Department of Genetics and Plant Breeding



Annual Report 2017-18

Uttar Banga Krishi Viswavidyalaya Pundibari, Cooch Behar, West Bengal-736165

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Annual Report, 2017-18

Department of Genetics and Plant Breeding at a glance

A. Background: Opening of Department /UG/PG courses (Genesis) :

The newly born University (Uttar Banga Krishi Viswavidyalaya) was initially known as the North Bengal Campus of Bidhan Chandra Krishi Viswavidyalaya at the Gram Sevok Training Centre (GSTC), Coochbehar from 1979 to 1989. During that period the department of Genetics and Plant Breeding was established as a founder department and in 2001, the campus was upgraded as the full fledged university by an act of assembly of the Government of West Bengal and the department as such was recognized as one of the nine departments under faculty of agriculture.

B. Functions: Teaching /Research/ Extension if any





- To impart teaching in the discipline of Genetics and Plant Breeding and other allied disciplines for awarding B.Sc(Ag.), M.Sc.(Ag.) and Ph.D.(Ag.) degree in the discipline of Genetics and Plant Breeding.
- To undertake research activities in the areas of Genetics and Plant Breeding and allied areas
- To undertake interdepartmental and inter institutional project works in areas of plant sciences relevant to the field of Genetics and Plant Breeding.
- To set programme and to participate in the process of validation of research output in the field situation.

C. Teaching:

The faculty members of the department are engaged in teaching at undergraduate and post graduate level under the semester system. In order to equip the students with the quality information and sound knowledge of the subjects of genetics and plant breeding, the faculty members leave no stone unturned to fulfill the stated objectives.

a) Field of specialization for M.Sc. and Ph.D.:

Masters' Degree Programme

- i) Major Field : Plant Breeding and Genetics
- ii) Minor Field: Seed Science and Technology / Biochemistry

Doctoral Degree Programme

- i) Major Field : Plant Breeding and Genetics
- ii) Minor Field: Seed Science and Technology /Biochemistry

b) Undergraduate courses:

• As per 4th Dean's Committee Syllabus i) Compulsory courses:

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	GPB- 151	Principles of Genetics and	2+1	Second
		Cytogenetics		
2.	GPB- 201	Principles of Plant	2+1	Third
		Breeding		
3.	GPB- 251	Breeding of Field/	2+1	Fourth
		Horticulture Crops		
4.	GPB- 301	Principles of Plant	1+1	Fifth
		Biotechnology		

ii) Elective courses:

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	GPB- 401	Molecular Breeding	1+2	Seventh
2.	GPB- 402	Plant Tissue Culture	1+3	Do
3.	GPB- 403	Recombinant DNA	1+2	Do
		Technology		
4.	GPB- 404	Bioinformatics	1+2	Do
5.	GPB- 405	Microbial and	1+3	Do
		Environmental Technology		
6.	GPB- 406	Molecular Diagnostics	1+2	Do

• As per 5th Dean's Committee Syllabus

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	GPB101	Fundamental of Genetics	3(2+1)	1 st
2.	GPB 151	Fundamentals of Plant	3(2+1)	2 nd
		Breeding		
3.	GPB 201	Fundamentals of Plant	3(2+1)	3 rd
		Biotechnology		
4.	GPB 301	Crop Improvement –I	2(1+1)	5 th
		(Kharif Crops)		
5.	GPB 351	Crop Improvement- II	2(1+1)	6 th
		(Rabi Crops)		

i) Compulsory courses:

ii) Elective courses:

Sl. No.	Course No.	Title	Credit Hours	Semester
1.	ELC- 303	Micro- propagation	3(2+1)	5 th
		Technologies		
2.	ELC-351	Commercial Plant	3(2+1)	6 th
		Breeding		

d) Post graduate courses:

Sl. No.	Course No.	Title	Credit Hours	Semester
		Masters' Degree	•	
1.	GPB- 501	Principles of Genetics	2+1	1 st
2.	GPB- 502	Principles of Cytogenetics	2+`1	1 st
3.	GPB- 503	Principles of Plant Breeding	2+`1	1 st
4.	GPB- 504	Principles of Quantitative	2+`1	1 st
		Genetics		
5.	GPB- 505	Mutagenesis and Mutation	2+`1	3 rd
		Breeding		
6.	GPB- 506	Population Genetics	2+`1	2 nd
7.	GPB- 507	Heterosis Breeding	2+`1	2 nd
8.	GPB- 508	Cell Biology and Molecular	2+`1	2 nd
		Genetics		
9.	GPB- 509	Biotechnology for Crop	2+`1	2 nd
		Improvement		
10.	GPB- 510	Breeding for Biotic and	2+`1	3 rd
		Abiotic Stress Resistance		

Sl. No.	Course No.	Title	Credit Hours	Semester
11.	GPB- 511	Breeding Cereals , Forages	2+`1	2 nd
		and Sugarcane		
12.	GPB- 512	Breeding Legumes , Oilseeds	3 rd	
		and Fibre Crops		
13.	GPB – 513	Breeding for Quality Traits	2+`1	4 th
14.	GPB – 514	Gene Regulation and	2+`0	3 rd
		Expression		
15.	GPB – 515	Maintenance Breeding,	1+1	4 th
		Concepts of Variety Release		
		and Seed Production		
16.	GPB - 516	Germplasm Collection,	2+`1	3 rd
		Exchange And Quarantine		
17.	GPB – 517	Database Management,	2+`1	4 th
		Evaluation and Utilization of		
		PGR		
18.	GPB – 591	Masters' Seminar	1+0	4 th
19.	GPB – 599	Masters' Research	20	4 th
	1	Doctoral Degree	l	I
1.	GPB - 601	Plant Genetic resources and	2+`0	1 st
		their Utilization		
2.	GPB - 602	Advances in Quantitative 2+`1		1 st
		Genetics		
3.	GPB - 603	Genomics in Crop 2+`1		1 st
		Improvement		
4.	GPB - 604	Cellular and Chromosomal	2+`0	2 nd
		Manipulations in Crop		
		Improvement		
5.	GPB – 605	Advances in Plant Breeding	2+`0	2 nd
6.	GPB - 606	Crop Evolution	2+`0	3 rd
7.	GPB- 607	Breeding Designer Crops	2+`1	3 rd
8.	GPB - 608	Advances in Breeding of	3+`0	4 th
		Major Field Crops		
9.	GPB – 609	Microbial Genetics	2+`1	4 th
10.	GPB - 610	In situ and Ex situ	2+`1	5 th
		Conservation of Germplasms		
11.	GPB – 691	Doctoral Seminar I	1+0	2 nd
12.	GPB – 692	Doctoral Seminar II	1+0	6 th
13.	GPB - 699	Doctoral Research	0+45	6 th

e) Post graduate requirement:

i) For M.Sc.(Ag) Degree: B.Sc (Ag.) Hons. /B.Sc.(Hort.) Hons.

ii) For Ph.D. Degree: M.Sc.(Ag) in Genetics and/or Plant Breeding /M.Sc.(Ag.) in Seed Science and Technology

iii) Students' Achievement:

JRF: 07	SRF: Nil	NET: Nil	JNU-CEEB: 08

v) Students' Placement:

Govt: Nil Coorporate: Nil Bank: Nil NGO: Nil

D. Research Activity:

a) Areas of research:

The faculty members are actively involved in various research programme sponsored by different funding agencies. Given the location of the university in the *Terai* region of West Bengal, the research activities are primarily directed to sort out the available problems of agriculture in this region and also based on anticipatory approaches the research are enumerated below.

- Collection, evaluation and screening of mungbean and cowpea genotypes against biotic and abiotic factors.
- Collection, evaluation and screening of brinjal genotypes against bacterial wilt and fruit and shoot borer in eastern India.
- Quality seed production in pulses (lentil, black gram and mungbean).
- Collection, evaluation and maintenance of germplasms of crops including aromatic rice, wheat, mustard, jute and allied fibres, pegion pea, spices(ginger and turmeric), mung bean, brinjal and urd bean
- Collection, characterization of ginger germplasm
 - i. Collection of different ginger genotypes/ accessions from different regions of West Bengal and India in order to make a broad genetic base in the field gene bank in UBKV.
 - ii. Collection of 71 genotypes/ accessions of ginger were maintained.
 - iii. 63 genotypes/ accessions were assigned IC numbers from NBPGR
- Collection, characterization of turmeric genotype/ accession.
 - i. Collection of different turmeric genotypes/ accessions from different regions of West Bengal and India in order to make a broad genetic base in the field gene bank in UBKV.

- ii. Collection of 216 genotypes/ accessions of turmeric were maintained.
- iii. 212 genotypes/ accession were assigned IC number from NBPGR including wild relatives of turmeric like blue turmeric and mango ginger
- CVT trail on ginger: Ginger variety GCP- 49 (IC- 0614552) (MOHINI) developed and released for national released throughout the country in 27th workshop held in NRCSS Rajasthan.

(http://egazette.nic.in/WriteReadData/2018/182038.pdf)

- CVT trail on turmeric
- Screening of maize genotypes under different moisture regime
- Studying Rhizobium-legume interaction in the soils of terai region
- Developing suitable in-vitro regeneration protocol in medicinal plants
- Objective oriented in-vitro studies in other crops like rice, pulses etc.
- Developing lines and characterization of endangered medicinal plants
- Quality seed production in crops like rice, maize, pulses, mustard, ginger and turmeric etc.
- Seed multiplication of released national ginger variety 'Mohini' (UBKV AADA-I)
- Seed multiplication of Uttarrupanjana (UBKV TURMERIC-2).
- Seed multiplication of local variety Suranjana.
- Development of different lines of high quality ginger and turmeric.
 - i. Development of leaf spot and leaf blotch disease resistance lines of turmeric.
 - ii. Development of high quality ginger lines with high dry matter percentage for high market value
 - iii. Development of high quality turmeric lines with high curcumin percentage for high market value.
 - iv. Development of rhizome tolerant lines in ginger.
 - v. Development of high essential oil and olerisin content ginger lines.
 - vi. Conservation of ginger and turmeric lines with registration of important traits for protection in NBPGR and PPVR&FR and creation of large germplasm base in terai region of West Bengal.
 - vii. Seed multiplication of popular and released varieties.
- Entries for varietal trial have been given for All India Wheat & Barley Improvement

Programme (AICW&BIP)

	Year	Trial name
2016,2017 Survey & surveillance was undertaken against the spread of wheat blast disease across the Bangladesh border areas	2016,2017	Survey & surveillance was undertaken against the spread of wheat blast disease across the Bangladesh border areas

- a) Research reports submitted : Nil
- **b)** Awards and gold medals : Nil

- c) Scholarships, stipends and fellowships: Doctoral degree students awarded Rajib Gandhi National Fellowship for ST candidates and INSPIRE Fellowship of the Govt. of India.
 - (i) Miss Aparajita Das (Reg. No. A-2015-1-D) was awarded the Rajiv Gandhi National Fellowship for SC
- d) Ongoing research projects :
 - "Collection, characterization, in-situ and ex-situ conservation of rice of North-Eastern India including the areas under jurisdiction of the University" – Dr. S.K. Roy, Co-Principal Investigator
 - ICARDA-GoWB Project on 'Enhancing Pulse Production for Food and Nutritional Security, Improved Livelihoods and Sustainable Agriculture in West Bengal" funded by Department of Agriculture, Government of West Bengal (Dr. A.Sarkar, Co-Principal Investigator)
 - "Creation of Seed Hubs for increasing indigenous production of Pulses in India" under **NFSM** to be implemented by ICAR-IIPR, Kanpur being the Nodal Agency (**Dr. Arup Sarkar, Nodal Officer**).
 - "A study on exploration, characterization and conservation of brinjal (Solanum melongena L.) germplasm in Eastern India" (Institutional Project / Dr. Arup Sarkar, Principal Investigator).
 - "AICRP –Vegetable Crop (Volunteer Centre)" (**Dr. Lakshmi Hijam**, Associated Scientist)
 - "A study on exploration, characterization and conservation of brinjal (Solanum melongena L.) germplasm in Eastern India" (Institutional Project / Dr. Arup Sarkar, Principal Investigator, Dr. Lakshmi Hijam - Co-Principal Investigator, Dr. Hossian Ali Mondal, Co-Principal Investigator).
 - "Central Germplasm Conservation Unit"- (Dr. Lakshmi Hijam, Associated Scientist)
 - "Generation of elite, disease free planting material of turmeric through micropropagation and its distribution among tribal farmers of terrain plain of West Bengal" (Department of Science and Technology, DST, Govt. of India/ Co-Principal Investigator, Dr. Moumita Chakraborty)

- "Seed potato (minituber) production and commercialization in northern plains of West Bengal" (Rashtriya Krishi Vikas Yojana, RKVY/ Co-Principal Investigator, Dr. Moumita Chakraborty)
- "Studies on bioefficacy and phytotoxicity of homobrassinoloate (0.04%) in tea and rice" (M/S Godrej Agrovet limited/ Co-Principal Investigator, Dr. Moumita Chakraborty)
- "Associated with Plant Tissue Culture Unit"- Co-Principal Investigator, Dr. Moumita Chakraborty
- "Associated with Germplasm Conservation Unit". Co-Principal Investigator, Dr. Moumita Chakraborty
- "Production of quality planting materials of some important medicinal plants through identification, multiplication, supply of health elite genotypes and capacity building programme for improving rural livelihood in Northern part of West Bengal". (Ministry of Ayurveda, Govt. of India / Co-Principal Investigator, Dr. Hossian Ali Mondal)
- Collection, Conservation, Digitization and Standardization of protocol for Mass Regeneration of selected endangered, rate and vulnerable medicinal plants of North East Region. (Ministry of Ayurveda, Govt. of India/ Co-Principal Investigator, Dr. Hossian Ali Mondal)
- "Dissecting the 'interactome' developed at sieve element due to aphid infestation for better understanding of enhanced insecticidal effect in resistant host plant" (Science and Engineering Research Board, DST, Govt. of India/ Dr. Hossian Ali Mondal, Principal Investigator)
- "Quality Parameter Testing of the Acclimatized Valeriana jatamansi in Terai Zone W.B. and Mass propagation of Valeriana jatamansi, Bergenia ciliate and Piper longum for Distribution with Awareness Programme" (Ministry of Ayurveda, Govt. of India/ Dr. Hossain Ali Mondal, Principal Investigator)
- "Survey of Pests and Diseases of Medicinal Plants in West Bengal" (NMPB, Ministry of AYUSH/Dr. Rupsanathan Mandal, Co principle Investigator)
- "Development of DUS standards using morphometrics and molecular markersin local cultivars of potato collected from different district of West Bengal" (W.B., State Govt. contingency Fund/ Dr. Rupsanathan Mandal, Principal Investigator)
- "Central Germplasm Conservation Unit" (W.B., State Govt. contingency Fund/ Dr. Rupsanathan Mandal, In-Charge)

- "Survey and surveillance for wheat blast caused by *Magnaporthe oryzae* pathotype *Triticum* and strategic research to manage it" (Ministry of Agriculture, Govt. of India/ Dr. Saikat Das, Co principle Investigator)
- "Promotion of oilseed crops in Northern Districts of West Bengal for livelihood security of small and marginal farmers"(NMOOP/ Dr. Suvendu Kumar Roy, Co Principle Investigator)
- "Exploration of the soil microbial diversity of different agro-ecological zones on North Bengal for agricultural use" (Dr. Avijit Kundu, Co-principal Investigator, Year of commencement: 2016)
- "Development of DUS standards using morpho-metrics and molecular markers in local cultivars of potato collected from different districts of West Bengal" (Dr. Avijit Kundu, Co-principal Investigator, Year of commencement: 2016)
- "AINP on Jute and Allied Fibres" -Dr. AVIJIT KUNDU (Associated Scientist/Plant Breeder)
- "Seed potato (minituber) production and commercialization in northern plains of West Bengal" (RKVY, Govt. of India/ Dr. Avijit Kundu, Principal Investigator, Year of commencement: 2017)

E. Extension activities:

The faculty members are engaged in Seed Village programme, Farmers' Training programme and Participatory Seed Production programme under various ongoing research and extension activities.

- 1. Dr. Arup Sarkar
 - Involved as Nodal Officer in the Participatory Seed production programme in the North Bengal districts under Seed Hub Project.
- 2. Dr. Suvendu Kumar Roy
 - Involved as Co-PI in the project "National Mission on Oilseed and Oil Palm" Govt. of India to popularize the new promising varieties of Mustard and Ground Nut in the North Bengal districts of West Bengal.

F. Infrastructural and Support Facilities available:

- Post Graduate Lecture Hall For class room teaching of elective and post graduate courses
- Post Graduate Laboratory For practical oriented training in post graduate level and for other research support activities.
- **Biochemical and Biotechnology Laboratory** For providing analytical facilities in biochemical and biotechnological studies.

G. Faculty and staffs:

- a) Head of the Department : Dr. Suvendu Kumar Roy, M.Sc.(Ag.), Ph.D., Professor
- b) Faculty

SI. No	Name	Designati on	Specializati on	Contact address
1.	Dr. Suvendu Kumar Roy	Professor and Head	Genetics and Plant Breeding	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email:suvendukumarroy@gma il.com M : 9434872338
2.	Dr. Arup Sarkar	Professor	Genetics and Plant Breeding	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: arup_skr@rediffmail.com M: 9474016823
3.	Dr. Soumendra Chakraborty	Assistant Professor	Genetics and Plant Breeding	Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: soumendra1@gmail.com M : 9474092958

4.	Dr. Lakshmi Hijam		Assistant Professor	Genetics and Plant Breeding	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: lakshmihij52@gmail.com M: 9163713059
5.	Dr. Moumita Chakraborty		Assistant Professor	Genetics and Plant Breeding	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: moumitabckv@gmail.com M: 8900316030
	Regio	nal Research S	station (Terai	Zone)	
6.	Dr. Hossian Ali Mondal		Assistant Professor	Genetics and Plant Breeding	Regional Research Station (Terai Zone), Directorate of Research, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: hossainalimondal@gmail.com M: 8640098606
7.	Dr. Rupsanatan Mandal		Assistant Professor	Genetics and Plant Breeding	Regional Research Station (Terai Zone), Directorate of Research, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: rup.bitech@gmail.com M: 8697668107
		<u>RP</u>	.		
8.	Dr. Saikat Das		Assistant Professor (Sr. Scale)	Plant Breeding	AIC W & BIP, Directorate of Research, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: saikat.ubkv@gmail.com M: 7001766745
9.	Dr. Avijit Kundu		Assistant Professor	Genetics and Plant Breeding	AINP on Jute & Allied Fibres, Directorate of Research, UBKV, Pundibari, Coochbehar, West Bengal – 736165 Email: kundu.avijit78@gmail.com M: 9433678323

c) Non teaching staffs

Sl.No.	Name	Designation	Contact address
1.	Sri Subir Kr. Das	Technical Assistant , GrI	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165
2.	Sri Supriya Chakraborty	Technical Assistant GrI	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165
3.	Sri Gouranga Chandra Dey	Laboratory Attendant	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165
4.	Sri Sourav Bhowmick	Junior Laboratory Attendant	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165
5.	Mrs. Namita Das	Junior Peon	Department of Genetics and Plant Breeding, UBKV, Pundibari, Coochbehar, West Bengal – 736165

H. Doctoral Degree thesis completed

Sl.No.	Title	Year	Author	Chairman
	Screening of farmers varieties of rice	2017	Mr. Swarnajit	Dr. Bidhan Roy
	(Oryza sativa L.) for drought tolerance		Debbarma	

I. Master Degree thesis completed

Sl.No.	Title	Year	Author	Chairman
1.	Genotypic response to special aphid		Mr. Siddhartha	Dr. H. A.
	colony distribution in cowpea (Vigna		Shankar Sharma	Mondal
	unguiculata L. Walp) vine study the			
	resistance mechanism			
2.	Study of diurnal photosynthesis, water	2017	Mr. Sourav Hazari	Dr. S. Das
	use efficiency and light use efficiency of			
	wheat under Terai Agroecological			
	condition			

J. Paper & Books published

Sl.No.	Title	Author	Journal	Year
Paper	(Research and Extension)	·	
1.	Stability of parents and their F1 population of	Kale, V.A. and Roy, S.K.	Electronic Journal of Plant Breeding, 8(1):216-225	2017
	tossa jute under different environments.			
2.	Differential aphid colony establishment in <i>Dolichos lablab</i> varieties correlated with some plant specific factors that impact on aphid.	Mondal, H. A., Roy, S. K. , Hijam, L., Chakraborty, M., Dutta, P. and Hath, T. K.	American Journal of Plant Sciences, 8:754-769	2017
3.	Genetic variability and character association in rice (<i>Oryza sativa</i> L.) over different seasons	Roy, S. K., Sarkar, K. K. and Senapati, B. K.	Journal of Agriculture and Technology, 4 (1): 23-30	2017
4	Performance of flax genotypes with respect to infestation of capsule borer, <i>Helicoverpa</i>	Roy, S. K., Pal, S., Ghimiray, T. S. and Roy, A.	Journal of Entomology and Zoology Studies, 5 (5): 276- 280.	2017

	<i>armigera</i> (Hubner) and other yield parameters in the hills of Darjeeling, India			
5	Variability comparison of mustard crosses in advanced segregating generations	Roy, S. K., Chakraborty, M., Hijam, L., Mondal, H. A., Mandal, R., Kundu, A., Kale, V. A., Ashokappa, N. V., Sur, B. and Dash, S. K.	International Journal of Pure and Applied Bioscience, 5 (6): 948-956.	2017
6.	Evaluation of genetic variability and characterization of some elite turmeric genotypes in <i>terai</i> region in India	Bikash Chandra Deb and Soumendra Chakraborty	ndra International Journal of Current Microbiology and ty Appiled Sciences. Vol 6(5) pp.2357-2366.	
7.	Effect of different micronutrients on turmeric variety Suranjana in <i>terai</i> region of West Bengal, India.	S. Datta, S. Chakraborty, J.C. Jana, A. Debnath, M.K. Roy and S. Haque.	International Journal of Current Microbiology and Appiled Sciences. Vol. 6(5). pp. 1471-1482.	2017
8.	Evaluation of some turmeric genotypes in <i>terai</i> region of West Bengal.	S. Chakraborty, S. Dutta, A. Debnath, S. Bandopadhya, M.K. Roy and S. Haque	International Journal of Science, Environment and Technology. Volume 6, Issue 2	2017
9.	Inheritance and association of yield and its attributing traits in rice (<i>Oryza sativa</i>)	Lakshmi Hijam, K.K. Sarkar and S. Mukherjee	Journal of Crop and Weed: 13(1): 64-71	2017
10.	A review on potato (Solanum tuberosum l.) and its genetic diversity	ReddyB.J.,MandalR.,ChakrabortyM.,HijamL.andDutta P.	Int. J. Pure App. Biosci. 5 (6): 948-956 (2017)	2017
11.	Arabidopsis ACTIN- DEPOLYMERIZING FACTOR3 is required for controlling aphid	HossainA.Mondal,JoeLousis,LaniArcher,Monika	Plant Physiology, 176:(879- 890)	2018

12.	feeding from the phloem Shaping the understanding of Saliva- derived effectors towards aphid	Patel,VamsiJ.Nalam,SujonSarowar,VishalaSivapalan,DouglasD.DouglasD.Rootand JyotiShahHossainA.Mondal,	Journal of Plant Biotechnology, 60:103-115	2017
	colony proliferation in host plant			
13.	Evaluation the potentiality of some parameters to probe the elevated levels of resistance in <i>Brassica</i> sp. at early period of aphid infestation in open field condition	Siddharth Shankar Sharma, Bablu Paul, Pratik Saha, Shyamal Kumar Sahoo, Kashinath Mandal, Tapan Kumar Hath and Hossain Ali Mondal	Journal of Entomology and Zoology Studies, 5(6): 1256- 1364	2017
14.	Unlocking genetic diversity in selected chickpea genotypes using morphological and molecular markers.	Mandal R ., Pal S., and Shit N.	Current Agriculture Research Journal, 5(1), 50-57	2017
15.	Effect of physical characteristics and phenolic contents on jassid and pod borer of cowpea.	Satpathi K S., Pal S., Gurung B., Data S., Kundu A., Mandal R ., Lascar N., Kheroar S.	University of sindh journal of animal sciences 1(1):8-13	2017
16.	An evolutionary analysis of rice tungro bacilliform virus collected from Odisha, India	Chattopadhyay N., Mandal R and Tarafdar J	Journal of mycologypathology research. 55(3) 243-249	2017
17.	Studies on metabolic hormones, sex steroids and mrna expression of caspase 2 bcl-xl gene in ovarian follicles of japanese quil hens during stress.	Shit., N., Sastry Kvh., Singh G., Mandal R ., and Mohan J.	Indian journal of poultry science. 52(1): 70-75	2017
18.	Variability comparison of mustard crosses in advanced segregating generations.	Roy S.K., Chakraborty M., Hijam L., Mandal H.A., Mandal .,	International journal of pure applied biosciences: 5(6): 948- 956	2017

19.	Species diversity and	Mandal R., Kale V.A., Ashokappa N.V., Sur B. and Dash S.K Pal S., Mandal R. ,	Brazilian archives of biology	2017
	community structure of arthropod pests and predators in flax from Darjeeling (India).	Sarkar S.	and biotechnology. 60	
20.	Probable location identification of inserted tungro resistant gene in rice cultivar.	Chattopadhyay N., Mandal R and Tarafdar J.	Annunls of plant protection science: 25(2): 324-329	2017
21.	Evaluation of barley (<i>Hordeum vulgare</i> L.) cultivars under different dates of sowing in Terai zone of West Bengal.	K. Priya Devi, Mitra B., Paul T., Das S ., Singha Roy S. and Singha Roy A. K	Journal of Crop and Weed. 14(1): 185-187.	2018.
22.	Precision nutrient management in wheat (<i>Triticum aestivum</i>) using Nutrient Expert®: Growth phenology, yield, nitrogen-use efficiency and profitability under eastern sub-Himalayan plains.	Mondal T, Mitra B and Das S .	Indian Journal of Agronomy. 63 (2): 174-180.	2018
23.	The draft genome of <i>Corchorus olitorius</i> cv. JRO-524 (Navin), 151- 154. In	Sarkar D, Mahato AK, Satya P, Kundu A , Singh S, Jayaswal PK, Singh A, Bahadur K, Pattnaik S, Singh N, Chakraborty A, Mandal NA, das D, Basu T, Sevanthi AM, Saha D, Datta S, Kar CS, Mitra J, Datta K, Karmakar PG, Sharma TR, Mohapatra T, Singh NK	Genomics Data; DOI: 10.1016/j.gdata.2017.05.007	2017

24.	Status of zinc fractions	Gogoi S, Banik	Current Science 113 (6): 1173-	2017
	in soils of Cooch Behar	GC, Kundu A,	1178; DOI:	
	district, West Bengal	Mukhopadhyay S,	10.18520/cs/v113/i06/1167-	
		Mukhopadhyay D	1173	

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

Sl.No	Seminar, Symposium,	Faculty	Date	Venue	Attended/
•	Conference, I raining	associated			Organised
	anu Winter/Summer/Refres				
	her course/short course				
1.	12 th National Symposium on Biotic Stress Management Strategies:	Dr. Suvendu Kumar Roy	2017	UBKV, Cooch Behar	Attended
	Environmental Harmonization				
3.	"Technology transfer of Spices in West Bengal"	Dr. Soumendra Chakraborty	21-22 February, 2017	FACC (Lake Hall) BCKV	Attended
4.	International Conference :Contemporary Issues in Integrating Climate-The Emerging Areas of Agriculture, Horticulture, Biodiversity, Forestry; Engineering Technology, Fundamental/Applied Science and Business Management for Sustainable Development (AGROTECH-2017	Dr. Lakshmi Hijam	11-12 May,	Kalimpong Science Centre, Kalimpong, West Bengal, India	Attended
4.	1 st FARM INNOVATION CONGRESS, 2018 and National Conference on "INNOVATIVE Farming For Food And Livelihood Security In Changing Climate" Organized by "Innovative Farming & Society for Advancement of Agricultural	Dr. Lakshmi Hijam	12-13 th January,	FACC, BCKV, Kalyani, West Bengal	Attended

	Innovations (SAAI)"				
5.	Participated in two days workshop organised by International Rice Research Institute through Transformative Rice Breeding Programme at ICRISAT,	Dr. Lakshmi Hijam	Hyderabad 26-27 th October 2017	Patancheru, ICRISAT	Attended
6.	Innovative farming for Food and Livelihood Security in Change Climate	Dr. Moumita Chakraborty	11-12 January, 2018	Lake Hall,Kalyani	Attended
7.	Micropropagation techniques and physiological, biochemical & molecular interventions for sustained plant production under climate change scenario"	Dr. Moumita Chakraborty	2017.	BHU, Varanasi.	Attended
8.	Modulation of Effector gene expression for reducing the compatibility with susceptible host plant for next generation aphid control strategy" in the national symposium on Biotic Stress Management strategy: Challenges and environmental harmonization	Dr. Hossain Ali Mondal	17-19 th February, 2017	Uttar Banga Krishi Viswavidyal aya, Pundibari	Attended
9.	Enhancing Nutritional Security through Climate Smart Farming Practices' Organized by Cooch Behar Association of Cultivation for Agricultural Sciences (COBACAS)	Dr. Hossain Ali Mondal	17 th and 18 th March, 2017	Regional Research Station (Hill Zone), Kalimpong	Attended
10.	Insight to Plant Biology in the Modern Era.	Dr. Hossain Ali Mondal	8 th -10 th February, 2017	Bose Institute, Kolkata	Attended

11.	Metabolic profiling as a selection tool for abiotic and biotic stress tolerance in horticultural crops	Dr. Hossain Ali Mondal	27 th Novem ber - 6 th Decemb er,2017.	ICAR- Indian Institute of Horticultural Research, Hessaraghatt a Lake,Karnat aka.	Attended
12.	Empowering knowledge on protection of plant varieties, IPRs and PGR related issues in cereals	Dr. Hossain Ali Mondal	March, 2018.	Indian Institute of Wheat & Barley Research, PB-158, Agrasain Marg, Karnal	Attended
13.	24th West Bengal State Science & Technology Congress on	Dr. Rupsanatan Mandal	28 th February to 1 st March, 2017	Department of Higher Education, Science and Technology and Biotechnolo gy, Government of West Bengal.	Attended
14.	Innovative Farming for Food and Livelihood Security in Changing Climate	Dr. Rupsanatan Mandal	12-13 th , January, 2018	"Innovative Farming" jointly organized by: Bidhan Chandra Krishi Viswavidyal aya, West Bengal	Attended
15.	Recent Advance in Crop Improvement, Production and Post Harvest Technology in Potato Research	Dr. Rupsanatan Mandal	18 th July to 7 th August, 2017	ICAR- CPRI, Shimla, HP.	Attended

16.	Advanced Wheat	Dr. Saikat Das	17 th July -	USDA,	Attended
	Improvement Course		16 th August	USA;	
	(Pathology Module)		,2017.	INIAF,	
				Bolivia and	
				CIMMYT,	
				Mexico	
17.	CAFT training program	Dr. Avijit Kundu	01 st -21 st	ICAR-	Attended
	on "Next generation		December,	NRCPB,	
	sequencing and its		2017	New Delhi	
	application in crop				
	sciences"				

L. Any other (Achievement)

(i) Reviewer of Journal

Dr. Suvendu Kumar Roy

- 1. Oryza, NRRI, Cuttack, Orissa
- 2. Journal of Crop and Weed, BCKV, West Bengal
- 3. Journal of Agriculture and Technology, UBKV, Cooch Behar, West Bengal
- 4. Electronic Journal of Plant Breeding, TNAU, Coimbatore, Tamil Nadu

Dr. Arup Sarkar

Acted as the Reviewer for American Journal of Plant Sciences (Scientific Research Publishing)

Dr. Lakshmi Hijam

Bioinfo Publications

Dr. Moumita Chakraborty

Journal Bioinfo Publications.

Dr. Rupsanatan Mandal

- 1.International Journal of Agriculture Sciences
- 2. Biosciences Biotechnology Research Asia
- 3. African Journal of Plant Science
- 4. African Journal of Food Science
- 5.Indian Journal of Science and Technology

Dr. Saikat Das

Journal of Wheat & Barley Research (ISSN: 2249-4065) published by SAWBR, Karnal, Haryana.

(ii) External Examiner

Dr. Suvendu Kumar Roy

Evaluation of M.Sc. thesis at BCKV

Dr. Arup Sarkar

External Member of the Board of Studies of the Department of Genetics and Plant Breeding, BCKV, West Bengal.

(iii) Resource person

Dr. Lakshmi Hijam

- 1. Acted as resource person for delivering a lecture on topic "Importance of quality seeds" to the farmers of Madarihat block, Alipurduar, West Bengal on the eve of field day under ATMA.
- 2. Acted as resource person in the "Awareness cum Training Programme on medicinal plants cultivation and conservation held at UBKV, Pundibari on 20.2.2018

Dr. Moumita Chakraborty

Acted as resource person in the "Awareness cum Training Programme on medicinal plants cultivation and conservation held at UBKV, Pundibari on 20.2.2018

(iv) Variety developed

Dr. Soumendra Chakraborty

1. Developed Ginger variety as a breeder Mohini (UBKV AADA-1) which is notified for national release throughout India in ginger growing states by Department of

Agriculture and Farmers Welfare, Govt. of India on 16thJanuary, 2018. Novel and distinguishing Characteristics of the variety: (a) Bold size, (b) high yield, (c) high dry recovery content, (d) high range of essential oil and oleoresin content.

2. UBKV Turmeric TCP-64 (UTTARRUPANJANA) is submitted to state variety release committee.

(iv) Member of editorial board

Dr. Arup Sarkar

Editorial Board Member of Research Journal of Agriculture and Forestry Sciences.

Dr. Soumendra Chakraborty

- 1. International Journal of Agriculture, Environment and Biotechnology-New Delhi.
- 2. Greener Journal of Agricultural Sciences, Nigeria
- 3. Journal of Advanced Biological and Biomedical Research
- 4. Journal of Maize Research and Development, Nepal.

Dr. Hossain Ali Mondal

- 1. International Journal of Agriculture Science
- 2. World Journal of Pharmacy and Pharmaceutical science









Inauguration of University Marathon 2018

Inauguration of University Marathon 2018





Dr.Arup Sarkar participating at the 100 metre race, Annual Sports Meet 2018



Valeriana plants derived from seeds, cutting and tissue culture means in the Plant Growth Room conditioned with 3000 LUX light intensity, 14 hours light in a day, 70% humidity and soilless media (soil-rite) as growing media.

Dr. Lakshmi Hijam on winning the 100 metre race, Annual Sports Meet, awarded by Dean, Faculty of Agriculture



Tissue culture derived Valeriana plant growth

