

ANNUAL REPORT 2017-18



**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
Prof. Tapan Kumar Hath
Dean



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Message

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.

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 2017-18. The Plant Pathology Department is successfully coordinating all the programmes of teaching, research and extension in accordance with the mandate of ICAR. 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 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.

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 it plays a pivotal role in providing quality education, research and extension with due cognizance of regional as well as national need. Faculties of the department are continuously extending their effort to educate the students, farmers and other stakeholders with all new technologies to combat the biotic stresses. This year out of four students of M.Sc., three students qualified in NET examination which prove the academic excellence of the department. A departmental library has been set up for providing good academic facilities to the post graduate students.

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 is successfully continuing Experiential Learning Program on Production and processing of mushroom and Mass production of biocontrol agents. This year 20 students are working under ELP on Mushroom whereas, in ELP on Biocontrol agent production the number is 18. Two certificate courses on mushroom spawn production and cultivation are also running successfully 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 2017-18, 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: 11.6.2018

Place: UBKV, Pundibari

Head

Department of Plant Pathology

CONTRIBUTORS

Name	Designation	Contact	
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Mr. S. Bhattacharya	TA Grade I	9474331881	
Mr. Mahadeb Saha	Sr. Peon, RRS Terai Zone	9932350420	
Mr. S. Roy	Jr. Store Keeper	7076039587	

Annual Report

Department of Plant Pathology at a glance (2017-18)

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, Fungi and Plant infection

b) **Undergraduate courses:**

i) **Compulsory courses:**

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	PPA 151	Fundamentals of Plant Pathology - I	2+1	2 nd , Vth Deans
2.	PPA 201	Fundamentals of Plant Pathology – II	1+0	3 rd , Vth Deans
3.	PPA 202	Fundamentals of Plant Pathology	2+1	3 rd (Hort.), Vth Deans
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

Sl. No.	Course No.	Title of the course	Credit Hour	Remarks
12	PPA-518	Post Harvest Diseases	1+1	4 th Semester
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-691	Seminar I	1+0	2 nd
5	PPA-604	Molecular basis of Host Pathogen Interaction	2+1	3 rd (Ph. D.)
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: 20
- b. Biocontrol agent production: 18

SRF: Nil ARS-NET: 3

iv) Students' Placement:

Govt.: 1 Corporate: Nil Bank: Nil

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
4.	Willowood Chemicals Pvt. Ltd.	Study on Bio Efficacy, Phytotoxicity and residue analysis of some Herbicides & Chemicals in tea and non – cropped area”	2017-18 to continuing	14.63
5.	Willowood Chemicals Pvt. Ltd.	Bio-efficacy, Phytotoxicity and effect on natural enemies of some new generation insecticide molecules on different crops”	2017-18 to continuing	8.55
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.	ICARDA-GOWB Collaborative project	Enhancing Pulses Production for Food and Nutritional Security, Improved Livelihoods, and Sustainable Agriculture in West Bengal		
10.	NFSM, Ministry of Agriculture, Govt. of India	Survey and Surveillance for wheat blast caused by <i>Magnaporthe oryzae</i> pathotype <i>tritricum</i> and strategic research to manage it.	2017-20	24.788
11.	NMPB, Ministry of AYUSH, Govt. of India	Survey of pest and diseases of medicinal plants in West Bengal.	2017-20	34.01
12.	Syngenta India Limited	Evaluation of new fungicides offering better chemical	2017-19	15.40

Sl. No	Grant agency	Title of the project	Duration	Amount in lakh
		management of plant diseases.		
13.	Krishi Rashayan Exports Pvt. Ltd.	To evaluate the Bio-efficacy and phytotoxicity and residue analysis of Iprodion 50% WP against sheath blight disease in rice.	2018-20	3.36
14.	Directorate of Research, UBKV	Development of a PCR based virus detection system for solanaceous vegetables in North Bengal	2016-18	6.0
15.	Krishi Rasayan Export Pvt. Ltd.	Evaluation of bio-efficacy, Phytotoxicity and residue Cyazafamid 34.5% SC on potato and tomato crops.	2016-18	3.9
16.	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
17.	Krishi Rasayan Export Pvt. Ltd.	To Evaluate the bio-efficacy and phyto-toxicity of Iprodione 50% WP against sheath blight disease in rice	2018-20	3.36

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.
- Awareness development against suspected blast spread in wheat cultivation over North Bengal

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.
- One departmental library has been set with facilities of internet access and book lending.

G. Faculty and staffs:

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

b) **Teaching staffs:**

Sl.No.	Name	Designation	Specialisation	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	Professor	Fungi and Plant infection	Do
3.	Dr. S. Bandyopadhyay	Assistant Professor	Fungal Pathology	Do
4.	Dr. S. Khalko	Assistant Professor	Fungal Pathology	Do
5.	Dr. S. Hembram	Assistant Professor	Bacteriology	Regional Research Station, Terai Zone, UBKV, Pundibari, Coochbehar - 736165, W.B.
6.	Dr. A. Debnath	Assistant Professor	Biological control	AICRP on Spices, UBKV, Pundibari, Coochbehar - 736165, W.B.
7.	Mrs. S. Das	Assistant Professor	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), RRS Terai Zone	Do
3.	Mr. M. Saha	Sr Peon, RRS Terai Zone	Do

4.	Mr. Saumendu Roy	Junior Store Keeper	Do
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H. Doctoral Thesis awarded/submitted:

Sl. No.	Title	Year	Author	Chairman
1.	Study of variation of pathogen causing spot blotch of wheat and different traits of the host related to its resistance	2017	Manoharmayum Dolpriya Devi	Prof. P.M. Bhattacharya
2.	Effect of organic production system on disease dynamics and soil health in rice based cropping sequence.	2017	Joyoshree Mahanta	Prof. S.K. Laha

I. Master Degree thesis completed

Sl. No.	Title	Year	Author	Chairman
1.	Response to bio-inoculation of <i>Trichoderma</i> sp. And fluorescent pseudomonas for induction of biochemical defences in cabbage against Alternaria leaf spot.	2017	M. Avijeeth	Dr. A. Roy
2.	An integrated approach to manage late blight of potato.	2017	Sushmita Jha	Dr. S. Khalko
3.	Study on blast disease of rice and its management strategies.	2017	Suman Datta	Dr. S. Bandyopadhyay
4.	Response of nitrogen and water management on spot blotch of wheat in north eastern plain zone.	2017	Tanmay Nag	Dr. P.M. Bhattacharya
5.	Resistance to spot blotch of wheat at hot spot of West Bengal.	2017	Soumen Mandal	Prof. A.K. Chowdhury
6.	Influence of weather indices on spot blotch disease of wheat in north eastern plain zone of India.	2017	Rakesh Patsa	Dr. S. Hembram

J. Paper & Books published

Sl.No.	Title	Author	Journal
Paper (Research and Extension)			
1.	Evaluation of some turmeric genotypes in Terai region of West Bengal	Chakraborty, S., Dutta, S., Debnath, A., Bandopadhyay, S., Roy, M. K. and Haque, S.	<i>International Journal of Science, Environment and Technology</i> . 6(2): 1065 – 1070.
2.	Effect of Seed Bacterization with Fluorescent Pseudomonads on Growth Promotion of Jute (<i>Corchorus olitorius</i>) in Terai Zone of West Bengal.	Khalko, S., Bandyopadhyay, S. and Debnath, A.	<i>Int. J. Curr. Microbiol. App. Sci.</i> 6(6): 3036-3043.
3.	Morphological and cultural characterization of <i>Phyllosticta zingiberi</i> (Ramkr.) causing leaf spot disease of ginger.	Rai, B., Bandyopadhyay, S., Thapa, A., Rai, A. and Baral, D.	<i>Journal of Applied and Natural Science</i> 9 (3): 1662 – 1665.
4.	Efficacy of Combined	Jha, S., Khalko, S. Ashajyothi,	<i>Int. J. Curr. Microbiol.</i>

	Formulations of Fungicides in Managing Late Blight Disease of Potato Caused by <i>Phytophthora infestans</i> (Mont.) de Bary.	M., Bandyopadhyay, S. and Roy, A.	<i>App. Sci.</i> 6 (12): 765-771.
5.	In-vitro study of new generation chemicals against <i>Rhizoctonia solani</i> Kuhn causing Sheath blight of Rice	A Mushineni, S. Khalko and S. Thapa	<i>International Journal of Agricultural Science.</i> 9(19): 4201-4203
6.	Effect of New Generation Chemicals in Changing Host Physiological Traits to Manage Sheath Blight Disease Caused by <i>Rhizoctonia solani</i> Kuhn in Rice	A Mushineni, S Khalko, S Jha, PM Bhattacharya and A Roy.	<i>Int. J. Curr. Microbiol. App. Sci.</i> 6(11): 351-357
7.	Postharvest Treatments on Storage Life of Guava (<i>Psidium guajava</i> L.) in Himalayan Terai Region of West Bengal, India	P Dutta, N Bhowmick, S Khalko, A Ghosh and SK Ghosh	<i>Int. J. Curr. Microbiol. App. Sci.</i> 6(3): 1831-1842
8.	Effect of different micronutrients on turmeric variety Suranjana in terai region of West Bengal	Chakraborty, S., Dutta S., Jana. J.C., Debnath A., Roy M.K. and Haque S.	<i>Int. J. Curr. Microbiol. App. Sci.</i> 6(5): 1471-1482
9.	Identification and characterization of different pathogens associated with the Rhizome Rot and wilt disease complex of ginger in Darjeeling Himalayas.	Sharma. B. S., Debnath A., Ali. S.S., Baskey. S., Thapa. A. and Datta. S.	<i>J. Mycopathol. Res.</i> 54 (4): 517-521
10.	Evaluation of some important ginger genotypes in Terai region of West Bengal.	Chakraborty S., Datta S., Debnath A. and Roy MK	<i>International Journal of Science, Environment.</i> 7(2): 715-722
11.	Effect of Conservation Agriculture Based Rice-Wheat System on Sheath Blight and Spot Blotch Diseases In Eastern India	Chowdhury, A.K., Bhattacharya, P.M., Santra, A. and Dhar, T	<i>J. Mycopathol, Res,</i> 54(4): 543-54.
12.	Wheat disease dynamics in south east Asia under changed climate scenario	Chowdhury, A.K.	<i>J. Mycopathol, Res,</i> 55(2) : 119-127
13.	Climate change and plant diseases with special emphasis on cereal crops-	Chowdhury, A. K., Roy, A and Chattopadhyay, C.	Satsa Mukhapatra Annual Technical issue 21: 46-58

	An overview.		
14.	Cultural, Morphological and Genetic variability in <i>Exerohilum turcicum</i> – a review.	Ali Sajeed, Sharma, B.R., Sherpa, F and Chowdhury, A.K.	<i>Progressive Agriculture</i> 12: 2721-2724
15.	Domestication of <i>Macrobrachium rosenbergii</i> in terai region of West Bengal.	Sarkar, D., Mukherjee, A., Chowdhury, A.K. and Ninawe, A.S.	International Journal of Fisheries and Aquatic Studies. 5(5): 01-06.DOI: http://dx.doi.org/10.22271/fish
16.	The incidence of wheat blast in Bangladesh and its implications for South Asian wheat production.	Chowdhury, A.K., Saharan, M.S., Agarwal Rashmi, Malaker, Paritosh, Duveiller, E., Singh, P.K., Singh, R.P., Braun, H.J. and Joshi, A.K.	<i>Ind J Genetics</i> 77(1):1-9
17.	Characterising variation in wheat traits under hostile soil conditions in India.	Jaswant S. Khokhar, SindhuSareen, Bhudeva S. Tyagi, Gyanendra Singh, Apurba K. Chowdhury, TapamayDhar, Vinod Singh, Ian P. King, Scott D. Young, Martin R. Broadley	<i>PloS ONE</i> 12(6): e0179208. https://doi.org/10.1371/journal.pone.0179208
18.	Pooling together spot blotch resistance, high yield with earliness in wheat for eastern Gangetic Plains of South Asia.	Ranjan, R, Chand Ramesh, Chowdhury A.K., Bhattacharya, P.M. and Joshi,A.K	Field Crops Research, 214:291-300
19.	Performance of flax genotypes with respect to infestation of capsule borer, <i>Helicoverpa armigera</i> (Hubner) and other yield parameters in the hills of Darjeeling, India.	Roy, S. K., Pal, S., Ghimiray, T. S. and Roy, A.	<i>Journal of Entomology and Zoology Studies</i> . 5(5): 276-280.
20.	Species Diversity and Community Structure of Arthropod Pests and Predators in Flax, <i>Linum usitatissimum</i> L. from Darjeeling (India).	Pal, S., Mandal, R., Sarkar, I., Ghimiray, T. S., Sharma, B. R., Roy, A., Roy, S. K., Chakraborty, G. and Mitra, S.	<i>Brazilian Archives of Biology and Technology</i> . http://dx.doi.org/10.1590/1678-4324-2017160492
21.	Development of Intraspecific Hybridization of <i>Pleurotus flabellatus</i> for Better Yield and Nutrition.	Baral, D., Roy, A., Thapa, S. and Bhutia, K.C.	<i>International Journal of Current Microbiology and Applied Sciences</i> . 6(11): 735-742.

22.	Host Infection beyond the Traditional Range of <i>Sclerotium</i> (Athelia) <i>rolfsii</i> with <i>Physalis minima</i> .	Hembram, S.	<i>Bioinformation</i> , 13(10): 333-338
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Technical Bulletin

1.	Fact Sheet, India-Morocco Food Legumes Initiative on Increasing Food Legumes Production by Small Farmers to Strengthen Food and Nutrition Security	Chowdhury, A.K.
2.	Fact Sheet, OCPF and ICARDA on Increasing Food Legumes Production by Small Farmers to Strengthen Food and Nutrition Security.	Chowdhury, A.K.
3.	Fact Sheet, SRFSI, West Bengal.	Chowdhury, A.K.

Book Chapter

1.	Holistic management of foliar blight disease of wheat and Barley	Chowdhury, A.K., Bhattacharya, P.M., Bandyopadhyay, S. and Dhar, T.	<i>Management of Wheat and Barley Diseases</i> Edited by DP Singh, Apple Academic Press, pp. 83-114.
2.	Macrophomina jonito Pradhan rog o tar pratikar	S. Das	Sasya Surakha, AAPP, Kalyani
3.	Biological control in 21 st century: Opportunities and challenges in subsistence farming system of India	A.K. Chowdhury, Anamika Debnath, A. Roy, P.M. Bhattacharya and C. Chattopadhyay	Microbial Antagonists: Their role in biological control of plant diseases . (Editors : Drs. R.N. Pandey, B.N. Chakraborty, Dinesh Singh and Pratibha Sharma) Today & Tomorrow's Printers and Publishers, New Delhi – 110 002, India, pp. 37-63
4.	Recent approaches for detection and management of diseases of Wheat.	Chowdhury, A.K., Bhattacharya, P.M. and Chattopadhyay, C.	Recent Approaches for Management of Plant Diseases <i>Editors: Srikanta Das, Subrata Dutta, B.N. Chakraborty and Dinesh Singh</i> Indian Phytopathological Society ISBN: 81-7019-599-X (India), 1-55528-443-4 (USA), pp 53-78
5.	Future Smart Food, West Bengal	Chowdhury, A.K.	Future Smart Food- Rediscovering hidden treasures of neglected and underutilized species for zero hunger in Asia, Food

			and Agriculture Organization in United Nations, (Eds. Li,X and Siddique,KHM). Bangkok, Thailand, p 242
6.	Microbial inoculants in organic vegetable production: Current Perspective.	Chatterjee, R., Roy, A. and Thirumdasu, R.K.	Zaidi, A. and Khan, M.S. (eds). Microbial Strategies for Vegetable Production. Springer International Publishing DOI 10.1007/978-3-319-54401-4_1.
Book- NIL			

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.	International Conference on “Contemporary Issues in Integrating Climate-The Emerging Area of Agriculture, Horticulture, Biodiversity, Forestry; Engineering Technology, Applied Science and Business Management for Sustainable Development (AGROTECH-2017)”	Dr. S. Bandyopadhyay and Dr. A. Debnath	11-12 May, 2017	Kalimpong Science Centre, Kalimpong, West Bengal, India	Attended
2.	Short Course on “Preparation of bio-formulation of fungal and bacterial bio-control agents for management of biotic stress of agricultural crops	Dr. S. Bandyopadhyay	1-10 September, 2017	Assam Agricultural University, Jorhat	Attended
3.	Summer school on “Organic Farming and Conservation Agriculture for Sustainable Management of Natural Resources, Environment, Energy and Livelihood Security”	Dr. S. Khalko and Mrs. S. Das	5 th to 25 th August, 2017	College of Post graduate Studies,(CAU-Imphal), Umiam, Meghalaya	Attended
4.	Workshop on preparedness on Occurrence of Blast Disease on Wheat	Prof. A. K. Chowdhury	7 th Sept, 2017	Kolkata	Attended
5.	Review meeting of SRFSI	Prof. A. K.	11-13 Sept,	Rangpur	Attended

	Project	Chowdhury	2017	Bangladesh	
6.	Workshop on wheat blast	Prof. A. K. Chowdhury	July 13-14, 2017	Dhaka, Bangladesh	Attended
7.	Annual Dialogue of SDIP, DFAT, Australia	Prof. A. K. Chowdhury	7-9 September, 2017	Kathmandu, Nepal	Attended
8.	5 th Regional Coordination meeting of ICARDA- South Asia and China Regional Program on Strategic Partnership towards enhancing food and nutritional security in South Asia and China,	Prof. A. K. Chowdhury	5-8 Dec, 2017	NASC Complex, New Delhi	Attended
9.	Mid term Review Workshop of SRFSI Project	Prof. A. K. Chowdhury	Feb 12-16, 2018	Malbazar, Jalpaiguri	Attended
10.	National Symposium on Plant Health Management: Embracing Eco-Sustainable Paradigm	Prof. A. Roy	February 15-17, 2018	Assam Agricultural University, Jorhat	Attended
11.	Climate Change and Agriculture Production Conference 2017	Prof. P. M. Bhattacharya	April 6-8, 2017	BAU-Sabour, Bihar	Attended
12.	Regional Dialogue on Agricultural Mechanization in South Asia	Prof. P. M. Bhattacharya	July 20-21, 2017	New Delhi, India organized by IFPRI	Attended
13.	Post Flood Monitoring meeting	Dr. S. Bandyopadhyay	21.08.2017	Satmile, Coochbehar	Attended
14.	National Symposium on “Challenges and perspective in plant health management under climate change scenario”	Dr. S. Hembram	23-24 November, 2017	BCKV, Mohanpur, Nadia	Attended
15.	XXVIII AICRP on spices annual workshop	Dr. A. Debnath	10-12 October, 2017	Dr. Y.S.R Horticultural University, at Lam, Guntur, Andhra Pradesh	Attended
16.	Skill development training on Vermicompost Producers	Dr. S. Bandyopadhyay	2 February- 2 March, 18	UBKV, Pundibari	Organized

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

a. For Project Related matter:

1. Ms. Harinder Sidhu, High Commissioner, Australia
2. Dr. Kuhu Chatterjee, Regional Manager, ACIAR, New Delhi
3. Dr. M.Gathala, Cropping System Agronomist, CIMMYT, Iran

4. Dr. Robert Spooner Hart, Associate Professor, Western Sydney University, Australia

b. For Academic purpose:

1. Prof. Ramesh Chand, Department of Mycology & Plant Pathology, BHU
2. Dr. SurjaSarkar, Principal Scientist, CRIJAF-ICAR, Barrackpore, W.B.
3. Prof. G. Mandal, Department of Plant Pathology, BCKV, Mohanpur, Nadia, W.B.
4. Dr. RanjanNath, Associate Professor, Division of Crop Protection, Pally Siksha Bhavan, Visva Bharati, Santiniketan, W.B.

M. Faculty Council Members from the Department

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

N. 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, Dr. A. Debnath, Miss Srma Das
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
The Agriculture Society of India	Dr. S. Bandyopadhyay
Crop and weed science society	Dr. S. Khalko

O. 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

P. Abroad visit by faculties of the Department

Prof. A. K. Chowdhury

- Workshop on wheat blast during July 13-14, 2017 at Dhaka, Bangladesh
- Annual Dialogue of SDIP, DFAT, Australia during 7-9 September, 2017 at Kathmandu, Nepal

- Review meeting of SRFSI Project during 11-13 September, 2017 at Rangpur, Bangladesh

Q. Recognition:

- Prof. A. K. Chowdhury: Task Force Member (Societal and Women), Department of Biotechnology, Ministry of Science and Technology, GOI (2017-2019)
- Prof. A.K. Chowdhury, Member, Board of Studies, Palli Siksha Bhavan, Visva Bharati
- KPV Menon Best poster award by Dr. Joyoshree Mahanta, Prof. P.M. Bhattacharya and Prof. A. Roy in the 70th Annual Meeting of Indian Phytopathological Society at AAU Jorhat, Assam during 15-17th February, 2018.

R. Departmental Committee Meeting held: 6 (15.05.2017, 20.07.2017, 31.08.2017, 21.11.2017, 29.01.2018, 06.02.2018)

R. Research activities by PG students (continuing)

Name of the student	Research problem	Name of the Chairman, Advisory Committee
Ph.D. in Plant Pathology		
Avishak Thapa	Resistance of wheat against spot blotch disease and terminal heat stress in North Bengal	Prof. 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 Ranjana Devi	Impacts of conservation agriculture on major diseases of rice and wheat under rice wheat cropping system	Dr. S. Ali (Kalimpong RRS)
S Jasudasu Gomba	Evaluation of important fungal diseases of lentil under Terai Zone of West Bengal	Prof. B.R. Sharma (Kalimpong RRS)
Nibedita Chattopadhyay	Characterization of important foliar disease of wheat in Eastern Gangetic plains and factors of disease development.	Prof. A. Roy
Sushmita Jha	Variation of rice blast pathogen in Northern parts of West Bengal and its integrated management	Dr. S. Bandyopadhyay
M.Sc. (Ag.) in Plant Pathology		
Sinija K. Das	Variation of <i>Bipolaris sorokiniana</i> , the causal agent of spot blotch of wheat with special reference to toxin production	Prof. A. K. Chowdhury
P. Asha Devi	Elucidation of defence responses in wheat against <i>Bipolaris sorokiniana</i> Shoe Maker by using non conventional chemicals	Prof. P. M. Bhattacharya
Aparajita Dhar	Qualitative and quantitative evaluation of some mushroom hybrids of <i>Pleurotus</i> sp.	Dr. S. Bandyopadhyay
Pulak Bhaumik	Evaluation of lentil genotypes against major diseases in North Bengal	Dr. S. Khalko

Name of the student	Research problem	Name of the Chairman, Advisory Committee
Abhijit Nandi	Phenotyping of wheat germplasms in relation to spot blotch resistance	Prof. P.M. Bhattacharya
Manish Agarwal	Characterization of <i>Trichoderma</i> isolates in relation to their field performance	Prof. A. Roy
Rima Rai	Effect of micro-climate on spot blotch disease of wheat	Dr. S. Hembram
Wangmathing, R.	Strategies for improvement in cultivation practices of oyster mushroom in North Bengal	Prof. A.K. Chowdhury
Somesa Ghosh	Characterization and evaluation of antagonistic potential of Fluorescent pseudomonas in northern plains of West Bengal	Dr. A. Debnath



Some Activities of the Department