bhuvaneshwari, ‘Molecular events during induction of Systemic Acquired Resistance in *Lycopersicum esculentum* by plant extracts against *Pseudomonas syringae* pv. *tomato*’. (Completed) (2012) (Awarded 2012) .

2. Mr. Navodit Goel, 'Study of expression of genes involved in induction of systemic acquired resistance in *Lycopersicon esculentum* by fruit extracts of *Azadirachta indica* against *Pseudomonas syringae* pv. *tomato*'. ( Awarded , 2014 )
3. Ms. Joyeeta Mitra, 'Studies on the effect of phylloplane microflora on chloroplast and mitochondria of *Hordeum vulgare* and *Lycopersicon esculentum*'. ( Awarded 2014 )
4. Ms. Reetika Kapoor, 'Production of broad spectrum immunodiagnostic reagents against plant viruses and development of lateral flow assay for their detection'. ( Awarded , 2014 )
5. Ms. Indu Gaur, 'A Molecular insight into the occurrence, colonization and interaction of Human enteric pathogens with *Lactuca sativa* and *Lycopersicon esculentum*'. (Ongoing)
6. Ms. Beenish, 'Leaf age correlation to phylloplane microbe-microbe and plant-microbe interactions on *Lycopersicon esculentum*'. (Ongoing)
7. Ms. Sneha Arora, 'Isolation and purification of beta lactamase inhibitor from herbal extracts to enhance the drug susceptibility of uropathogens'. (Ongoing) Co – Supervisor ( Supervisor Prof Shoma Paul Nandi )
8. Ms Manjita Mishra , " Characterisation of fungal root endophytes isolated from extreme salt stress condition and their beneficial impact on *Pennisetum glaucum* " ( Ongoing ) Co – Supervisor . Supervisor – Prof. Ajit Varma.
9. Ms Shilpi , "Molecular insight into cross-talk between phylloplane microflora and human enteric pathogens on leaf surface. "Joined January 2015. ( Co guide – Prof . P.D Sharma )
10. Ms Neha Bhaduria , " Studies on molecular mechanisms for epiphytic fitness of human enteric pathogens on leaf surface . Joined January 2015." ( Co guide – Prof . P.D Sharma )
11. Ms Gayatri , "Cloning and characterization of GS/GOGAT gene(s) from *Triticum aestivum* and their allele mining for nitrogen use efficiency." Joined January 2015 ( Co guide: Dr Pranab Kumar Mandal , IARI , New Delhi )
12. Reena Kumari , "Identification of QTLs for yield and its components under moisture stress conditions in wheat. " Joined February 2015. ( Co guide : Dr Vinod , IARI , New Delhi )

**13. Address for communication:**

Dr. Prabir Kumar Paul  
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07 / 05 / 2015.

Dr PRABIR KUMAR PAUL

Delhi. India

## List of Publications

2015

Navodit Goel and P.K Paul . Induction and expression of peroxidase is age depende . Archieves of Phytopathology and Plant Protection. In Press .

Navodit Goel and P.K Paul . Plant age influences elicitation of Polyphenol Oxidase activity by Neem extract in *Solanum lycopersicum* against *Pseudomonas syringae* pv. *tomato* . Israel Journal of Plant Sciences . In Press ( Impact Factor 0.419 )

V.Bhuvaneshwari , Navodit Goel and Prabir Kumar Paul. Bioelicitors induce association of defence enzymes with cell walls of *Lycopersicum esculentum* . Journal of Phytopathology . IF : 0.9 .Online doi: 10.1111/jph.12388 .

2014

Navodit Goel and Prabir Kumar Paul . Neem fruit extract induces peroxidase and lipoxygenase in tomato . Asian Journal of Biological and Life Sciences . 3 ( 3 ) : 189-194 .

Navodit Goel and Prabir Kumar Paul . Induction of systemic resistance in tomato by fruit extracts of *Azadirachta indica* . Reviews of Literature . 2 ( 2 ) : 1-27 . ( Impact factor 1.4716 UIF ) .

Reetika Kapoor , Bikash Mandal , Prabir Kumar Paul , Phaneendra Chigurupati and Rakesh Kumar Jain . Production of cocktail of polyclonal antibodies using bacterial expressed recombinant protein for multiple virus detection . Journal of Virological Methods . 196 : 7-14 ( Impact factor : 2.065 )

Reetika Kapoor , Bikash Mandal , Prabir Kumar Paul & Rakesh Kumar Jain. Simultaneous detection of potato viruses Y and X by DAC-ELISA using polyclonal antibodies raised against fused coat proteins expressed in *Escherichia coli*. J. Plant Biochemistry and Biotechnology. DOI 10.1007/s13562-013-0251-5 ( Impact factor : 0.9 ) .

2013

Navodit Goel, A.N Sahi and P.K Paul. Stage specific induction of systemic acquired resistance by fruit extracts of *Azadirachta indica*. Archieves of Phytopathology and Plant

Protection. Publisher: Francis and Taylor. 47 ( 4 ) : 477 – 489 (DOI: 10.1080/03235408.2013.812893 , 11 July , 2013 )

Joyeeta Mitra, A.N Sahi and P.K Paul. Phylloplane microfungus metabolite influences activity of RuBisCO . Archives of Phytopathology and Plant Protection. Publisher: Francis and Taylor. 47 ( 5 ) 584 - 590 (DOI: 10.1080/03235408.2013.814827 , 11 July 2013 )

Joyeeta Mitra, V. Bhuvaneshwari and P.K. Paul. Broad Spectrum Management of Plant Diseases by Phylloplane Microfungal Metabolites. Archives of Phytopathology and Plant Protection. Publisher: Francis and Taylor, U.K . 46 ( 16 ) : 1993 - 2001

Navodit Goel, A.N Sahi and P.K Paul. Age as a factor in induction of Systemic acquired resistance in Tomato against bacterial speck by aqueous fruit extracts of *Azadirachta indica*. Archives of Phytopathology and Plant Protection. Publisher: Francis and Taylor, U.K . 46 ( 14 ) : 1696-1706

#### 2012

V. Bhuvaneshwari and P.K.Paul. Transcriptional and translational regulation of systemic acquired resistance by fruit extracts of *Azadirachta indica* in tomato. Archives of Phytopathology and Plant Protection . Publisher : Francis and Taylor.U.K 45 (12) : 1374-1385, ( Online : February, 2012 DOI:10.1080/03235408.2012.655931)

#### 2011

V. Bhuvaneshwari . A.K Srivastava and P.K Paul Aqueous fruit extracts of *Azadirachta indica* induces systemic acquired resistance in barley against *Drechslera graminea* Archives of Phytopathology and Plant Protection . Publisher : Francis and Taylor . U.K 45(8):898-908,(Online:September,2011), DOI:10.1080/03235408.2011.599153)

V. Bhuvaneshwari and P.K Paul .Involvement of protein kinases in induction of acidic isopolyphenol oxidases in cell walls of tomato by fruit extracts of *Azadirachta indica* Juss . Asian Journal of Biosciences . 6(2): 232-237.

#### 2002

P.K.Paul, and .P.D.Sharma. *Azadirachta indica* leaf extract induces resistance in barley against leaf stripe disease. Physiological and molecular plant pathology, 61, 3-13. Impact factor : 1.94

**2001**

**P.K.Paul , Devayani Muley and .P.D.Sharma. Effect of the insecticide monocrotophos on hydrolytic enzymes of leaf litter fungi of tobacco. Indian journal of plant physiology, 6 (4), 432-347.**

**1998**

**P.D.Sharma and P.K.Paul. Recent tactics of biological control. In new trends in Mircobioal ecology, eds Bharat Rai and M.S. DKhar. Pp : 272-286.**

**1997**

**Devyani Muley, P.K.Paul and P.D.Sharma. Uredinial state of *Melampsora geniculatae* Ramachar and Bhagyanarayana. Journal of the Indian Botanical society, 76, 297-298.**

**1996**

**P.K.Paul and P.D.Sharma. Biocontrol of leaf stripe disease of barley conserving fungal biodiversity. Vasundhara 1, 19-24.**

**1995**

**Richi Garg, P.K.Paul and P.D.Sharma. Phylloplane mycoflora of mulberry in relation to leaf senescence. International journal of ecology and environmental sciences, 21 , 97-102.**

**P.K.Paul, Vibaha varshney and P.D.Sharma. Monocrotophos induced changes in amino acid and monosaccharide contents of tobacco leaves. Indian journal of experimental biology, 33, 449-455.**

**( IF O.75 )**

**1993**

**P.K.Paul, Ritu Kapoor and P.D.Sharma. Effect of Monocil on phylloplane mycoflora of tobacco. International journal of ecology and environmental sciences, 19, 63-72.**

**1990**

**P.K.Paul, N.K.Saxena and P.D.Sharma. Mycoflora of tobacco leaves and tobacco products. International journal of ecology and environmental sciences, 16, 179-185.**



## **International conferences attended**

**2014**

**P.K Paul and V. Bhuvaneshwari . Molecular interactions in bio-elicitor induced SAR in tomato. 5<sup>th</sup> Asian Conference on Plant Pathology ( ACPP 2014 ) , November 3 -6 , 2014 . Chiang Mai , Thailand . Invited oral presentation .**

**Navodit Goel and P.K Paul . Elicitor mediated defense response in tomato is age dependent . 5<sup>th</sup> Asian Conference on Plant Pathology ( ACPP 2014 ) , November 3 -6 , 2014 . Chiang Mai , Thailand . Poster presentation .**

**Indu Gaur and P.K Paul . Bacterial interactions in development of speck disease in tomato . 5<sup>th</sup> Asian Conference on Plant Pathology ( ACPP 2014 ) , November 3 -6 , 2014 . Chiang Mai , Thailand . Poster presentation .**

**S. Beenish and P.K Paul . Role of leaf age in phylloplane colonization by pathogens on *Lycopersicum esculentum* . 5<sup>th</sup> Asian Conference on Plant Pathology ( ACPP 2014 ) , November 3 -6 , 2014 . Chiang Mai , Thailand . Poster presentation .**

**2013**

**P.K Paul and Joyeeta Mitra . Phyllosphere microbes influence succinate dehydrogenase activity in mitochondria of tomato. APPS - 2013 ( Australasian Plant Pathology Conference ) 25-28 , November 2013 . Auckland , New Zealand .( Oral presentation ) . Complete financial support by DST , New Delhi.**

**Joyeeta Mitra and P.K Paul . Phyllosphere microbial influence on RuBisCO activity in *Hordeum vulgare*. APPS - 2013 ( Australasian Plant Pathology Conference ) . 25-28 , November 2013 . Auckland , New Zealand . ( Poster presentation ) .**

**Navodit Goel and P.K Paul .Age – a factor in induction of defence responses in tomato . APPS – 2013 ( Australasian Plant Pathology Conference ) 25-28 , November 2013 . Auckland , New Zealand .( Poster presentation ) .**

**Reetika Kapoor, Bikash Mandal, P.K. Paul and R.K. Jain. Production of cocktail of polyclonal antibodies using bacterial expressed recombinant protein for multiple virus detection. 10<sup>th</sup> International Congress of Plant Pathology (ICPP, 2013) held in Beijing, China from August 25<sup>th</sup> - 30<sup>th</sup>, 2013 . ( Poster presentation ).**

## 2012

**Bhuvaneshwari V, Paul PK Protein kinases are involved in inducing systemic acquired resistance by fruit extracts of *Azadirachta indica* A. Juss in *Lycopersicum esculentum*. International conference on “Perspectives in Phyllosphere biology” at Amity University Uttar Pradesh, (15-17February, 2012), Oral Presentation.**

**Nazia Khan, Bhuvaneshwari V, Paul PK Impact of epiphytic micro-fungal metabolites on DNA-protein interaction in mitochondria of *Lycopersicum esculentum*. International conference on “Perspectives in Phyllosphere biology” at Amity University Uttar Pradesh, (15-17February, 2012), Oral presentation.**

**Navodit Goel, Paul PK Application Of Aqueous Fruit Extracts Of *Azadirachta indica* On Phylloplane of *Lycopersicum esculentum* Induces Systemic Acquired Resistance Against *Pseudomonas syringae* pv. tomato. International conference on “Perspectives in Phyllosphere biology” at Amity University Uttar Pradesh, (15-17February, 2012), Poster presentation**

**Ritika Rampal, Bhuvaneshwari V, Paul PK Effect of metabolites of phylloplane microfungi on protein-protein interaction in cell membranes of *Glycine max*. International conference on “Perspectives in Phyllosphere biology” at Amity University, Uttar Pradesh (15-17 February, 2012), Poster presentation**

**Sania Bajaj, Bhuvaneshwari V, Paul PK Impact of epiphytic bacterial metabolites on DNA- protein interaction in mitochondrial genome of *Lycopersicum esculentum*. International conference on “Perspectives in Phyllosphere biology” at Amity University, Uttar Pradesh (15-17 February, 2012), Poster presentation**

**Sweta Sanguri, Bhuvaneshwari V, Paul PK Impact of metabolites of phyllosphere microfungi on DNA-protein interaction in chloroplast of tomato plant. International conference on “Perspectives in Phyllosphere biology” at Amity University, Uttar Pradesh (15-17 February, 2012), Poster presentation**

Swati Singhal, Bhuvaneshwari V, Paul PK Effect of phylloplane bacterial metabolites on cell wall bound defense enzymes in relation with age of *Lycopersicon esculentum*. International conference on “Perspectives in Phyllosphere biology” at Amity University, Uttar Pradesh (15-17 February, 2012), Poster presentation

Joyeeta Mitra, Paul PK. Effect of the Phylloplane Microfungal Metabolites on RuBisCO of Chloroplasts of Barley and Tomato. International conference on “Perspectives in Phyllosphere biology” at Amity University, Uttar Pradesh (15-17 February, 2012), Poster presentation

### 2011

P.K.Paul, Bulbul Khare, Joyeeta Mitra and V.Bhuvaneshwari. Phylloplane microfungal metabolites systemically protects *Hordeum vulgare* var. *jagriti* against *Dreschlera graminea*. APPS-2011- April 26-29, 2011, Darwin, Australia. ( Poster Presentation).

P.K.Paul and V.Bhuvaneshwari. Protein-protein and DNA-protein interactions in biological control of *Pseudomonas syringae* pv. *tomato* on tomato by fruit extracts of *Azadirachta indica*. APPS-2011, April-26-29, 2011, Darwin , Australia. (Oral Presentation).

P.K.Paul and V. Bhuvaneshwari. Signal transduction during induction of systemic acquired resistance in tomato by fruit extracts of *Azadirachta indica*. APPS-2011, April-26-29, 2011, Darwin , Australia (Oral Presentation).

Reetika Kapoor, Bikash Mandal, P.K. Paul and R.K. Jain. Production of broad spectrum polyclonal antibodies for the detection of potyviruses using recombinant conserved coat protein of *Papaya ringspot virus*. VIROCON 2011 at XX National Conference on “Managing Emerging and Re-emerging Plant, Animal, Human and Aquatic Viral Diseases: One Health Perspective” of Indian Virological Society from 29<sup>th</sup> -31<sup>st</sup> December, 2011 at National Research Centre on Equines, Hisar

### 2010

Bulbul Khare, Joyeeta Mitra, V. Bhuvaneshwari and P.K. Paul. Phylloplane microfungal metabolites induce systemic acquired resistance in *Hordeum vulgare* var. *jagriti* against *Dreschlera graminea* . 9<sup>th</sup> International Symposium on microbial ecology of aerial plant surfaces. August 15-18, 2010, Oregon State University, Corvallis, Oregon, USA. (Oral Presentation).

Shweta Bhandwaj, Soundarya D., Summi Jeevan, V. Bhuvanewari and P.K. Paul. Influence of phylloplane microflora metabolites on gene expression in chloroplasts of barley. 9<sup>th</sup> International Symposium on microbial ecology of aerial plant surfaces. August 15-18, 2010, Oregon State University, Corvallis, Oregon, USA. (Poster Presentation)

#### 2009

V. Bhuvanewari, Parul Tyagi, Sandeep Soni, Satyakam Pugla and P.K. Paul. Fruit extracts of *Azadirachta indica* induces systemic acquired resistance in tomato against *Pseudomonas syringae* pv. tomato. APPS – 2009 – Plant Health management: an integrated approach. September 29-October 1st, 2009, New Castle, New South Wales, Australia (Oral presentation).

#### 2008

P.K. Paul and V. Bhuvanewari - Interaction of cell wall receptors of *Hordeum Vulgare* with leaf extracts of *Azadirachta indica* in control of *Drechslera graminea*. International congress of plant pathology. August 24-29, 2008, Torino, Italy (Poster Presentation)

#### 2005

P.K. Paul, Gaura Deshmukh, Lakshmishri Roy and Mandira Roy. Effect neem fruit extracts on phylloplane microfungi and activity of defense enzymes of barley. 8<sup>th</sup> International symposium on the microbiology of aerial plant surfaces. Oxford, U.K. (Oral Presentation)

#### 2000

P.K. Paul and P.D. Sharma. Importance of phylloplane microflora in *Azadirachta indica* fruit extract induced resistance of barley against *Drechslera graminea*. 7<sup>th</sup> International symposium on the microbiology of aerial plant surfaces August 3-8, 2000 University of California, Berkeley, USA (Poster Presentation).

#### 1995

P.K. Paul and P.D. Sharma. Effect of *Azadirachta indica* leaf extract on phylloplane microfungi and incidences of leaf stripe disease on barley. 6<sup>th</sup> International symposium on the microbiology of aerial plant surfaces. September, 11-15, 1995. Bandol, France (Poster Presentation).

## **Patents filed**

**Mitra Joyeeta, Bhuvaneshwari V, Paul PK (2012) A novel broad spectrum biocide for controlling diseases of crops, 2737/DEL/2011, National (Filed) (Complete)**

**Bhuvaneshwari V, Paul PK (2012) Kit for demonstrating DNA-protein interaction in plants, 2806/DEL/2011, National (Filed) (Complete)**

**Mitra Joyeeta, Paul PK (2012) A broad spectrum botanical biocide for control of crop pathogens, 3542/DEL/2012, National (Filed) (Complete)**

**Goel Navodit, Paul PK (2012) A botanical formulation for control of human enteric pathogens on fresh farm produce, 3781/DEL/2012 National (Filed) (Complete)**

**V. Bhuvaneshwari and P.K Paul. Kit for demonstrating protein-protein interaction in cytoplasm of plants (2012) 3961/ DEL/ 2012 National (Filed) (Complete)**

**V. Bhuvaneshwari and P.K Paul A simple and rapid method for isolation of DNA from bacteria, fungi, plant and animal tissue (2013) 1628 / DEL / 2013 (Complete)**

### **Papers Communicated :**

- 1. Navodit – 02 ( 01 accepted subject to revision )**
- 2. Joyeeta – 03**
- 3. Indu - 01**