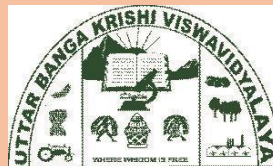


Department of Entomology

ANNUAL REPORT

2020-21



Faculty of Agriculture
UTTAR BANGA KRISHI VISWAVIDYALAYA
PUNDIBARI, COOCHBEHAR – 736165
West Bengal, India

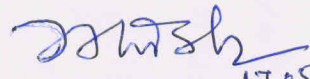
From the desk of Head of the Department

Department of Agricultural Entomology has prepared its Annual Report for the year 2020-21. The report is the exact reflection of the year round activities of the Department involved in different activities; i.e. in the area of academic, research and extension. The respected as well as the knowledgeable and experienced faculties of the Department shouldered their responsibilities throughout the year. They guided the students in both UG and PG levels. They not only illuminated them to gain knowledge through theoretical classes, but they unearthed the treasures before them that are hidden in laboratory studies as well as in field level practical classes. The students are distinct indifferent activities, both in academic and research, and are excellent competitors in different examinations like JRF, NET, SRF etc. The effort, hard work, dedication of the students and the help and guidance from the teachers as pathfinders built up the basement of the success that made us very proud. A Voluntary Centre on AICRP on Biological Control of Crop Pests, established in the year 2016-17, has been upgraded to Contingency Centre as approved from NBAIR, Bengaluru and is continuously working on different parameters of Biological Control of crop pests and weeds.

Farmers are one of the pillars of Agriculture. All the teachers have always raised their helping hand in the form of advisory to the farmers who attended the Department for any query. Non-teaching staffs have also expressed their co-operative attitude in every aspect. All of them provided necessary information during preparation of the report.

I am very much thankful to all of them for the whole-hearted co-operation and co-ordination. I congratulate the entire Department for preparing the Annual Report 2020-21 so successfully.

Date: 17.05.2021
Place: Pundibari


(Prof. J. Ghosh) 17.05.2021

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Executive summary of the Department of Agril. Entomology (2020-21)

1.1 INTRODUCTION:

This department started as a constituent under the erstwhile North Bengal Campus of Bidhan Chandra Krishi Viswavidyalaya (BCKV) since 1979 at Gram Sevak Training Centre at Cooch Behar, West Bengal and only the undergraduate courses were catered till 1998. After that M.Sc. (Ag.) programme with an intake capacity of five (05) students was introduced from 1999.

The full-fledged Department of Agricultural Entomology started functioning with the establishment of Uttar Banga Krishi Viswavidyalaya in February, 2001. Since the establishment of the university in 2001 both the undergraduate and post graduate courses (M.Sc. and Ph.D.) have been introduced.

1.2 Objectives

- a) Conducting instructional programme to the Under Graduate, post-Graduate and Ph.D. students through theory and practical trainings to develop and supply best human resources in the field of agriculture and allied sciences to compete in job market.
- b) To carry out and supervise fundamental, academic and applied researches for the development of science for ultimate benefit to the farming community with keen attention towards restoration of health, environment and right to get residue free food stuff.
- c) Imparting training and visit to the farmers field with the students for the benefit of teachers and students to perceive the current on-farm problems and also to provide advisory with most modern technologies for mitigation.
- d) Restoring democratic environment and to maintain corporate life in integrity among the members of the Department for better teaching-learning processes.
- e) To maintain sustained effort towards improving teaching methodology befitting course-curriculum for imparting best knowledge to the students.

2. Teaching

The Department has catered different courses for Under Graduate Agriculture and Horticulture students as per Vth Dean Committee were ENT-151, ENT-152, ENT-201, ENT- 251, ENT- 301, ENT-351, ENT-352 and ENT- 353 during the tenure 2020-21.

2.1 Post Graduate Requirement:

The courses offered to the PG students were –

M.Sc.: ENT- 501, ENT-502, ENT-503, ENT-504, ENT-506, ENT-507, ENT-509, ENT-510, ENT-511 and ENT-512.

Ph.D.: ENT-601, ENT-602, ENT-603, ENT-605, ENT-606, ENT-607, and ENT-608.

2.2 PG Student completed degree:

i) M.Sc. (Ag)

SL No	Name of the student	Gender	Home state	Supervisor	Title of the thesis
1.	Amit Rout	M	Maharastra	Dr. J. Ghosh	Seasonal Incidence of Insect Pests of Cabbage and Effect of Pest Control Modules for this Sustainable Management
2.	Tumma Mounika	F	Telengana	Dr. S. K. Sahoo	Diversity of <i>Callosobruchus</i> spp. and their Management with Some Botanicals in Terai Agro-ecology of West Bengal.
3.	Riju Nath	M	West Bengal	Dr. N. Laskar	Impact of Environment and Floral Factors on the Activities of <i>Apis mellifera</i> Linn.

ii) Ph. D.

SL No	Name of the student	Gender	Home state	Supervisor	Title of the thesis
1.	Supriya Okram	F	Manipur	Prof. T. K. Hath	Bio-ecology of Rice Weevil, <i>Sitophilus oryzae</i> L. on Rice in Terai Region of West Bengal.
2.	Umesh Das	M	Chhattisgarh	Prof. J. Ghosh	Formulation of Pest Management Modules of Okra, <i>Abelmoschus esculentus</i> L. under Terai Agro-ecology of West Bengal.
3.	Puran Pokhrel	M	West Bengal	Prof. N. Laskar	Studies on edible insects for nutritional security under northern tract of West Bengal.

2.3 Existing M.Sc. students along with the name of supervisor

SL No	Name of the student	Gender	Home state	Supervisor	Title of the thesis
1.	Thodusu Mamatha	F	Maharashtra	Prof. T. K. Hath	Studies on the Pest Complex in Brinjal and Management of Sucking Pests with Botanicals.
2.	Dharmaraj Soren	M	West Bengal	Dr. S. K. Sahoo	Studies on the Bio-ecology of Mango hopper (Cicadellidae: Hemiptera) in Terai Zone of West Bengal
3.	Moumita Modak	F	West Bengal	Dr. P. Sarkar	Identification and Distribution of Root Knot Nematode (<i>Meloidogyne</i>) Species and Races Infecting Betelvine (<i>Piper betle</i> L.) in Terai Region of West Bengal.
4.	Subham Kumar Sarkar	M	West Bengal	Prof. J. Ghosh	Population Dynamics of Mustard Aphid (<i>Lipaphis Erysimi</i> Kalt.) and its Demographic Parameters on Mustard.
5.	Swagata Bhowmik	F	Tripura	Prof. T. K. Hath	Diversity of Insect Pests in Stored Rice and Biology of <i>Sitophilus oryzae</i> L. on Scented and Non-scented Rice under Terai Zone of West Bengal.
6.	Tangella Meghana	F	Andhra Pradesh	Prof. N. Laskar	Tephritid Diversity under Terai Agro-ecological Region of West Bengal.
7.	Thathukannan C.	M	Andhra Pradesh	Prof. S. Pal	Studies on the Pest Complex of Holy Basil (<i>Ocimum Sanctum</i> L.) with Special Reference to Lace Bug, <i>Cochlochila bullita</i> (STALL)
8.	Dhanapati Gokul Krishna	M	Odisha	Prof. S. Pal	Studies on Some Common <i>Coccinellids</i> with Special Reference to Morpho-taxonomy and Bio-ecology of <i>Micraspis</i> spp.
9.	Samrat Saha	M	West Bengal	Prof. N. Laskar	Assessment of Bee Forages through Melissopalynological Analysis from Terai Agro-ecological Situation of West Bengal.
10.	Bipad Taran Sutradhar	M	West Bengal	Prof. J. Ghosh	Insect Pest Constraints of Stored Pulses
11.	Mrinal Karjee	M	West Bengal	Dr. P. Sarkar	Response of Rice Genotypes to the Rice Root Knot Nematode (<i>Meloidogyne graminicola</i>) and its Integrated Nursery Management Strategy in the Foothills of Eastern Himalayas

2.4 Existing Ph.D. students along with the name of supervisor

SL No	Name of the Student	Gender	Home state	Supervisor	Title of the thesis
1.	Bireshwar Kundu	M	West Bengal	Dr. T. Dhar	Study of Insect Pest Dynamics in Blackgram And Probable Resistance Factors in Variable Response by Different Local Genotypes
2.	Biswajit Patra	M	West Bengal	Prof. T. K. Hath	Studies on Insecticide Resistance in <i>Empoasca flavescens</i> Fabricius and Acaricide Resistance in <i>Oligonychus coffeae</i> Nietnar on Tea.
3.	Fouzia Bari	F	Bihar	Prof. S.K. Senapati	Banana Leaf and Fruit Scarring Beetle (Chrysomelidae: Coleoptera) and its Safe Management.
4.	Biwas Gurung	M	West Bengal	Dr. W. Reza	Studies on Arthropod Faunal Complex on Wheat Ecosystem with Special Reference to Aphid In Terai Region of West Bengal
5.	Moulita Chatterjee	F	West Bengal	Prof. J. Ghosh	Incidence of Rice Leaf Folder, <i>Cnaphalocrosis Medinalis</i> Guen and their Ecological Management under Terai Region of West Bengal
6.	Shriti Moses	F	Bihar	Prof. J. Ghosh	Diversity, Population Structure and Conservation of Predatory Spiders in Rice Eco-System in Terai Region of West Bengal
7.	Sibananda Singha	M	West Bengal	Prof. N. Laskar	Biotic Stress of Honey Bee (<i>Apis mellifera</i> Linn) and their Eco-Friendly Management under Terai Region of West Bengal.
8.	Suraj Sarkar	M	West Bengal	Prof. S. Pal	Biointensive Pest Management in Brinjal through Farmscaping and Biorationals.
9.	Debanjan Chakraborty	M	West Bengal	Dr. S. K. Sahoo	Species Recognition and Bio-Ecology of Invasive Rugose Spiralling Whitefly, <i>Aleurodicus Rugioperculatus</i> Martin (Aleyrodidae: Hemiptera) in West Bengal.
10.	Atanu Maji	M	West Bengal	Dr. S. K. Sahoo	Morphometric and Molecular Characterization of Aphids (Aphididae: Hemiptera) on Vegetable and Fruit Crops in West Bengal
11.	Swapna Rani	F	Telengana	Prof. S. Pal	Insect Pests and Natural Enemy Complex of Some Selected Medicinal Plants under Northern Tract of West Bengal.
12.	Tapas Kumar Hembram	M	West Bengal	Dr. T. Dhar	Study on Feeding Preference and Digestive Physiology of <i>Spodoptera frugiperda</i> (Smith) and <i>Spodoptera Litura</i> (Fab.) on Different Hosts.

13.	Riju Nath	M	West Bengal	Prof. S. K. Senapati	Study on pollinators under Terai Agro-climatic Region of West Bengal
14.	Tumma Mounika	F	Telangana	Prof. T. K. Hath	Diversity of Insect-pests of Stored Pulses with Special Reference to Bio-ecology of <i>Callosobruchus chinensis</i> under Terai Agro-Ecology of West Bengal
15.	Pousabh Das	M	West Bengal	Dr. Wasim Reza	Key Insect-pest and their Management at Different Growth Stages of Paddy (<i>Oryza sativa</i> L.) in Terai Region of West Bengal
16.	Deepika Gadaily	F	Sikkim	Dr. T. Dhar	Studies on Insect-pest and Natural Enemy Biodiversity in Cabbage (<i>Brassica oleracea</i> var. capitata L.) under Terai Zone of West Bengal
17.	Toge Riba	M	Arunachal Pradesh	Dr. N. Chowdhury	Pest Constraints of Litchi (<i>Litchi chinensis</i> Sonn) at Different Agro-climatic Sub-region of Zone-II (India)

3.RESEARCH

3.1 Area of research:

The Department of Agril. Entomology has directed research activity on various aspects in the following way –

- * Crop-pest based research
- * Fundamental research like species identification, morphological studies, taxonomical studies including application of molecular approaches.
- * Formulation of IPM modules for different crop and pests
- * Mass production, release and maintenance of biological agents
- * Productive insect based research like honey bee, silkworm etc.
- *Management of nematodes and mites pests of different crops

3.2 Scholarships, Stipends and fellowship:

i) M.Sc. students

Sl. No.	Name of the students	Name of the Scholarship	Amount (Rs.)
1.	Dhanapati Gokul Krishna	University Merit Scholarship	3,600/- per semester
2.	Samrat Saha	-Do-	3,600/- per semester
3.	Bipad Taran Sutradhar	Swami Vivekananda Merit-cum-Means Scholarship	18,000/- per year
4.	Mrinal Karjee	-Do-	18,000/- per year

ii) Ph.D. students

Sl. No.	Name of the students	Name of the Scholarship	Amount/month (Rs.)
1.	Riju Nath	University Research Scholar	18,000/- per month
2.	Tumma Mounika	Non-NET Swami Vivekananda Merit-cum-Means Scholarship	8,000/- per month
3.	Pousabh Das	University Research Scholar	18,000/- per month
4.	Deepika Gadaily	Non-NET Swami Vivekananda Merit-cum-Means Scholarship	8,000/- per month

3.3 Involvement of teachers in various research projects:

SL. No.	Name of the projects/ scheme	Name of the P.I.	Year of commencement	Funding Agency	Total Budget (Rs.)
1.	Beekeeping for Upliftment of Rural Livelihood in Terai Region of West Bengal	Prof. N. Laskar	2018	NABARD	5.08 lakh
2.	AICRP on Biological Control of Crop Pests and Weeds	Dr. S. K. Sahoo	2018	ICAR-NBAIR	Contingency Centre
3.	Bio-efficacy, Phytotoxicity and effect on natural enemies of some new generation molecules on paddy, chilli and sugarcane.	Prof. J. Ghosh	2019	Willowood Chemicals Pvt. Ltd.	7.98 lakh
4.	Bio-efficacy and phytotoxicity evaluation of coded product Fall armyworm in maize.	Dr. S. K. Sahoo	2019	Crystal Crop Protection Ltd.	3.99 lakh
5.	Evaluation of bio-efficacy of coded insecticide CCP-0415 against <i>Spodoptera</i> spp. In soybean.	Dr. S. K. Sahoo	2019	-Do-	3.99 lakh
6.	Evaluation of bio-efficacy of NC-129 (20% WP) against red spider mite and white fly infesting brinjal.	Dr. S. K. Sahoo	2019	Godrej Agrovet Ltd.	5.06 lakh
7.	Bio-efficacy, phytotoxicity and effect on natural enemies of some insecticide molecules on soybean, pigeon pea and Groundnut	Prof. N. Laskar	2019	UPL	13.44 lakh
8.	Bio-efficacy, phytotoxicity and effect on natural enemies of some insecticide molecules on some field crops	Prof. N. Laskar	2019	UPL	6.72 lakh
9.	Bio-efficacy trial of Emamectin benzoate 1.5% + Profenophos 35% WDG against green semilooper, pod borer, girdle beetle & tobacco caterpillar in soybean.	Prof. J. Ghosh	2021	Parijat Industries Pvt. Ltd.	2.80 lakh
10.	Evaluation of Chlorantraniliprole 9.3% w/w + Lambda Cyhalothrin 4.6% w/w ZC (Ampligo 150 ZC) in Rice through Drone application	P.I.: Prof. A. Roy Co-PI: Dr. S. K. Sahoo	2021	Syngenta	2.50 lakh

4. Extension Activities

Training programmes were organised on –

- a) Cultivation practice of mustard under TSP of AICRP-Biological control on 17.11.2020 at Nurpur, Samuktala, Alipurduar.
- b) Pests and disease management of mustard using botanicals and microbials on 24.11.2020 under TSP of AICRP-Biological control at Nurpur, Samuktala, Alipurduar.
- c) Beekeeping for upliftment of rural livelihood on 08.01.2021 under TSP of AICRP-Biological control at Nurpur, Samuktala, Alipurduar.

5. INFRASTRUCTURAL FACILITIES

Sl. No.	Infrastructure	Number	Facilities Available
a)	Seminar Hall cum classroom	01	AC, Internet Connectivity and LED Monitor for display/presentation
b)	Molecular Entomology Laboratory	01	Thermal Cycler PCR, Gel Electrophoresis, Deep Freezer, Transilluminator, Digital Hot Water Bath and Micro Centrifuge
c)	Insect Taxonomy and Morphology Laboratory	01	Stereo Zoom Microscopes (Binocular/Trinocular: 07) with imaging facility, Hot Air Oven, BOD
d)	Biological Control Laboratory	01	Laminar Air Flow and Autoclave
e)	Acarology Laboratory (under progress)	01	– N.A. –
f)	UG Laboratory (Fundamentals of Entomology)	01	Simple and Compound Microscopes (30 each)
g)	Insect Museum	01	Collection of insects belonging to different orders featuring an aesthetic appeal
h)	PG Laboratory	01	Laminar Air Flow, Hot Air Oven and other Instruments and Equipments related to PG Research

6. FACULTY AND STAFF POSITION**Faculty**

Sl. No	Name	Designation	Specialisation	Contact details
1.	Dr. Jaydeb Ghosh	Professor	Economic Entomology and Acarology	Ph.No.9434483767 Email: jaydebubkv@yahoo.com
2.	Dr. T.K. Hath	Professor	Economic Entomology	Ph.No.9434685670 Email: tapanhath@gmail.com
3.	Dr. N. Laskar	Professor	Economic Entomology	Ph. No. 9434483855 Email: nripendralaskar@yahoo.co.in
4.	Dr. S.K. Sahoo	Associate Professor	Economic Entomology	Ph.No.9647255868 Email: shyamalsahoo@gmail.com
5	Mrs. M. Chatterjee	Assistant Professor	Economic Entomology and Acarology	Ph.No.9679350517 Email: moulita.2014@gmail.com
6.	Mr. D. Chakraborty	Assistant Professor	Economic Entomology	Ph.No.9647800589 Email: debanjan.ubkv@gmail.com

Staff

Sl. No.	Name	Designation	Specialisation	Contact details
1.	Dr. T. K. Ghosal	Superintendent (Tech.)	Associated in practical classes	Ph.No.9474521381 Email: drtkghosal@gmail.com
2	Sri Subrata Dhar	Lab Attendant	Maintenance of files, lab attendant, letter distribution	Ph. No. 6297793652 / 9851749595

7. PUBLICATION

SL NO.	Title	Author(s)	Journals with NAAS/ Other rating
1.	Seasonal incidence of aphid and their natural enemies on mustard from terai region of West Bengal. Year of publication 2020	Maji, A., Pal, S., Chatterjee, M. and Sahoo, S.K.	<i>Journal of Entomological Research</i> 44(4): 555-558 NAAS rating 5.05 (ISSN: 0378-9519)
2.	Effect of Milling Methods on the Infestation of <i>Sitophilus oryzae</i> (L.) (Coleoptera: Curculionidae) on Stored Rice Grains in Terai Agro-Ecology of West Bengal Year of publication 2020	Okram, S. and Hath, T. K.	<i>International Journal of Current Microbiology and Applied Science</i> 9(8): 880-886 NAAS rating 5.38 (ISSN: 2319-7692)
3.	Sanchita (YSWB 2014/2) and Anushka (YSWB 2011-10-1) – two yellow sarson (<i>Brassica rapa</i> var. yellow sarson) varieties notified for West Bengal. Year of publication 2021	Dutta, A., Mandal, K.N. Sahoo, S.K. , Das, R., Roy, Sarkar, S., Patra, S.R., Bhujbal, S. Rai, A. and Jambhulkar, S.J.	<i>Journal of Oilseeds Research</i> 38(2): 207-210 NAAS rating 5.02 (ISSN: 0970-2776)
4.	Seasonal incidence of mustard aphid (<i>Lipaphis erysimi</i> Kalt.) and its correlation with weather factors under terai zone of West Bengal. Year of publication 2021	Sreedhar, B.K., Hath, T.K. , Sahoo, S.K. and Okram, S.	<i>International Journal of Current Microbiology and Applied Science</i> 10(1): 2556-2561 NAAS rating 5.38 (ISSN: 2319-7692)
5.	Studies on ovicidal activities of selected acaricides against <i>Oligonychus coffeae</i> Nietner on tea Year of publication 2021	Patra, B., Sahoo, S.K. and Hath, T. K.	<i>Journal of Entomology and Zoology Studies</i> 8(2): 554-556 NAAS rating 5.53 (ISSN: 2320-7078)

i. **Book:** NILii. **Book Chapter:**

Sl. no.	Title	Authors	Detail of Publication
1.	Indigenous Technical Knowledge (ITK) in Managing Pests of Ornamental Plants	Gazmer, R. and Laskar, N.	Advances in Pest Management in Commercial Flowers (Ed. Chakravarty, A. K. and Pal, S.)

iii. **Bulletin:** NILiv. **Abstract:** NIL

v. Popular Article

Sl. No.	Title	Authors	Detail of Publication
1.	Insect and acarine pests menace of Jasmine (<i>Jasminum sambac</i> L.) and their ecofriendly management	Chatterjee, M., Halder, J. and Majumder, S.	Agriculture Letters (ISSN: 2582-6522)
2.	Ecological engineering through diverse flowering plants: a novel approach in pest management	Chatterjee, M. and Halder, J.	Agriculture Letters (ISSN: 2582-6522)
3.	Food packaging: Modern tool for Managing Insects in Storage	Chatterjee, M. and Chakraborty, D.	Agri-India Today (Monthly e- Newsletter)

8. SYMPOSIUM/ TRAININGS/ SEMINARS ATTENDED AND ORGANISED:

Sl. No.	Topic of seminar (Attended by)	Venue and date	Duration	National/ International	Funding Agency/Organiser (ICAR/Other)
1.	Challenges and Recent Initiatives for management of Fall Army Worm (Prof. N. Laskar, M. Chatterjee and D. Chakraborty)	Online Mode 16.07.2020	1 day	National	BAU, Sabour
2.	“Moth diversity, Ecology and Conservation” (D. Chakraborty)	Online Mode 24.07.2020	1 day	International	St. Joseph College, Bengaluru
3.	Drones application technology in spraying for crop protection (Dr. S. K. Sahoo and D. Chakraborty)	Online Mode 29.07.2020	1 day	National	Crop Life India and FICCI
4.	Digital agriculture – Piloting to Scaling out proven technologies (M. Chatterjee)	Online Mode 01.08.2020	1 day	National	Ray Consulting and ICRISAT
5.	Fruit Fly Awareness Day (Prof. N. Laskar, Dr. S. K. Sahoo and D. Chakraborty)	Online Mode 08.08.2020	1 day	National	AAPP, BCKV

6.	Biopesticides – Registration and Quality control: Issues – way forward (Dr. S. K. Sahoo)	Online Mode 06.10.2020	1 day	National	SBA, ICAR-NBAIR and ESI, New Delhi
7.	Integrated Pest Management for Maize Crop with Special Reference to Fall Armyworm (Prof. J. Ghosh, M. Chatterjee and D. Chakraborty)	Online Mode 09.10.2020	1 day	National	ICAR-IIMR
8.	Insect Systematics: Importance, Challenges and Way Forward (Dr. S. K. Sahoo and D. Chakraborty)	Online Mode 29.01.2021	1 day	International	ICAR-NBAIR
9.	Covid 19: Challenges for Management of Mental Health and Risk Factor (Dr. S. K. Sahoo)	Online Mode 19.05.2021 20.05.2021	2 days	National	A.B.N. Seal College, Cooch Behar
10.	Nematode Awareness Day (Dr. S. K. Sahoo)	Online Mode 07.07.2021	1 day	National	AAPP-BCKV
11.	30 th Annual Group Meeting of AICRP-Biological Control (Dr. S. K. Sahoo, M. Chatterjee and D. Chakraborty)	Online Mode 14.07.2021	1 day	National	ICAR-NBAIR

9. MEMBER OF ACADEMIC SOCIETIES

Sl. No.	Name of the Faculty	Name of the Academic Society
1.	Prof. J. Ghosh	COBACAS Society of Biological Control Advancement
2.	Prof. T. K. Hath	COBACAS
3.	Prof. N. Laskar	Society of Biological Control Advancement
4.	Dr. S. K. Sahoo	COBACAS Entomological Society of India Society of Biological Control Advancement

5.	Mrs. M. Chatterjee	COBACAS Crop and Weed Science Society
6.	Mr. D. Chakraborty	COBACAS

10. OTHER ACTIVITIES AND ACHIEVEMENTS

(Co-curricular, Extension and Professional Development related Activities)

Sl. No.	Acted as Resource Person (Topic)	Date(s) of Training	Funding Agency/Organiser (ICAR/Other)
1.	Conservation of Natural Enemies and Beneficial Insect in Agriculture (Dr. S. K. Sahoo and D. Chakraborty)	Online Mode 23 rd September, 2020	KVK, Malda
2.	Trainings on Beekeeping (Prof. T. K. Hath, Prof. J. Ghosh, Prof. N. Laskar, Dr. S. K. Sahoo, M. Chatterjee and D. Chakraborty)	Offline Mode 15 th -23 rd March, 2021	KVK, Coochbehar

11. CURRICULUM DEVELOPMENT & DELIVERY:

Study material and PPT on different entomological courses under UG and PG. Development of Practical manual of different UG courses.

12. LINKAGES WITH ICAR INSTITUTES FOR ACADEMIC RESEARCH IF ANY:

Sl. No.	Purpose	Institute	No. of Teachers/ Academic Staff
1.	Question setter	CAU, Barapani	Prof. T. K. Hath
		Visva-Bharati University	Prof. J. Ghosh
2.	Thesis evaluator	(i) BCKV, Mohanpur, Nadia (ii) OUAT, Bhubaneswar, Orissa	Prof. T. K. Hath
		(i) R.P.G.A.U., PUSA Samastipur, Bihar (ii) BAU, Sabour	Prof. J. Ghosh
3.	External expert	BCKV, Mohanpur, Nadia	Prof. T. K. Hath

Photographs

Teaching related



Students in the field for attending practical class with the esteemed teacher



Student delivering pre-thesis submission seminar related to his dissertation work in the departmental seminar room

Research related



Students in the research plot for swarm collection of Honey Bee (*Apis mellifera* Linn) from Guava orchard



Students in the laboratory for collection of Hornet (*Vespa tropica* Linn) grub from its nest for thesis related work

Extension related



Distribution of Beehive and Honey extractor in a camp at Nurpur under TSP of AICRP on Biological Control project



Awareness-cum-input distribution programme at Samuktala in connection with AICRP on Biological Control project