

ANNUAL REPORT

2016-17



DEPARTMENT OF PLANT PATHOLOGY
FACULTY OF AGRICULTURE
UTTAR BANGA KRISHI VISWAVIDYALAYA
PUNDIBARI, COOCH BEHAR
WEST BENGAL 736165

UTTAR BANGA KRISHI VISWAVIDYALAYA

FACULTY OF AGRICULTURE

P.O. Pundibari, Cooch Behar, West Bengal 736165

From
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Dean



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Ref. No. 122-D-F/Ag-UBKV

Date: 31.5.2017

Message

It gives me immense pleasure to learn that the Department of Plant Pathology, one of the leading departments of Faculty of Agriculture is going to publish its Annual Report for the year 2016-17. Annual Report is a vital document which encompasses various activities, achievements, performance and future plan of the department. It provides not only the major initiatives taken by the department for coordinating and maintaining standards of education at UG and PG levels but also emphasizes on the various endeavours taken by the department in the sphere of research and extension. The Plant Pathology Department is successfully coordinating all the programmes of teaching starting from visual aided class room study to experiential learning program in accordance with the syllabi of ICAR. The department is credited to have two Experiential Learning projects viz., Production and processing of mushroom and Mass production of biocontrol agents. Post graduate studies (M.Sc. and Ph.D) are also continuing and students of the Department are showing excellent performance at their respective professions after being awarded. The number of teachers in the department has increased in recent times and all the teachers are actively engaged in guiding the students for achieving their academic excellence and shaping their career. The department is also playing a pivotal role in implementing different national and international projects in due cognizance of the regional need and especially for adaptation to climate resilient agriculture. Farmers of the region are also getting assistance from the faculties of the department in the field of crop disease management whenever sought for.

During the recent years, the Faculty of Agriculture has undertaken a number of new initiatives with a view to ensuring excellence in education. I do hope that the data / information provided in this Annual Report will be useful for the teachers, students, researchers, administrators and stakeholders in higher education.

I would like to take this opportunity to express my sincere thanks and gratitude to all the members of the department for their unstinted support in carrying forward the agenda of the Faculty.

I duly acknowledge the valuable contributions made by my colleagues in bringing out the Annual Report in its present form and I do hope that they will continue publishing similar reports in regular manner in the coming year

Feedback from different corners for improving the contents of the Annual Report will be highly appreciated.

Dean

Faculty of Agriculture



DEPARTMENT OF PLANT PATHOLOGY

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Prof. Ayon Roy
Head

Ref. No.

Date:

PREFACE

Department of Plant Pathology is one of the key departments under Faculty of Agriculture of Uttar Banga Krishi Viswavidyalaya. Since establishment of the Viswavidyalaya in 2001, it plays a pivotal role in providing education, research and extension with due cognizance of regional as well as national need. Plant health management is the prime focus in recent time due to paradigm shift in disease scenario and faculties of the department are continuously trying their level best to educate the students, farmers and other stakeholders with all new technologies to combat the biotic stresses. This year one student has got Senior Research Fellowship and two qualified in NET examination.

The department has identified thrust areas of research like identification, ecological fitness and management approaches in different crops, development and identification of disease resistant varieties, development of disease resistance in different crops, conservation agriculture and disease dynamics in climate resilient agriculture, biological control of plant pathogens and refinement in mass production technology of biocontrol agents, system approach in potential use of microbial inoculants for promotion of organic cultivation in the region, evaluation of newly released chemicals for their potential against different pathogens, strain development and refinement in technology for mushroom cultivation. The faculties of the department are working tirelessly to address these issues in time targeted manner and the above ventures have been planned to be executed through national, international and private funded projects.

The department has successfully implemented Experiential Learning Program on Production and processing of mushroom and Mass production of biocontrol agents. This year 15 students are working under ELP on Mushroom whereas in ELP on Biocontrol agent production the number is 9. Two certificate courses on mushroom spawn production and cultivation has been introduced from this year to promote its production in the region and entrepreneurship development in particular.

It is my great pleasure to publish the Annual Report of the department for the year 2016-17, wherein we have tried to incorporate all the information, achievements and future thrust areas which may be helpful to all concerns to get ideas of recent development in academics, research and extension.

I acknowledge the efforts of the faculties and non-teachings staffs of the department who have done a commendable job to accomplish the Annual Report successfully. I am grateful to our Hon'ble Vice Chancellor and Dean, Faculty of Agriculture for their leadership and direction. I express my sincere gratitude and thanks to Dean, PG Studies, Director of Research, Director of Extension, Registrar, Deputy Registrar (Examination) and Comptroller for their constant encouragement and support. I am also thankful to ICAR along with different national, international and private funding agencies for proving financial assistance to reach our goal.

Date: 30.5.2017

Place: UBKV, Pundibari

Head

Department of Plant Pathology

CONTRIBUTORS

Name	Designation	Contact	
Dr. A. Roy	Associate Professor & Head	9434483593/8436515570 avonroy.plantpathology@gmail.com ; roy_avon@rediffmail.com	
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Mr. S. Bhattacharya	TA Grade I	9474331881	
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Mr. S. Roy	Jr. Store Keeper	7076039587	

Annual Report

Department of Plant Pathology at a glance (2016-17)

A. Background:

Department of Plant Pathology is offering post-graduate courses since North Bengal campus of Bidhan Chandra Krishi Viswavidyalaya. However, it has emerged as one of the important departments after establishment of Uttar Banga Krishi Viswavidyalaya in 2001. Apart from its regular academic activities, the faculties of this department are also accountable for social upliftment of rural farming community wherever plant health management is related. A considerable number of project activities funded by national and international funding agencies facilitate to solve the fundamental and applied research problems with particular demand of North Bengal scenario. The faculties of the department are in constant touch with the farmers to advocate them with new emerging technologies in agriculture sector. The major activity surrounds conservation agriculture, organic agriculture, biological control, disease management strategies to name a few.

B. Functions:

Teaching of UG and PG, Research programmes of PG students and different adhoc projects of national and international funding, extension activities.

C. Teaching:

a) **Field of specialization for M.Sc. and Ph.D.:** Mycology, Bacteriology, Virology, Fungal Pathology, Biological control, Plant Disease Management

b) **Undergraduate courses:**

i) **Compulsory courses:**

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	PPA 151/ PPA 152	Introduction to Plant Pathogens	2+1	2 nd (IV Dean Committee)
2.	PPA 151	Fundamentals of Plant Pathology - I	2+1	2 nd (V Dean Committee)
3.	PPA 201	Fundamentals of Plant Pathology-II	1+0	3 rd
4.	PPA 251	Diseases of field crops and their management	2+1	4 th (Ag.)
5.	PPA 301	Diseases of Horticultural crops and their management - I	2+1	5 th (Ag. & Hort.)
6.	PPA 351	Diseases of Horticultural crops and their management - II	2+1	6 th (Hort.)

ii) Elective courses:

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	PPA 401	Mushroom cultivation	1+1	7 th
2.	PPA 402	Epidemiology and Disease Assessment	1+1	7 th
3.	PPA 403	Biological control agents and their mass production	2+1	7 th
4.	PPA 404	Diagnosis and management of plant diseases	2+1	7 th
5.	PPA 405	Techniques in Plant Pathology	0+2	7 th

c) Post graduate courses:

Sl. No.	Course No.	Title of the course	Credit Hour	Remarks
Master degree courses				
Core courses				
1	PPA-501	Introductory Mycology	2+1	1 st Semester
2	PPA-502	Introductory Plant Virology	2+1	1 st Semester
3	PPA-503	Introductory Plant Bacteriology	2+1	1 st Semester
4	PPA-504	Principles of Plant Pathology	3+0	1 st Semester
5	PPA-505	Detection and Diagnosis of Plant Diseases	0+2	1 st Semester
6	PPA-506	Principles of Plant Disease Management	2+1	2 nd Semester
7.	PPA-507	Diseases of Field Crops	2+1	2 nd Semester
Minor/Supporting courses				
1	PPA-508	Diseases of Fruits, Plantation and Ornamental Crops	2+1	2 nd Semester
2	PPA-509	Diseases of Vegetables, Spices and Medicinal Crops	2+1	2 nd Semester
3	PPA-510	Seed Health Technology	2+1	2 nd Semester
4	PPA-511	Chemicals in Plant Disease Management	2+1	2 nd Semester
5	PPA-512	Ecology of Soil Borne Plant Pathogens	2+1	2 nd Semester
6	PPA-513	Disease Resistance in Plants	2+0	3 rd Semester
7	PPA-514	Insect Vectors of Plant Viruses and other Pathogens	1+1	3 rd Semester
8	PPA-515	Biological Control of Plant Diseases	1+1	3 rd Semester
9	PPA-516	Integrated Disease Management	2+1	3 rd Semester
10	PPA-517	Epidemiology and Forecasting of Plant Diseases	2+1	3 rd Semester
12	PPA-518	Post Harvest Diseases	1+1	4 th Semester

Sl. No.	Course No.	Title of the course	Credit Hour	Remarks
13	PPA-519	Plant Quarantine	2+0	4 th Semester
14	PPA 591	Seminar I	1+0	4 th Semester
Doctoral degree courses				
1	PPA-601	Advanced Mycology	2+1	1 st (Ph.D)
2	PPA-602	Advanced Virology	2+1	2 nd (Ph.D)
3	PPA-603	Advanced Bacteriology	2+1	2 nd (Ph. D.)
4	PPA-604	Molecular basis of Host Pathogen Interaction	2+1	3 rd (Ph. D.)
5	PPA-691	Seminar I	1+0	2 nd
6	PPA-692	Seminar II	1+0	6 th

d) Post graduate requirement:

- i) **For M.Sc.(Ag) Degree:** 4 year B. Sc. (Ag.) from a recognized University with a minimum OGPA of 6.5 in 10 point scale and at least 60% marks in Higher Secondary or equivalent examination may apply for admission test. The minimum OGPA and marks for SC/ST/PWD candidates are 6.00 and 50% respectively. Candidates who have passed in Bachelors' Degree with at least 60% marks (50% for SC/ST/PWD) under traditional system may also apply.
- ii) **For Ph.D. Degree:** Consistently good academic records with Master's Degree in Agriculture / Horticulture / Forestry Science having at least 6.5 OGPA (6.00 OGPA for SC, ST and PWD candidates) from any recognized Indian/Foreign University followed by Bachelors' Degree in Agricultural / Horticultural / Forestry Science under 10+2+4 or 10+1+4 or 11+4. Experience of Dissertation in University / Institute for at least one year.

iii) Students' Achievement:

No. of students under different ELPS

- a. Mushroom production and processing: 15
- b. Biocontrol agent production: 9

SRF: 1

ARS-NET: 2

iv) Students' Placement:

Govt.: 3

Corporate: 1

Bank:

D. Research Activity:

a) Scholarships, stipends and fellowships:

- University merit fellowship of M.Sc. (Ag.) students.
- University Research Scholarship for Ph.D. students

b) On-going research projects:

Sl. No	Grant agency	Title of the project	Duration	Amount in lakh
1.	Willowood Chemicals Pvt. Ltd.	Bio-efficacy and phytotoxicity study of WCPL 6060 against blast (<i>Pyricularia oryzae</i> Cavara) & blight disease in paddy crop	2016-17 to 2017-18	2.47
2.	M/S Krishi Rasayan Export Pvt. Ltd.	Evaluation of bio-efficacy, phytotoxicity and residue of Cyazafamid 34.5%SC on Potato and Tomato Crops”	2016-17 to 2017-18	3.90
3.	M/S. Agro Life Science Corporation	To evaluate the bio-efficacy and Phytotoxicity and residue analysis of Tricyclazole 75% WP on paddy	2016-17 to 2017-18	0.975
6.	CRP, CGIAR	Spot blotch of wheat: delivering resistant wheat lines and diagnostics and molecular markers for resistance	2012-17	1500 USD
7.	OCPF, Morocco and ICARDA	Increasing food legumes production by small farmers to strengthen food and nutrition security through adoption of improved technologies and governance within south-south cooperation	5 years (2012-17)	42.00
8.	Australian Centre for International agricultural Research	Sustainable and resilient farming systems intensification in Gangetic Plains	7 years (2014-21)	892.00
9.	Syngenta	“Evaluation of new fungicide molecules offering better plant disease management”	2015-2017	6.448
10.	ICAR-NBPGR	Evaluation of wheat germplasm of NBPGR under Agro Biodiversity Component II	2014-17	12.3
11.	ICAR-IIWBR	Biotic stress in Wheat under changing climatic scenario	2015-17	2.81
12.	United Phosphorus Ltd. (UPL)	To evaluate the bio-efficacy and Phytotoxicity of ‘Juniper’ against the Fruit rot (<i>Colletotrichum capsici</i>), Powdery mildew (<i>Levillula taurica</i>) & Leaf spot (<i>Cercospora capsici</i>) diseases of Chilli crop.	2016-17	2.34
13.	UPL	To evaluate the bio-efficacy and Phytotoxicity of new fungicide “Juniper” against diseases in Paddy	2016-17	2.34
14.	Directorate of Research, UBKV	Development of a PCR based virus detection system for <i>solanaceous</i> vegetables in North Bengal	2016-18	6.0

Sl. No	Grant agency	Title of the project	Duration	Amount in lakh
15.	Directorate of Research, UBKV	“Exploration of the Soil microbial diversity of different agro-ecological zones of North Bengal for Agricultural use”	2016-20	12.0
16.	Directorate of Research, UBKV	Collection, characterization, in situ and ex-situ conservation of rice of North-Eastern India including the areas under jurisdiction of the University.	2016-20	17.5

E. Extension activities:

- On farm plant protection advisory services.
- Proper diagnosis of disease problems communicated from farmers’ end or government level.
- Capacity building of machinery service providers for use of modern agricultural implements used in conservation agriculture.
- Training to the farmers on appropriate crop husbandry protocols under conservation agriculture.
- Training on modern techniques in plant disease management.
- Different other Farmer training programmes by the faculties of the department
- Exposure to develop field knowledge on identification and preservation of diseases samples for UG students from different nearby colleges of North Bengal districts.
- Supply of microbial agents for promotion of organic cultivation.
- Training on appropriate use of biofertilizers and biocontrol agents.
- Training on mushroom spawn production and cultivation.
- Supply of quality spawn to the mushroom growers.

F. Infrastructural and Support Facilities available:

- Department is equipped with all essential instruments like students microscope, trinocular microscope with photographic attachment, laminar air flow, autoclave (vertical and horizontal), BOD incubator, shaker incubator, refrigerator, deep freeze (-80°C), spectrophotometer (visible range and UV vis), single and double distillation, hot air oven, precision balance, pH meter, seed dryer, seed germinator, hot water bath, gel apparatus, vortex mixture, solid and liquid state fermentor, industrial mixer, grinder, ion analyser, SPAD meter, etc.to carry out different academic and research activities. The department has UG and PG laboratories where all kinds of facilities are available. UG and PG level classes are conducted through audio visual aids with internet facilities.
- A bio-control agent mass production unit was established under Experiential Learning Programme funded by ICAR and is running successfully through production of different bioagents like *Trichoderma*, *Pseudomonas fluorescens*, *Rhizobium*, *Azotobacter*, *Azospirillum*, Phosphate solubilizing bacteria. In the unit one training hall has been developed where at a time 35-40 students/farmers can be accommodated for training through audio visual aids.

- One mushroom spawn production unit and one mushroom cultivation unit have been created from ICAR fund under Experiential Learning Programme with the capacity to produce 1500 spawn packets and 2000kg mushroom per month.
- One plant disease cafeteria has been established to orient students on field level identification of plant pathogens.

G. Faculty and staffs:

a) **Head of the Department** : Dr. Ayon Roy, Associate Professor

b) **Faculty:**

Sl. No.	Name	Designation	Specialization	Contact address
1.	Prof. A. K. Chowdhury	Professor	Fungi and Plant infection	Department of Plant Pathology, UBKV, Pundibari, Coochbehar - 736165, W.B.
2.	Dr. P. M. Bhattacharya	Assistant Professor (Sr. Scale)	Fungi and Plant infection	Do
3.	Dr. S. Bandyopadhyay	Assistant Professor (Sr. Scale)	Fungal Pathology	Do
4.	Dr. S. Khalko	Assistant Professor (Sr. Scale)	Fungal Pathology	Do
5.	Dr. S. Hembram	Assistant Professor, RRS Terai Zone	Bacteriology	Regional Research Station, Terai Zone, UBKV, Pundibari, Coochbehar - 736165, W.B.
6.	Dr. A. Debnath	Assistant Professor, AICRP on Spices	Biological control	AICRP on Spices, UBKV, Pundibari, Coochbehar - 736165, W.B.
7.	Miss S. Das	Assistant Professor, AINP on Jute & Allied Fibres	Bacteriology	AINP on Jute and Allied Fibres, UBKV, Pundibari, Coochbehar - 736165, W.B.

c) Non-teaching staffs

Sl. No.	Name	Designation	Contact address
1.	Mr. S. Bhattacharya	Technical Assistant	Department of Plant Pathology, UBKV, Pundibari, Coochbehar - 736165, W.B.
2.	Mr. S. Sarkar	Superintendent (Technical)	Do
3.	Mr. M. Saha	Junior Peon	Do
4.	Mr. Saumendu Roy	Junior Store Keeper	Do

H. Doctoral Thesis awarded/submitted:

Sl. No.	Title	Year	Author	Chairman
1.	Studies on biological intervention for productivity improvement in rice-lentil cropping system	2016	Mr. Senpon Ngomle	Dr. P. M. Bhattacharya
2.	Dependency of chilli on microbial inoculation	2016	Mr. Bharat Singh Ambesh	Dr. Ayon Roy

I. Master Degree thesis completed

Sl. No.	Title	Year	Author	Chairman
1.	Studies on some traits in wheat related with resistance to spot blotch disease	2016	Mr. Sukram Thapa	Dr. P. M. Bhattacharya
2.	Study on partitioning of nutrients under the influence of bio-inoculation in chilli.	2016	Mr. Binoy Krishno Mahato	Dr. P. M. Bhattacharya
3.	Studies on developing high yielding strains of <i>Pleurotus</i> spp. through selective dikaryotization	2016	Mr. Deewakar Baral	Dr. A. Roy
4.	Resistance studies on sheath blight of rice and its chemical management	2016	Miss M. Ashajyothi	Dr. S. Khalko
5.	Identification of foliar blight pathogen in wheat	2016	Mr. Bijan Kumar Pain	Prof. A. K. Chowdhury

J. Paper & Books published

Sl. No.	Title	Author	Journal
Paper (Research and Extension)			
1.	Biofumigation – An eco-friendly approach for managing bacterial wilt and soft rot disease of ginger	Dr. S. Bandyopadhyay & Dr. S. Khalko	<i>Indian Phytopathology</i> , 69 (1): 53-56.
2.	Conservation and evaluation of turmeric germplasms in Terai region of West Bengal, India, Page No. S299-S302	Bandyopadhyay, S., Chakraborty, S., Datta, S., Devnath, A., Roy, M. K. and Haque, S.	<i>Ecology Environment & Conservation</i> , 22(April Suppl.): S299 – S302
3.	Evaluation of turmeric germplasm for tolerance to foliar diseases in Terai region of West Bengal.	Chakraborty, S., Bandyopadhyay, S., Debnath, A., Dutta, S., Roy, M. K. and Haque, S.	<i>International Journal of Agricultural Science and Research</i> , 6(4): 61-68.
4.	Characterization of different isolates of <i>Bipolaris/Alternaria</i> causing leaf blotch/blight of wheat and their test of pathogenicity	Bandyopadhyay, S., Laha, S. K., Chowdhury, A.K. and Bhattacharya, P.M.	<i>Indian Phytopathology</i> , 69(4S): 110-112.
5.	Cultural and morphological variability of different isolates of <i>Bipolaris sorokiniana</i> infecting wheat in the eastern alluvial plains of India	Chowdhury, A.K., Bhattacharya, P.M, Mukherjee, Soma, Ganguly Sebantee and Singh Gyanendra	<i>J Mycopathol Res.</i> 54(2):263-267.
6.	Wheat blast disease - An overview	Saharan, M.S, Bhardwaj, S.C., Chatrath, R, Sharma, P, Choudhury, A.K. and Gupta, R.K.	<i>J Wheat Res.</i> , 8: 1-5

7.	Resistance of spot blotch of wheat in Esatern Gangetic Plains of India	Chowdhury, A.K., Bhattachrya, P.M., Mishra, V.K. and Chand Ramesh	<i>In:Proc. of International Conference of agriculture and environment</i> , pp17
9.	Screening of <i>Trichoderma</i> isolates for their potential of biosorption of nickel and cadmium.	Nongmaithem, N., Roy, A. and Bhattacharya, P.M.	<i>Brazilian Journal of Microbiology</i> .47:305-313.
10.	In vitro antagonistic potential of <i>Trichoderma</i> sp. Against <i>Rhizoctonia solani</i> under heavy metal stress	Nongmaithem, N., Roy, A. and Bhattacharya, P.M.	<i>Indian Phytopathology</i> .69(1):61-66.
11.	Effect of microbial consortium on plant growth promotion, biochemical attributes and nutrient uptake of cabbage (<i>Brassica Oleracea</i> l var. capitata)	N. Sarkar, A. Roy and P. M. Bhattacharya.	<i>The Bioscan</i> . 11(3): 1393-1396.
12.	Determinant of resistance in bread wheat genotypes at different date of sowing to spot blotch disease	Thapa Abishek, Chowdhury A.K., Bhattacharya P.M., Rai Barun, Thapa Sukram And Chhetri Binoy.	<i>International Journal of Agricultural Science</i> .8 (19): 1339-1341.
13.	Evaluation of physiological trait for spot blotch (<i>Bipolaris Sorokiniana</i>) resistance in wheat genotype (<i>Triticum Aestivum</i>).	Aditya Rai, Abishak Thapa, P. M. Bhattacharya, A. K. Chowdhury And M. Ranjana Devi	<i>The Bioscan</i> .11 (4): 2727-2731.
14.	Evaluation of 19,460 Wheat Accessions Conserved in the Indian National Genebank to Identify New Sources of Resistance to Rust and Spot Blotch Diseases	Sundeeep Kumar, Sunil Archak, R. K. Tyagi, Jagdish Kumar, Vikas VK, Sherry R. Jacob, Kalyani Srinivasan, J. Radhamani, R. Parimalan, M. Sivaswamy, Sandhya Tyagi, Mamata Yadav, Jyotisna Kumari, Deepali, Sandeep Sharma, Indoo Bhagat, Madhu Meeta, N. S. Bains, A. K. Chowdhury, B. C. Saha, P. M. Bhattacharya, Jyoti Kumari, M. C. Singh, O. P. Gangwar, P. Prasad, S. C. Bharadwaj, Robin Gogoi , J. B. Sharma, Sandeep Kumar GM, M. S. Saharan, Manas Bag, Anirban Roy, T. V. Prasad, R. K. Sharma, M. Dutta, Indu Sharma, K. C. Bansal.	<i>PLoS ONE</i> . 11(12): e0167702.
15.	Screening of resistance of piper betle landraces against <i>Singhiella pallida</i>	Dhar, T, Bhattacharya, P. M., Biswas, S., and Bhattacharya, S.	<i>The Bioscan</i> . 11(2): 725-731.

	(hemiptera : aleyrodidae)		
16.	Shelf life of <i>Trichoderma harzianum</i> in carrier and pellet based formulation.	Roy, A. and Bhattacharya, P.M.	<i>Journal of Mycopathological Research.</i> 54(1): 65-70.
17.	<i>In vitro</i> evaluation of some new fungicides against blast and sheath blight pathogens in rice.	Roy, A.	<i>Journal of Mycopathological Research.</i> 54(1): 71-75.

Technical Bulletin - Nil

Book Chapter

1.	Cultural methods of plant disease management in organic system of Agriculture	Dr. S. Bandyopadhyay	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its Utilization,</i> pp 12-21.
2.	Seedling biopriming- A module based system approach for organic vegetable cultivation.	Bhattacharya, A. and Roy, A.	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 41-48.
3.	Exploring plant growth promoting microbes for sustainable farming system in 21 st century	Roy, A. and Bhattacharya, P.M.	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 49-55.
4.	Technological Excellence in Integrated Crop Health Management: An affordable option in India.	Chattopadhyay, C., Roy, A. and Birah, A.	<i>Agriculture Today,</i> pp. 192-195.
5.	Mushroom cultivation and its scope in west bengal	Prof. A. K. Chowdhury	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 1-11.
6.	Management of plant diseases by biological control agents under organic agriculture system	Dr. Anamika Debnath	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 22-40.
7.	Botanicals in plant disease management	Dr. Surajit khalko	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 70-76.
8.	Some important indigenous medicinal plant of India and their various uses	Dr. Satyajit Hembram	<i>In: Chowdhury, A. et al. eds. Bioresource in North Bengal and its utilization.</i> pp. 77-96.

Book

	Bioresource in North Bengal and its Utilization, Page No. 1-97	Eds. Dr. A. K. Chowdhury, Dr. P. M. Bhattacharya, Dr. A. Roy & Dr. S. Bandyopadhyay	Published by Department of Biotechnology GOI funded project on Establishment of Rural
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Bioresource Complex in North Bengal at UBKV, Pundibari, Coochbehar

K. Seminar, Symposium, Conference, Training and Winter/Summer/Refresher course/short course attended/organized

Sl. No.	Seminar, Symposium, Conference, Training and Winter/Summer/Refresher course/short course	Faculty associated	Date	Venue	Attended/Organized
1.	National symposium on “Challenges towards plant health under changing climate scenario for sustainable agriculture”	Dr. S. Bandyopadhyay, Miss S. Das	Nov. 24-26, 2016	BCKV, Kalyani, organized by ISMPP	Attended
2.	National symposium on “Impact of climate change, biodiversity and good plant protection practices on crop productivity”	Dr. S. Hembram, Dr. S. Khalko, Miss S. Das	Dec. 24-25 2016	BCKV, Kalyani, organized by AAPP	Attended
3.	National Symposium on "Diagnosis and Management of Plant Diseases: Integrated Approaches and Recent Trends”	Dr. S. Bandyopadhyay	9-11 January, 2017	ICAR Research Complex for NEH Region, Umiam, Meghalaya,	Attended
4.	12th National Symposium on biotic stress management strategies: challenges-environmental harmonization	All faculty members	17-19 February, 2017	UBKV, Pundibari	Organized & attended
5.	Regional Workshop on “Bio resource in North Bengal and its Utilization”	All faculty members	22 August, 2016	UBKV, Pundibari	Organized & attended
6.	National Symposium organized by Indian Phytopathological Society on “Plant Health Management for food security and safety”	Dr. Ayon Roy	8-9 December, 2016	BCKV, Mohanpur, Nadia, W.B.	Attended
7.	International Conference on Agriculture and Environment	Prof. A. K. Chowdhury	21-25 May, 2016	Kuala Lumpur, Malaysia	Attended
8.	CRP training on spot blotch of wheat	Dr. P. M. Bhattacharya	23 – 25 Feb, 2017	Banaras Hindu University, Varanasi	Attended
9.	1 st Regional Science and Technology Congress-2016	Dr. A. Debnath	November 7-8, 2016.	A. C. College, Jalpaiguri	Attended
10.	21 day Training course on “Fungal diversity and	Dr. A. Debnath	26 th September	IARI, New Delhi	Attended

	modern trends in taxonomy through DNA barcoding and Chemo-profiling”		to 16 th October, 2016		
11.	XXVII AICRP on spices annual workshop	Dr. A. Debnath	24-26 October, 2016	NRC, Seed Spices, Ajmer, Rajathan	Attended

M. List of visitors in Department of Plant Pathology, UBKV, Pundibari, Coochbehar

For Project Related matter:

1. Dr. Jalal Uddin, Executive Chairman, Bangladesh Agriculture Research Centre, Bangladesh
2. Dr. ASM Mahbubur Rahman Khan, CSO, OFRD, BARI, Bangladesh
3. Dr. Chaitanya Kumar Das, Director, Field Services Wing, Khamarbari, DAE, Bangladesh
4. Dr. A. K. Singh, Vice Chancellor, BAU, Bihar
5. Dr. B.P. Bhatt, Director, ICAR-RCER, Patna, Bihar
6. Dr. Surya Prasad Paudel, Deputy Director General, DoA-Nepal
7. Dr. YR Pandey, Executive Director, NARC, Nepal
8. Dr. Peter Brown, Senior Research Scientist, CSIRO, Australia
9. Dr. PK Joshi, Director-South Asia, International Food Policy Research Institute, New Delhi
10. Prof. R. Quentin Grafton, The Australian National University, Australia
11. Prof. Ram Dalal, Queensland University, Australia
12. Dr. Fay Rola-Rubzen, Deputy Dean, Curtin University, Australia
13. Prof. Roy Murray-Prior, Curtin University, Australia
14. Dr. Averil Besier, Sr Program Manager DFAT/SDIP, Australia
15. Dr. Eric Huttner, Research Program Manager, Crop Improvement and Management, ACIAR, Australia
16. Dr. John Dixon, Principal Advisor/Research Program Manager ,Cropping Systems and Economics (CSE) Program, ACIAR, Australia
17. Dr. Kuhu Chatterjee, Regional Manager, ACIAR, New Delhi
18. Dr. Ian Reid, Education Services Manager, International Centre of Excellence in Water Resources Management, (ICE WaRM), Australia
19. Dr. Evan Christen, Research Program Manager, Land and Water Resources, ACIAR, Australia
20. Dr. T.P. Tiwari, Country Representative, CIMMYT, Bangladesh
21. Dr. M. Gathala, Cropping System Agronomist, CIMMYT, Iran
22. Dr. M.L. Jat, Senior Cropping System Agonomist, CIMMYT, Delhi

For Academic purpose:

1. Prof. Ashok Bhattacharya, Department of Plant Pathology, AAU, Jorhat
2. Dr. M.K. Biswas, Division of Crop Protection, Palli Siksha Bhavan
3. Dr. S. Banik, Nagaland University, Medziphema
4. Dr. Kajal Biswas, Division of Plant Pathology, IARI

N. Faculty Council Members from the Department

1. Prof. A. Roy as Head
2. Prof. A.K. Chowdhury
3. Prof. P.M. Bhattacharya

O. Association with different societies

Name of the Society	Faculty Members
Indian Phytopathological Society	Prof. A.K. Chowdhury, Dr. A. Roy, Dr. P.M. Bhattacharya, Dr. S. Bandyopadhyay, Dr. S. Khalko, Dr. S. Hembram
American Phytopathological Society	Prof. A.K. Chowdhury, Dr. A. Roy, Dr. P.M. Bhattacharya, Dr. S. Bandyopadhyay, Dr. S. Khalko, Dr. S. Hembram
Indian Society of Mycology and Plant Pathology	Prof. A.K. Chowdhury, Dr. A. Roy, Dr. P.M. Bhattacharya, Dr. S. Bandyopadhyay
Indian Mycological Society	Prof. A.K. Chowdhury, Dr. P.M. Bhattacharya, Dr. A. Roy
Coochbehar Association for Cultivation of Agricultural Sciences	Prof. A.K. Chowdhury, Dr. A. Roy, Dr. P.M. Bhattacharya, Dr. S. Bandyopadhyay, Dr. S. Khalko, Dr. S. Hembram
Indian Science Congress Association	Prof. A. K. Chowdhury
Society for Advancement of Wheat Research	Prof. A.K. Chowdhury
Asian PGPR Society	Prof. A.K. Chowdhury, Dr. A. Roy, Dr. S. Bandyopadhyay and Dr. S. Hembram
Indian Natural Fibre Society	Dr. A. Roy
Bioscan	Dr. P.M. Bhattacharya, Dr. A. Roy
Society for Advancement of Wheat Research	Prof. A.K. Chowdhury, Dr. P.M. Bhattacharya
Crop and weed science society	Dr. S. Khalko

P. Programmes organized by the Department

- Certificate Course on Mushroom Production
- Certificate course on mushroom spawn production
- Experiential Learning Programme on mushroom cultivation and processing to the students
- Experiential Learning Programme on Bio control agent production to the students
- Regional Workshop on Bioresource in North Bengal of DBT on 22nd August, 2016.
- 12th National Symposium on biotic stress management strategies: challenges- environmental harmonization on 17-19th February, 2017

R. Abroad visit by faculties of the Department

- International Conference on Agriculture and Environment organized by New Zealand House of Science by Prof. A.K. Chowdhury at Malaysia during May, 2016
- Regional consultation workshop on wheat blast by Dr. P.M. Bhattacharya at Nepal during July, 2016.

S. Recognition:

Dr. P. M. Bhattacharya: Received International travel fellowship from CIMMYT to attend the Wheat Pathology Course in Kenya-2016

Dr. S. Bandyopadhyay & Dr. A. Debnath: Received 2nd Prize for poster presentation in the 12th National Symposium on biotic stress management strategies: challenges-

environmental harmonization” held during 17-18 February, 2017 for the paper entitled 17-18 “Efficiency of.....new molecules” by the society of Plant Protection Sciences, New Delhi

T. Departmental Committee Meeting held:8 (13.05.2016, 12.07.2016, 16.08.2016, 02.09.2016, 16.09.2016, 20.10.2016, 22.12.2016, 09.03.2017)

U. Research activities by PG students (continuing)

Name of the student	Research problem	Name of the Chairman, Advisory Committee
Ph.D. in Plant Pathology		
Joyoshree Mahanta	Effect of organic production system on disease dynamics and soil health in rice based cropping sequence.	Prof. S.K. Laha
Manoharmayum Dolpriya Devi	Study of variation of pathogen causing spot blotch of wheat and different traits of the host related to its resistance	Dr. P.M. Bhattacharya
Avishak Thapa	Resistance of wheat against spot blotch disease and terminal heat stress in North Bengal	Dr. A. Roy
Dharnendra Reang	Study on fungal diseases of chilli (<i>Capsicum annum</i> L.) in northern parts of West Bengal	Dr. S. Khalko
M. Ranjan Devi	Impacts of conservation agriculture on major diseases of rice and wheat under rice wheat cropping system	Dr. S. Ali (Kalimpong RRS)
S.J. Gompa	Evaluation of important fungal diseases of lentil under Terai Zone of West Bengal	Dr. B.R. Sharma (Kalimpong RRS)
Barun Rai	Assessing the impacts of conservation agriculture on plant diseases in rice wheat cropping system.	Prof. A.K. Chowdhury
M.Sc. (Ag.) in Plant Pathology		
M. Avijeeth	Response to bioinoculation of <i>Trichoderma</i> sp. and fluorescent pseudomonas for induction of biochemical defences in cabbage against <i>Alternaria</i> leaf spot.	Dr. A. Roy
Sushmita Jha	An integrated approach to manage late blight of potato.	Dr. S. Khalko
Suman Datta	Study on blast disease of rice and its management strategies.	Dr. S. Bandyopadhyay
Tanmay Nag	Response of nitrogen and water management on spot blotch of wheat in north eastern plain zone.	Dr. P.M. Bhattacharya
Soumen Mandal	Resistance to spot blotch of wheat at hot spot of West Bengal.	Prof. A.K. Chowdhury
Rakesh Patsa	Influence of weather indices on spot blotch disease of wheat in north eastern plain zone of India.	Dr. S. Hembram

Name of the student	Research problem	Name of the Chairman, Advisory Committee
Aparajita Dhar	Qualitative and quantitative evaluation of some mushroom hybrids of <i>Pleurotus</i> sp.	Dr. S. Bandyopadhyay
P. Asha Devi	Elucidation of defence responses in wheat against <i>Bipolaris sorokiniana</i> Shoe Maker by using non conventional chemicals	Dr. P. M. Bhattacharya
Sinija Das K	Variation of <i>Bipolaris sorokiniana</i> , the causal agent of spot blotch of wheat with special reference to toxin production	Prof. A. K. Chowdhury
Pulak Bhaumik	Evaluation of lentil genotypes against major diseases in North Bengal	Dr. S. Khalko



Some activities of the Department