



ANNUAL REPORT

2022-23



**POMOLOGY AND POSTHARVEST TECHNOLOGY
FACULTY OF HORTICULTURE**

Uttar Banga Karishi Viswavidyalaya

Pundibari : Cooch Behar

Annual Report

2022-23



Pomology and Post-Harvest Technology Uttar Banga Krishi Viswavidyalaya Pundibari : Cooch Behar

PREFACE

It is my great pleasure to present the Annual Report (2022-23) of the Department of Pomology and Postharvest Technology. This report serves as a window into our present educational, research, and operational and students' activities.

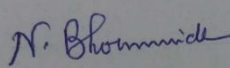


The northern region of West Bengal is blessed with diverse range of agro-climatic conditions ideal for cultivating various fruit crops. Pineapple, mango, Darjeeling mandarin oranges are the pre-dominant important fruit crops of this area. Apart from these, lime, lemon, banana, guava, strawberry and few other crops like sweet oranges, dragon fruit has tremendous potential. The less availability of quality planting materials, prevalent acidic soils, nutrient deficiencies, high rainfall along with high humidity coupled with disease, pest infestation are the main limiting factors for commercial cultivation of many fruit crops despite its potentialities.

In response to these challenges, our department has embarked on a proactive journey to expand the horizons of fruit cultivation. Our primary objectives encompass the introduction and evaluation of novel fruit varieties, assessment of genetic diversity, widespread dissemination of advanced production techniques, standardization of propagation techniques, the implementation of integrated nutrient management strategies, study of biotic, abiotic stress tolerance, the reduction of postharvest losses, and the standardization of innovative postharvest technologies. These collective efforts aim to amplify both production and productivity while extending the shelf life of harvested fruits. Over our twenty-two-years journey, we have established a legacy of excellence in horticultural education, research, and extension activities.

Nurturing an environment conducive to academic rigor, research excellence, and efficient technology dissemination within our department is pivotal for steering us toward the realization of our ambitious goals. While I acknowledge the challenges ahead, particularly the resource constraints in the current landscape, I remain confident that, collectively, we can overcome these hurdles and propel the department toward even greater heights of achievement.

I extend my heartfelt appreciation to our dedicated faculty members, alongside our invaluable technical staff, students whose untiring commitment and diligence continue to shine as they consistently strive to meet and exceed our established targets.



N. Bhowmick
Head
Dept. of Pomology & Post Harvest Technology
Faculty of Horticulture
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(NILESH BHOWMICK)

A. TEACHING AND NON- TEACHING STAFFS OF THE DEPARTMENT

1) TEACHING STAFFS

a) **Cadre Posts:** Professor – 1, Associate Professor –2, Assistant Professor –3,

b) **Present Strength :**

Sl. No.	Name	Designation	Date of joining	Contact details	Remark
1.	Prof. Prodyut Kr Paul	Professor & Dean (Discipline: Post Harvest Technology)	10.12.2001	Mob: 8016425515 Email: prodyut24@yahoo.com	--
2.	Dr. N. Bhowmick	Professor & Head (Discipline: Fruit Science)	27.11.2007	Mob: 9433438982 Email: Nileshbhowmick@gmail.com	Joined as Professor on 26.07.22
3.	Dr. Mutum Preema Devi	Assistant Professor (Discipline: Post Harvest Technology)	07.07.2014	Mob: 7063102366 Email: preema.horti@gmail.com	--
4.	Dr. Aditi Chakraborty	Assistant Professor (Discipline: Fruit Science)	20.10.2014	Mob: 9432842864 Email: aditi.chatterjee10@gmail.com	--
5.	Dr. Binayak Chakraborty	Assistant Professor (Regional Research Station-Terai Zone) [Discipline: Fruit Science]	16.01.2020	Mob: 9426922718 Email: binayak.hort@gmail.com	--
Part time Guest Lecturer					
6.	Mahabub Alam	Part time Guest Lecturer (Fruit Science)	05.12.2022	Mob: 9432087584 Email: mahabub.hort@gmail.com	--
7.	Srujana Eda	Part time Guest Lecturer (Post Harvest Technology)	13.12.2022	Mob: 8332878129 Email: srujanasruzeda7@gmail.com	--

2) NON-TEACHING STAFFS

Sl. No.	Name	Designation	Date of joining	Contact number	Remark
1.	Mr. Nitish Ch. Saha	Superintendent (Technical)	03.7.1989	9475835338	--
2.	Mr. Ananda Sarkar	Laboratory Attendant, Grade-II	01.09.2008	8927242990	--
3.	Mr. Sourav Bhowmick	Jr. Laboratory Attendant	10.02.2021	7001289077	--

3) STUDENT INTAKE CAPACITY

Under Graduate Programme

B.Sc. (Hort.) Hons:- 30 in each Academic Session under the Faculty of Horticulture.

Post Graduate Programme

The Department has started for offering of M.Sc. and Ph.D. degree in two disciplines namely Fruit Science & Post Harvest Technology from the academic session of 2017-18. As per the

recommendation of ICAR-BSMA committee the Post Harvest Technology has renamed as Post Harvest Management from 2022-23.

M. Sc. Programme: Two students per teacher per academic session in each disciplines

Ph.D. Programme: Maximum 6 students in Fruit Science & 2 students in Post Harvest Management discipline subject to maximum intake of 4 students per teacher at any point of entry time

4) DEPARTMENTAL ACTIVITIES

a) Teaching Programme

i) Courses Offered in UG level

Sl. No.	Course No.	Course Title	Credit	Course Leader	Associated teachers
1.	PPT 101	Fundamentals of Horticulture	1+1	Dr. B Chakraborty	Prof. N. Bhowmick, Mr. M. Alam
2.	PPT 102	Plant Propagation and Nursery Management	1+1	Dr. A Chakraborty	Dr. B. Chakraborty, Mr. M. Alam
3.	PPT 151	Orchard and Estate Management	1+1	Dr. Aditi Chakraborty	Mr. M. Alam
4.	PPT152	Dry Land Horticulture	1+1	Dr. B. Chakraborty	Dr. B. Chowdhuri
5.	PPT 201	Temperate Fruit Crops	1+1	Prof. N Bhowmick	Mr. M. Alam
6.	PPT 251	Tropical and Subtropical Fruits	3+1	Prof. P. K. Paul	Dr. M. P. Devi, Ms. S. Eda
7.	PPT 252	Production Technology for Fruit and Plantation Crops	1+1	Prof. N. Bhowmick	Dr. M. Alam Teacher from PCP
8.	PPT 351	Breeding of Fruit and Plantation Crops	2+1	Prof. N. Bhowmick	Dr. A. Chakraborty Teacher from PCP
9.	PPT 352	Principles of Food Science and Nutrition	2+0	Prof. P. K. Paul	Dr. M. P. Devi Ms. S. Eda
10.	PPT 353	Post Harvest Management and Value Addition of Fruits and Vegetables	1+1	Dr. M. P. Devi	Prof. P. K. Paul Ms. S. Eda
11.	HOR 151	Principles of Horticultural Crops and Plant Protection	1+1	--	Mr. M. Alam Teachers from VSC, PPA and ENT
12.	ELC 352	Food Safety and Standards	2+1	Dr. M. P. Devi	Prof. A. Roy, Dr. H. S. Konar

ii) Courses Offered for M.Sc.

Sl. No.	Course No.	Course Title	Credit	Course Leader	Associated teachers
1.	FSC 501	Tropical Fruit Production	2+1	Prof. N. Bhowmick	Mr. M. Alam
2.	FSC502	Sub-Tropical and Temperate Fruit Production	2+1	Dr. B. Chakraborty	Mr. M. Alam
3.	FSC 503	Propagation and Nursery Management of Fruit Crops	2+1	Dr. A. Chakraborty	Mr. M. Alam
4.	FSC 504	Breeding of Fruit Crops	2+1	Dr. A. Chakraborty	Mr. M. Alam
5.	FSC 505	Systematics of Fruits Crops	2+1	Prof. N. Bhowmick	Dr. A. Chakraborty, Dr. B. Chakraborty

6.	FSC 506	Growth and Development of Fruits Crops	1+1	Dr. A. Chakraborty	Mr. M. Alam
7.	FSC 507	Canopy Management in Fruit Crops	2+1	Prof. N. Bhowmick	M. Alam
8.	FSC 512	Climate Change and Fruit Crops	1+0	Dr. B. Chakraborty	Dr. A. Chakraborty
9.	FSC 513	Minor Fruit Production	2+1	Prof. N. Bhowmick	Dr. B. Chakraborty, Mr. M. Alam
10.	PHM 501	Post-harvest Management of Horticulture Produce	2+1	Dr. M. P. Devi	Prof. P. K. Paul, Ms. S. Eda
11.	PHM 502	Post-harvest Physiology and Biochemical of Perishables	2+1	Dr. M. P. Devi	Prof. P. K. Paul
12.	PHM 503	Storage and Packaging of Fresh Horticultural Produce	1+1	Prof. P. K. Paul	Dr. M. P. Devi Ms. S. Eda
13.	PHM 504	Storage and Packaging of Processed Horticultural Produce	1+1	Dr. M. P. Devi	Prof. P. K. Paul, Ms. S. Eda
14.	PHM 505	Principles and Methods of Fruits and Vegetables Preservation	2+1	Dr. M. P. Devi	Prof. P. K. Paul, Ms. S. Eda
15.	PHM 506	Laboratory techniques in Post-harvest Management	1+2	Prof. P. K. Paul	Dr. M. P. Devi, Ms. S. Eda

iii) Courses offered for Ph.D.

Sl. No.	Course No	Course Title	Credit	Course Leader	Associated teachers
1.	FSC 601	Innovative Approaches in Fruit Breeding	3+0	Prof. N. Bhowmick	Dr. B. Chakraborty Dr. A. Chakraborty
2.	FSC 602	Modern Trends in Fruit Production	3+0	Dr. A. Chakraborty	Prof. N. Bhowmick Dr. B. Chakraborty
3.	FSC-603	Recent Developments in Growth Regulation	3+0	Prof. N. Bhowmick	Dr. B. Chakraborty Dr. A. Chakraborty
4.	FSC 604	Advances in Laboratory Techniques	1+2	Prof. N. Bhowmick	Dr. B. Chakraborty Dr. A. Chakraborty
5.	FSC 691	Doctoral Seminar-I		Dr. B. Chakraborty (Seminar Leader)	
6.	FSC 692	Doctoral Seminar-II		Dr. B. Chakraborty-Seminar Leader	

b) Students of the Department:

i) M.Sc Students

Sl No.	Name	Semester	Thesis title	Advisory Committee	Scholarship Enjoyed
M.Sc (Hort.) in Fruit Science					
1.	Kavitha Singh (H-2020-010-M)	Completed	Standardization of propagation technique of water apple and Malay apple through cuttings.	Prof. N. Bhowmick (Chairman) Dr. A. Chakraborty Dr. B. Chakraborty Dr. M.P. Devi	University Merit Scholarship @ Rs. 600 per month.
2.	Rajesh Das	Completed	Effect of fruit	Dr. A. Chakraborty	University Merit

	(H-2020-011-M)		bunch bagging in litchi (<i>Litchi chinensis</i> Sonn.) cultivars.	(Chairman) Prof. N. Bhowmick Dr. M.P. Devi Dr. N. Sahana	Scholarship @ Rs 600 per month
3.	Sudarshana Bhujel (H-2020-011-M)	Completed	Studies on the effect of bio-stimulants on the performance of strawberry (<i>Fragaria x ananasa</i> Duch.) cv. Festival.	Prof. N. Bhowmick (Chairman) Dr. A. Chakraborty Dr. B. Chakraborty Dr. M.P. Devi	University Merit Scholarship @ Rs. 600 per month.
4.	Diya Ghosal (H-2021-010-M)	3 rd & 4 th	Effect of pollination in cultivated and wild strawberry.	Dr. A. Chakraborty (Chairman) Prof. N. Bhowmick Dr. M. P. Devi Dr. M. Chakraborty	University Merit Scholarship @ Rs. 600 per month.
5.	Gururaj (H-2021-012-M)	3 rd & 4 th	Morphological, biochemical and molecular characterization of jackfruit germplasms of northern parts of West Bengal.	Prof. N. Bhowmick (Chairman) Dr. A. Chakraborty, Dr. N. Sahana Dr. R. Mondal Dr. M. P. Devi	National Talent Scholarship funded by ICAR Rs. @ 5000 per month.
6.	Nalamati Durga Apoorva (H-2021-011-M)	3 rd & 4 th	Analysis of Genetic Diversity of Banana Cultivars using SSR Markers.	Dr. B. Chakraborty (Chairman) Prof. N. Bhowmick Dr. N. Sahana Dr. A. Das Dr. S. Ojha	National Talent Scholarship funded by ICAR @ Rs. 5000 per month.
7.	Shahil Reza (H-2021-013-M)	3 rd & 4 th	Foliar application of Vermiwash and Micronutrients in Strawberry (<i>Fragaria x ananassa</i> Duch.).	Dr. A. Chakraborty (Chairman) Prof. N. Bhowmick Dr. B. Chakraborty Dr. A. N. Dey	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs. 2500/ month
8.	Y.Tejaswini (H-2021-014-M)	3 rd & 4 th	Morphological, biochemical and molecular characterization of acid lime.	Prof. N. Bhowmick (Chairman) Dr. B. Chakraborty, Dr. N. Sahana Dr. A. Kundu Dr. M. P. Devi	National Talent Scholarship funded by ICAR @ Rs. 5000/ month
9.	Arti Kumari Sah (H-2022-009-M)	1 st	Not yet decided	Dr. B. Chakraborty (Chairman) Dr. A. Chakraborty Dr. M.P. Devi Dr. Partha Sarathi Medda Dr. S. Ojha	University Merit Scholarship @ Rs. 600 per month

10.	Barnaly Manta (H-2022- 014-M)	1 st	Not yet decided	Prof. N. Bhowmick (Chairman) Prof. (Dr). N. Bhowmick (Chairman) Dr. A. Chakraborty Prof. (Dr.) A. N. Dey Dr. M.P. Devi Dr. S. Mandal	Post matric scholarship to SC/ST/ OBC students funded by Government of India @Rs. 1500 per month.
11.	Hasina Begam (H-2022-015-M)	1 st	Not yet decided	Prof. (Dr). N.Bhowmick (Chairman) Dr. A. Chakraborty Dr. B. Chakraborty Dr. M. P.Devi	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs. 2500 per month
12.	Monika S (H-2022-016-M)	1 st	Not yet decided	Dr. B. Chakraborty (Chairman) Prof. (Dr). N. Bhowmick Dr.M. P.Devi Dr. S. Ojha Prof. A. K. Sinha	National Talent Scholarship funded by ICAR @ Rs. 5000 per month
13.	Songzamee Parag Baruah (H-2022- 018-M)	1 st	Not yet decided	Dr. A.Chakraborty (Chairman) Dr. B.Chakraborty Dr. M. P. Devi Dr. M. Chakraborty	University Merit Scholarship @ Rs. 600 per month
M.Sc (Hort.) in Post Harvest Technology/Management					
14.	Aamir Humayun (H-2022-017-M)	Completed	Arrest of polyphenol oxidase in potato	Prof. P.K. Paul Dr. M.P. Devi Dr, S. Das Dr. M. Debnath Dr. N. Sahana	University Merit Scholarship @ Rs. 600 per month
15.	Sanasam Angousana (H-2022-019-M)	Completed	Study on food safety knowledge, attitude, practices of skilled workers of food industries of Manipur	Dr. M.P. Devi Prof. P.K. Paul Dr. S. Mandal Dr. M. K. Debnath	University Merit Scholarship @ Rs. 600 per month
16.	Kavya D (H-2020-032-M)	3 rd & 4 th	Standardisation of harvesting time of strawberry (<i>Fragaria ×ananassa</i> Duch.) for essential oil estimation and	Dr. M. P. Devi (Chairman) Dr. P. K. Paul Dr. B. Chakraborty Dr. S. Mandal	National Talent Scholarship funded by ICAR @ Rs. 5000 per month

			characterization of volatile organic compounds		
17.	Seedari Balu Mahendra (H-2021-021-M)	3 rd & 4 th	Studies on the effect of drying and brewing conditions on the quality and organoleptic attributes of roselle (<i>Hibiscus sabdariffa</i> L.) tea infusion	Dr. M. P. Devi (Chairman) Dr. P. K. Paul Dr. H. Bhattacharjee Dr. A. Chakraborty Dr. N. Sahana	University Merit Scholarship @ Rs. 600 per month
18.	Arpan Thapa (H-2022-0-M)	1 st	Not yet decided	Dr. M.P. Devi (Chairman) Prof. P.K. Paul Dr. B. Chakraborty Prof. R. Chaterjee	University Merit Scholarship @ Rs. 600 per month
19.	Nalanda Acharya (H-2022-024-M)	1 st	Not yet decided	Prof. P. K.Paul (Chairman), Dr M. P.Devi, Dr B.Chakraborty Dr S. Das	University Merit Scholarship @ Rs. 600 per month

ii) Doctoral Degree

Sl No.	Name	Semester	Thesis title	Advisory Committee	Scholarship Enjoyed
Ph.D in Fruit Science					
1.	Bidyarani Devi Senjam (H-2018-004-D)	9 th & 10 th	Studies on genetic variability and standardization of propagation techniques in pummelo (<i>Citrus grandis</i> (L.) Osbeck)	Prof. N. Bhowmick (Chairman) Prof. P.K. Paul Prof. S. Gurung Dr. A. Kundu Prof. A.N. Dey	INSPIRE Fellowship funded by Dept. of Science & Technology, Government of India @Rs. 31000 per month.
2.	Nim Tshering Sherpa (H-2019-003-D)	7 th & 8 th	Mass Multiplication and creation of variability of strawberry by tissue culture	Dr. A. Chakraborty (Chairman) Prof. N.Bhowmick Dr. B. Chakraborty Dr. N.Sahana Dr. S. Ojha	National Fellowship for Higher Education of ST Students funded by Government of India @Rs. 31000 per month.
3.	Novin Chamling (H-2019-004-D)	6 th & 7 th	Effect of boron on morpho-physiological and biochemical changes in Darjeeling Mandarin (<i>Citrus reticulata</i> Blanco.) Seedlings under	Prof. N. Bhowmick (Chairman) Dr. B. Chakraborty Prof. A. K. Sinha Dr. P. Dutta Dr. S. Mandal	University Research Scholarship @ Rs.18000 per month.

			aluminium Stress condition		
4.	Santhoshkumar GM (H-2019-007-D)	7 th & 8 th	Influence of plant growth promoting microorganisms on the performance of strawberry (<i>Fragaria x ananasa</i> Dutch) under the influence of abiotic stresses	Prof. N. Bhowmick (Chairman) Dr. A. Chakraborty Dr. A. Roy Prof. A. K. Sinha Dr. S. Mandal	Senior Research Fellow under the project funded by Department of Science and Technology and Biotechnology, GoWB @ Rs 23700 per month.
5.	Vivek Kumar (H-2020-013-D)	5 th & 6 th	Effect of Micro-nutrient and soil .moisture regimes on growth and fruiting behavior of papaya (<i>Carica papaya</i> L.)	Dr. A.Chakraborty (Chaiman) Prof. N. Bhowmick Dr, P.S. Medda Dr. D. Mukhopadhyay Dr. S. Mandal	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs 8000 per month.
6.	Saidiksha Subba (H-2020-005-D)	5 th & 6 th	Growth, Yield and quality of Avocado (<i>Persia americana</i> Miller.) as effected by organic management practices in hilly region of WB	Prof. S. Gurung (Chaiman) Prof. N. Bhowmick Dr. M.P. Devi Dr. S. Mandal Dr. A. Ghosh	University Research Scholarship @ Rs. 18000 per month.
7.	Susan Subba (H-2020-010-D)	5 th & 6 th	Influence of rootstocks on shoot-tip grafting of Darjeeling mandarin (<i>Citrus reticulata</i> Blanco)	Dr. A.Chakraborty (Chaiman) Dr. B. Chakraborty Dr. S. Gurung Dr. M. Chakraborty Dr. S. Mandal	National Fellowship for Higher Education of ST Students funded by Government of India @ 3Rs. 1000 per month.
8.	Anisha Lohar (H-2021-007-D)	3 rd & 4 th	Morphological and molecular diversity assessment of mutant population of acid lime (<i>Citrus aurantifolia</i> Swingle)	Dr. A.Chakraborty (Chaiman) Prof. N. Bhowmick Dr. B. Chakraborty Dr. S. K. Roy Dr. N. Sahana Dr.S. Khalko	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ 8000 per month.
9.	Snehlata Lama (H-2021-009-D)	3 rd & 4 th	Studies on the effect of Integrated Nutrient Management on growth, yield and standardization of	Prof. S.Gurung (Chairman) Prof. N. Bhowmick Dr. B. Chakraborty Dr. M. P. Devi Dr. S. Mandal	In-Service.

			packing conditions for quality retention of Kiwi fruits (<i>Actinidia deliciosa</i>) during storage.		
10.	Swadesh Gurung (H-2021-010-D)	3 rd & 4 th	Characterization and assessment of nutritional and anti-nutritional properties of lesser-known fruit crops of Darjeeling Himalayas.	Prof. S. Gurung (Chairman) Prof. N. Bhowmick Dr. B.Chakraborty Prof. S. Chakravarty Dr. S. Mandal	University Research Scholarship @ Rs.18000 per month.
11.	Zigme Wangchuk Sherpa (H-2021-011-D)	3 rd & 4 th	Standardization of optimum dose of potassium for banana (<i>Musa spp.</i>) under <i>terai</i> zone of West Bengal	Dr. B. Chakraborty Dr. A. Chakraborty Dr. M.P. Devi Prof. P.S. Medda Prof. A.K. Sinha Prof. A. Ghosh	National Fellowship for Higher Education of ST Students funded by Government of India @Rs 31000 per month.
12.	Chinmoy Mandal (H-2022-005-D)	1 st	Not Yet Decided	Dr. P. Baraily (Chairman) Members not yet decided	University Research Scholarship @Rs 18000 per month.
13.	Dinabandhu Samanta (H-2022-006-D)	1 st	Not Yet Decided	Dr. B. Chakraborty (Chairman) Members not yet decided	University Research Scholarship @Rs. 18000 per month.
14.	Soumen Shit (H-2022-016-D)	1 st	Not Yet Decided	Prof. (Dr.) S. Gurung (Chairman) Members not yet decided	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs.8000 per month.
15.	Sudip Kumar Layek (H-2022-007-D)	1 st	Not Yet Decided	Prof. (Dr.) N. Bhowmick (Chairman) Members not yet decided	Junior Research Fellow, STI hub funded by Department of Science and Technology, GoI @ Rs. 33480 per month.
Ph.D in Post Harvest Technology/Management					
16.	Srujana Eda (H-2018-017-D)	9 th & 10 th	Evaluation of ambient temperature dryer for the dehydration of perishables.	Dr. P. K. Paul (Chairman) Dr. M. P. Devi, Dr. S. Das, Dr. S. Mandal Dr. N. Sahana	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs.8000 per month.
17.	Jinnamu Aresh (H-2019-001-	7 th & 8 th	Effect of blanching,	Prof. P. K. Paul (Chairman)	Swami Vivekananda Merit Cum Means

	D)		Chemical free treatments and surface moisture drying on qualities of minimal processed of garlic cloves	Dr. M. P. Devi Prof. N. Bhowmick Dr. R. Chatterjee Dr. S. Mandal	Scholarship funded by GoWB @ Rs. 8000 per month.
18.	Arpan Kabiraj (H-2021-014-D)	3 rd & 4 th	Standardization of maturity stage, ethephon application and packaging material for uniform red color development in paprika (<i>Capsicum annuum</i>)	Dr. M. P. Devi (Chairman) Dr. P. K. Paul Dr. R. Chatterjee Dr. A. Chakraborty Dr. A. Ghosh	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @ Rs. 8000 per month.
19.	Sweta Malakar (H-2021-015-D)	3 rd & 4 th	Standardization of Low Glycemic Index Composite Flour for Preparation of Cookies	Dr. P. K. Paul (Chairman) Dr. M.P. Devi Dr. H.S. Poddar Dr. S. Mandal Dr. A. Ghosh	University Research Scholarship @ Rs.18000 per month.
20.	Sanasam Angousana (H-2022-011-D)	1 st	Not Yet Decided	Dr. M. P. Devi (Chairman) Members not yet decided.	Swami Vivekananda Merit Cum Means Scholarship funded by GoWB @Rs 8000 per month.

5) RESEARCH PROGRAMME

(a) Departmental Research programme:

Sl. No	Title	Associated Teacher	Status
1..	Propagation techniques of Malay apple and water apple through cuttings	Prof. N. Bhowmick	Completed
2.	Effect of fruit bunch bagging in litchi	Dr. A. Chakraborty	Completed
3.	Effect of bio-stimulants on performance of strawberry cv. Festival under organic cultivation	Prof. N. Bhowmick	Completed
4.	Efficacy of microbial isolates in removing ethylene	Prof. P. K. Paul	Completed
5.	Quality assessment of dried chrysanthemum flower as affected by pre drying and storage condition	Dr. M. Preema Devi Prof. P. K. Paul	Completed
6.	Polyphenoloxidase inactivation in potato	Prof. P. K. Paul	Completed
7.	Characterization of acid lime	Prof. N. Bhowmick	Continuing
8.	Genetic diversity of banana	Dr. B. Chakraborty	Continuing
9.	Effect of pollination in strawberry	Dr. A. Chakraborty	Continuing
10.	Characterization of jackfruit germplasm	Prof. N. Bhowmick	Continuing
11.	Effect of vermi-wash & micro-nutrient on strawberry	Dr. A. Chakraborty	Continuing
12.	Effect of drying time & brewing condition in roselle	Dr. M. P. Devi	Continuing

13.	Standardization of harvesting time of strawberry for estimation of essential oil and volatile compounds	Dr. M. P. Devi	Continuing
14.	Evaluation of ambient temperature drier for dehydration of perishables	Prof. P. K. Paul	Continuing
15.	Studies on morpho-genetic variability of pummelo	Prof. N. Bhowmick	Continuing
16.	Tissue culture of strawberry	Dr. A. Chakraborty Dr. N. Bhowmick Dr. B. Chakraborty	Continuing
17.	Stress physiology of Darjeeling Mandarin	Dr. N. Bhowmick Dr. B. Chakraborty	Continuing
18.	Biotic and abiotic stress on strawberry	Dr. N. Bhowmick Dr. A. Chakraborty	Continuing
19.	Minimal processing of garlic	Prof. P. K. Paul Dr. M. P. Devi	Continuing
20.	Diversity assessment of mutant population of acid lime	Dr. A. Chakraborty	Continuing
21.	Studies on soil moisture regimes on papaya	Dr. A. Chakraborty	Continuing
22.	Organic management practices in avocado	Prof. Sarad Gurung	Continuing
23.	Studies on maturity stage and packaging in paprika	Dr. M. P. Devi	Continuing
24.	Effect of vermicompost with pineapple foliage waste biochar in pineapple under ultra-high-density planting	Dr. B. Chakraborty, Dr. N. Bhowmick, Prof. P. K. Paul, Dr. A. Chakraborty Dr. M. P. Devi	Continuing
25.	Collection, evaluation of paniyal (<i>Flacourtia jangomas</i>) gemplasms of North Bengal	Dr. B. Chakraborty	Continuing
26.	Finding out the optimum dose of K in banana for Terai zone of WB	Dr. B. Chakraborty	Continuing

(b) Project Handled

Sl. No.	Project Title	Sponsoring Authority	Associate Teacher
1.	Quality Control Laboratory	Ministry of Food Processing Industries, Govt of India	Prof. P. K. Paul- Principal Investigator (PI)
2.	Smart Curricula Delivery through Virtual Classrooms as Communication Linked Interface for Cultivating Knowledge and Online Courses	ICAR-National Agricultural Higher Education Project (NAHEP)-1C Innovation Grant (NAHEP/ IG-2014 /2019-20 dt 15.07. 2019 & Ref No.: UBKV /DR /1004 dt 07.11.2019)	Prof. P. K. Paul- Principal Investigator (PI) Prof. N. Bhowmick-Team Member
3.	STI Hub as a platform for socioeconomic development of target schedule caste communities of Terai and Dooars region of West Bengal	Department of Science & Technology, Govt of India, (Ref No. UBKV/DR/69 dt 11.02.2021)	Prof. P. K. Paul Prof. N. Bhowmick (Co-Investigators)
4.	Infrastructure development at Regional Research Stations of Uttar Banga Krsihi Viswavidyalaya for	Rashtriya Krishi Vikas Yojana (RKVY) (Ref No. UBKV/DR/337 dt	Prof. P. K. Paul- Principal Investigator (PI) Prof. S. Gurung- CoPI

	Production of Quality Planting Materials, Refinement of Technologies, and Human Resource Development to rejuvenate Mandarin Orange at Hills of WB	29.07.2022)	Prof. N. Bhowmick-Co-PI Dr. A. Chakraborty-Co-PI
5.	Field Evaluation of Trombay Mutants and Selection and Research Activities in Agriculture & Post Harvest Technology (Crop: Pineapple & Banana)	Bhaba Atomic Research Centre (BARC) & UBKV (Ref No. UBKV/DR/622 dt 15.12.2021)	Dr. N. Bhowmick Dr. A. Chakraborty (Associate scientists)
6.	Performance of Intercropping for Profitability in Juvenile Orchard & Standardization of Vegetative Propagation Methods of Jackfruit for Quality Planting Materials	Dept. of Science & Technology and Biotechnology, GoWB [Memo no. 163 (Sanc) /ST/P/S&T/ 1 G-8/2018 dt 14.02. 2019]	Prof. N. Bhowmick-Principal Investigator (PI)
7.	Development of high yielding gynodioecious line of papaya from the local cultivars	Institutional Project of UBKV (Ref No. UBKV/DR/559 dt. 09/11/2022)	Dr. A. Chakraborty-Principal Investigator (PI)
8.	Evaluation of Bio-efficacy of Plant Growth Promoters (Biozyme Tea, Biozyme G and Biozyme Power Plus L) in Tea and Paddy	Biostadt India Private Limited, Mumbai (Ref No.UBKV/DR/668 dt. 03/01/2022)	Dr. B. Chakraborty-Principal Investigator (PI)
9.	Evaluation of Bio-efficacy of Fantac Plus, Platina, Abda Drip, Abda Foliar, Abda Gold, Guard 5 and Impel on Plant Growth and Yield Parameters in Chilli, Tomato, Potato and Paddy	Coromandel International Limited, Secunderabad, (Ref No. UBKV/DR/797 dt. 18/02/2022)	Dr. B. Chakraborty-Principal Investigator (PI)
10.	Evaluation of Bio-efficacy of Growstim on Plant Growth and Yield of Chilli	Coromandel International Limited, Secunderabad (Ref No. UBKV/ DR/649 dt. 15/12/2022)	Dr. B. Chakraborty-Principal Investigator (PI)
11.	To evaluate the bio-efficacy and phytotoxicity of diurex (Diuron80%WP) against weed complex in pineapple	ADAMA India Private Limited (Ref. No. UBKV/DR/398 dt 02.09.2021)	Prof. N. Bhowmick-Co-Principal Investigator (Co-PI)

(c) Research findings

Water apple (from thesis)

Water apple [*Syzygium aqueum* (Brum. F. Alston)] and Malay apple [*Syzygium malaccense* (L.) Merr. L.M. Perry] are considered as important minor fruit crops under the Myrtaceae family. An experiment was conducted to assess the effect of various concentrations of IBA on different types of cuttings of Malay apple and water apple. IBA at 3000 ppm showed better response in terms of days taken for sprouting (8.66 days), number of leaves (54.23), sprouting (88.25 %), success (86.75) and survival rate (93.23 %) with least mortality rate (17.75 %) in Malay apple

and in water apple, IBA at 3000 ppm performed better in terms of length of longest root (25.86 cm), number of roots (23.70) and rooting per cent (91.75 %). Based on the findings, it was concluded that the sprouting and rooting characteristics of cuttings was found to be more effective in hardwood cuttings of Malay apple when treated with IBA at 3000 ppm.

Litchi (from thesis)

An experiment was conducted with 21 treatment combinations consisting of six different colour bags as bagging materials (transparent, yellow, green, blue, red, black colour with five percent perforations and one un-bagged control) and three cultivars viz. Calcuttia, Elaichi and China. All the bagging combinations were replicated four times and laid out in a factorial randomized block design. Among the cultivars selected for the study bagging exhibited promising results in terms of fruit drop control (27.71 %) in Elaichi with maximum fruit retention (64.70 %). Maximum fruit cracking (5.47 %) were recorded in open condition or un-bagged fruits whereas no fruit cracking was observed on most of the bagged fruits. Maximum fruit infestation (10.76 %) was recorded on un-bagged (control) and no infestation was obtained in bagged fruits. The maximum fruit weight (17.38 g), diameter (3.11 cm), length (3.78 cm), volume (16.52 ml), juice yield (7.73 ml with highest TSS (18.23°B), total sugar (16.31 %), reducing sugar (13.74), ascorbic acid (32.01 mg/100 g) and anthocyanin content (29.22 mg/100 g) were obtained when fruits were bagged with blue colour cellophane paper.

Strawberry (from thesis)

An experiment was conducted with strawberry cv. Festival in Randomized Block Design (RBD) with nine treatments (Sea weed extracts, Humic acid, Fulvic acid, Amino acid with different time of application) and three replications at the Directorate of Cinchona and Other Medicinal Plants, Mungpoo, Darjeeling, West Bengal. Foliar application of biostimulants were applied at 30DAP and 60 DAP. It was found that the application of foliar spray resulted maximum plant height (21.30cm), root length (22.07cm), flowering duration (152.33 days), yield (225.99 q/ha) with humic acid @ 4g/l applied at 30DAP and 60DAP.

Post harvest experiment on potato (from thesis)

In this study, polyphenol oxidase (PPO) was extracted from a potato var Jyoti by homogenization with potassium phosphate buffer followed by precipitation with 1.5 volumes of cold acetone. The inactivation of the browning enzyme in potatoes is mainly done by blanching. Different blanching temperatures (i.e., 60°C, 70°C, 80°C and steam) along with different ascorbic acid concentrations (i.e., 2mM, 8mM, 14mM, and 20mM) and different pH (i.e., 3, 4, 5, 6) of the solution in which potato cubes were blanched at different depths of the tissue. PPO enzyme show activity in the depth of 0.5cm and is more active in the depth of 2cm of the tissue when blanched at 90°C. Ascorbic acid shows less activation of PPO at 8mM concentration and high activation at 14mM and 20mM respectively due to diffusion of ascorbic acid in potato and heat weakens the effect of ascorbic acid. Inactivation done by pH is mainly effective as PPO enzyme inhibits as it moves from 4 pH to 5 pH.

Understanding of workers' behavior of food industry in Manipur (from thesis)

The study aimed to assess the personal and socio-economic characteristics of respondents, their knowledge, attitude, and practices related to food safety, and to provide suggestions for improving food safety measures of three districts in Manipur, focusing on six food industries. Key findings revealed a predominantly female workforce in the 21-30 age group with up to a 10th standard education. Most respondents had 11-20 years of experience in the food industry,

with limited formal training. They relied heavily on the internet for professional problem-solving, and their monthly expenditure ranged from Rs. 1,000-10,000, while total income was Rs.1,200-20,000 for 95% of respondents.

(d) DEVELOPMENTAL PROGRAMME

Sl. No.	Title	Associated Teacher	Status
1.	Development and maintenance of different pineapple varietal block	Dr. N. Bhowmick	Continuing
2.	Maintenance of Assam Lemon block and propagation practices for raising of saplings	Dr. N. Bhowmick	Continuing
3.	Maintenance of Litchi Varietal block and propagation practices for raising of saplings	Dr. N. Bhowmick	Continuing
4.	Collection of different banana germplasm and establishment of banana block	Dr. N. Bhowmick	Continuing
5.	Maintenance of guava varietal block and propagation practices for raising of saplings	Dr. N. Bhowmick	Continuing
6.	Maintenance of mango mother block	Dr. N. Bhowmick	Continuing
7.	Maintenance of mango varietal block	Dr. N. Bhowmick Dr. A. Chakraborty	Continuing
8.	Maintenance of mother block of litchi and guava for raising of saplings	Dr. N. Bhowmick Dr. A. Chakraborty	Continuing
9.	Maintenance of citrus rootstock, water apple orchard	Dr. M. P. Devi	Continuing
10.	Development and maintenance of jackfruit genotypes block	Dr. N. Bhowmick Dr. A. Chakraborty Dr. M. P. Devi	Completed

6) PUBLICATIONS

a) Research Article Published

1. **Bhowmick, N.,** Deb, P., Munsi, P., Ghosh, S. K. (2022). Phenological habit and performance of pineapple varieties in northern parts of West Bengal. *Indian Journal of Agricultural Sciences*, 92(5):567-571 [NAAS Rating:6.37]
2. Santhoshkumar G M , Bhowmick N, Chakraborty A, Dey A N, Ghosh A, Dutta P, Deb P, Chamling N, Sherpa N T and Senjam B D (2022) Effect of shoot pruning on growth, flowering and fruiting characteristics of different guava (*Psidium guajava* L.) cultivars. *International Journal of Fruit Science* **22**: 686-695. [NASS:7.53]
3. Santhoshkumar G M, Bhowmick N, Chakraborty A, Dey A N, Ghosh A and Dutta P (2022) Response of shoot pruning on growth, flowering, and fruiting characteristics of guava under sub-Himalayan Terai region of West Bengal. *Indian Journal of Ecology*, **49**(2): 502-507. [NASS:5.79]
4. Subba S and Bhowmick N (2022) Heat unit requirement and performances of litchi under Sub-Himalayan Terai region of West Bengal. *Journal of Horticultural Sciences* **17**(1): 124-130. [NASS:6.16]
5. Aresh J, Paul P K, Devi M P, Chaudhury A and Khalko S (2022) Microbial isolate used as delay ripening agent as postharvest management in banana. *The Pharma Innovation Journal* **11**(12): 1282-1286. [NASS:5.23]
6. Ghising K, Dey A N, Chakravarty S, Panda M R, Bhowmick N, and Mukhopadhyay, D (2022). Growth performance of teak (*Tectona grandis* Linn.) stump under different

- growing media in nursery. *Biological Forum – An International Journal*, **14**(3): 322-330. [NASS:5.11]
7. Subba, S., Bhowmick, N., Chakraborty, A., Medda, P.S., Dutta, P and Ghosh, A. (2022). Response of shoot girdling on fruiting characteristics of litchi cultivars grown under the sub-Himalayan Terai region of West Bengal. *International Journal of Economic Plants*, **9**(3):179-183 [4.37]
 8. Ghosh, A., Dey, K, Hassan, M. A., Bauri, F. K., Das, B. C., Bhowmick, N, Dey, A. N., Das, S., Sahu, P. K. (2022). Descriptors for morphological and biochemical characterization of Bhela (*Semecarpus anacardium* L.): An underutilized plant of tropics. *Genetic Resources and Crop Evolution*, **69**(7):2585-2604 [NAAS Rating: 7.88]
 9. Sherpa, Z. W., Chakraborty, A., Bhowmick, N., Dey, A. N., Sarkar, A. and Khalko, S. (2022). Comparative study on physico-chemical properties of F1 hybrids and its parent of guava (*Psidium guajava* L.) in terai agro-climatic zone of West Bengal. *Journal of Crop and Weed*, **18**(3):181-184[NAAS Rating: 5.46]
 10. Senjam, B. D., Bhowmick, N., Paul. P. K., Gurung, S., Dey, A. N. (2022). Effect of Gibberellic Acid on germination and growth responses of pummelo seedlings under eastern Himalayan Foothills. *Indian Journal of Hill Farming*, **35**:44-52 [NAAS Rating 5.04]
 11. Chakraborty A, Sherpa, N T, Subba S and Kumar V (2023) Mutagenic effect on seed germination, seedling growth and seedling survival of Bael (*Aegle marmelos* Correa). *International Journal of Minor Fruits, Medicinal and Aromatic Plants*. **9** (1): 73- 76. [NASS:5.10]
 12. Mashine, L., Jome Rime, Datta, S., Angousana, S., Guragai., A and Mariam A (2023) A review on chayote (*Schium edule* (Jacq.) Swatz): The viviparous cucurbit. *The Pharma Innovation Journal*. **12**(6):371-3775. [NASS:5.23]

b) Book Chapter

1. Sarkar, M., Chakraborty, B. and Srivastava, J.N. (2022). Key diseases of cucurbits and their management. pp. 153-203. In: Srivastava, J.N. and Singh, A.K. (eds.) Diseases of Horticultural Crops: Diagnosis and Management. Vo. 2: Vegetable Crops. Apple Academic Press Inc. 1265 Goldenrod Circle, NE, Palm Bay, FL 32905, USA ISBN: 978-1-77188-990-2 (ebk).
2. Bhowmick, N., Sharma, K. M., Parameshwar, P. (2023). *Carissa carandas* (Chapter-6). In: Himalayan Fruits and Berries: Bio-active compounds, uses and nutraceutical potential. Tarun Belwal, Indra D. Bhatt, Hari Prasad Devkota (Eds). Elsevier, Academic Press. ISBN: 978-0-323-85591-4
3. Devi, M. P., Chakraborty A, Hemanta L and Sarkar, A. In Exploring the prospective of some underexploited fruits and vegetables and their value addition. Shriyanshi Prakashan Agra
4. Jangyukala M, Laishram H, M Preema Devi, Rahman A M, Chakraborty A, Sarkar A, Shila H Devi, H Meronbala Devi and Thokchom R. Review on effective microorganisms for sustainable soil and plant health management. Prakhar Goonj Publication.

5. Singh, Y.S., Hemanta, L., Minerva, P., Devi, M. P., Devi, H. S. and Devi, H. M. (2022). Indigenous Organic Farming Practices. MKSES Publisher (India)
6. Devi, M. P., B. Baidya, A. Mandal Khan, S. Khalko and L. Hemanta (2022) Effect of Pre-Drying Fungicidal Treatment on Storage Life of Dried Spray Chrysanthemum. Today and Tomorrow Printers and Publishers (India)

7) EXTENSION PROGRAMME

(a) Farmers Advisory Services Regarding Agricultural Tips

Sl. No.	Name and address of the farmers	Problem addressed	Date	Associated Teacher
1.	Md. Abdul Hamid Ansari Silbanihat, Alipurduar Mob: 7679575303	Mango cultivation	18-07-2022	Dr. N. Bhowmick
2.	Kunja Barman Baburhat, Sonapur, Alipurduar. Mob: 7478888114	Ber crop protection management	23-12-2022	Prof. N. Bhowmick
3.	Anirul Hossain Dhandingguri, Cooch Behar Mob: 7551882954	BAU Ber Cultivation Practices	15-02-2023	Prof. N. Bhowmick

(b) Training/Demonstration Programme

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
1.	Expert for the judgement of exhibits (vegetable, fruits and flowers) in National Training cum Technology Week-2023	13.03.2023	UBKV	Cooch behar KVK (Ref nil dt 10.03.2023)	Prof. N. Bhowmick

8) OTHER ACTIVITIES:

(a) Members of different committee, Assignment, Additional responsibility

Sl No.	Committee/Assignment	Teacher associated
1.	Dean, Faculty of Horticulture, UBKV	Prof. P.K. Paul
2.	Registrar, UBKV	Prof. P.K. Paul
3.	Head, Dept of Pomology & Post Harvest Technology, UBKV	Prof. N. Bhowmick
4.	Member, Faculty Council, Faculty of Horticulture	Prof. N. Bhowmick
5.	Member, Post Graduate Committee	Prof. N. Bhowmick
6.	Expert Member, Monitoring Committee of Dakshin Dinajpur KVK, Malda KVK for a period of two years (Ref No. DEE/UBKV/20-21/74 dt 16.07.2020)	Prof. N. Bhowmick
7.	KVK Expert and Monitoring Committee for four years (Ref No. DEE/UBKV/22-23/186 dt 20.09.2022)	Prof. N. Bhowmick
8.	Convenor, Faculty Curriculum Committee (Ref No. 2161 dt 18.01.2018)	Prof. N. Bhowmick
9.	Member, Special Study & Coaching, Pundibari Campus Sub-Cell (Ref No. 388/D-F/Ag-UBKV dt 28.10.16)	Prof. N. Bhowmick

10.	Member, Editorial & Publishing Committee, <i>Farmers' Bulletin (Uttorer Krishikatha)</i> (Notification No. DEE/UBKV/13-14/58 dt 19.9.2013, Ref No. DEE/UBKV/18-19/24 dt 23.04.2018)	Prof. N. Bhowmick
11.	Member for Integrated Farming System Unit, UBKV (email from the Dean, Faculty of Horticulture dt 25.08.2021)	Prof. N. Bhowmick
12.	Member, Internal Complaint Committee (ICC) (Ref No. 1251/UBKV/Est dt 09.03.2022)	Prof. N. Bhowmick
13.	Member, Selection Committee for part time Guest Lecturer on 17.11.2022 (Ref No. 1044/8/UBKV/Est. (Appt-P.T)/F-18 dt 04.11.2022)	Prof. N. Bhowmick
14.	Member, Commercial Nursery (Ref. No. 43 /Hort/UBKV dt 17.05.2021)	Prof. N. Bhowmick
15.	Member, Venue Management Committee, 7 th Convocation (Ref No. 1217/UBKV/Est(Conv-120) dt 16.12.2022)	Prof. N. Bhowmick
16.	Jt-Convenor, Publication and Communication Sub-Committee in National Seminar (Ref. No. 141/UBKV/Hort dt. 29-04-2022)	Dr. B. Chakraborty
17.	Member, Refreshment Committee, 7 th Convocation (Ref. No. 1217/UBKV/Est.(Conv. 7) dt. 16-12-2023)	Dr. B. Chakraborty
18.	Member, M.Sc. Counselling Committee, 2023 (Ref. No. 777/EXAM/UBKV dt. 07-11-2022)	Dr. B. Chakraborty
19.	Accompanying Students Visit at UBKV (Students from Sarada Vidyamandir, Mathabhanga) (email from the Registrar, UBKV dt 13-02-2023)	Dr. B. Chakraborty
20.	Departmental Nominees student READY programme (email from the Head, PPHT Faculty of Horticulture dt 18-10-2022)	Dr. B. Chakraborty
21.	Member, Ph D Counselling Committee, 2023 (Ref. No. 792/EXAM/UBKV dt. 12-11-2022)	Dr. B. Chakraborty
22.	Reviewers of Answer Script of the Course No. FSC 503 (No.838/UBKV/Exam dt. 30-11-2022)	Dr. B. Chakraborty
23.	Member, Scrap Declaration and Disposal Committee (Ref. No. DF/UBKV(St.23)-260/22 dt. 05-08-2022)	Dr. B. Chakraborty
24.	Accompanying Students Visit at UBKV in India-Nepal Student Exchange Program (email from the Registrar, UBKV dt 13-02-2023)	Dr. B. Chakraborty
25.	Member, Press and Publicity Committee, 7 th Convocation (Ref No. 1217/UBKV/Est(Conv-120) dt 16.12.2022)	Dr. M. Preema Devi
26.	Member, Selection Committee for part time Guest Lecturer on 17.11.2022 (Ref No. 1044/8/UBKV/Est. (Appt-P.T)/F-18 dt 04.11.2022)	Dr. M. Preema Devi
27.	Member, Students Ready-Placement in Industries management Group (Ref No. 809/HORT/UBKV/ dt 21.09.2022)	Dr. M. Preema Devi

(b) Organizing Seminar/Symposium/Conference/Workshop

Sl. No.	Subject	Period	Venue	Organizer	Responsibility	Resource Person
1.	National Seminar(Hybrid mode: online and offline on Horticulture for Sustainable Development, Nutritional and livelihood security)	26-27.05. 2022	UBKV	ICAR-NAHEP IG, UBKV Unit	Chairman	Prof. P. K. Paul
					Co-organizing Secretary	Prof. N. Bhowmick
					Member, Organizing Committee	Dr. B. Chakraborty

2.	2 nd Biotic Science Congress (BioSCon, 22) and International Conference on <i>Recent Advances in Agricultural, Biological and Applied Sciences Research</i>	8th –9th August, 2022	Nowgong College, Assam, India	Society for Biotic & Environmental Research, Tripura	Advisory Members of International Steering Committee	Prof. N. Bhowmick
3.	6 th International Symposium on Minor Fruits, Medicinal & Aromatic Plants: Health, Wealth & Sustainability	24-26.11.2022	UBKV	Society of Minor Fruits, Medicinal & Aromatic Plants, COBACAS, NAHEP	Organizing Secretary	Prof. N. Bhowmick
4.	National Conference on Technological Advancement, Innovation and Entrepreneurship Development in Agriculture & Allied Sector	16-18.03.2023	UBKV	ICAR-NAHEP-IG, UBKV & Directorate of Extension Education, UBKV	Chairman	Prof. P. K. Paul
					Co-organizing Secretary	Prof. N. Bhowmick
5.	National Seminar on Climate Resilient and Input Efficient Agriculture for Food and Nutritional Security	19-01-2023	UBKV	Directorate of Research	Co-Organizing Secretary	Dr. B. Chakraborty

(c) Act as Resource person in Training/Meeting/Workshop/Interaction

	Subject	Period	Venue	Organizer	Resource Person
1.	Delivered invited lecture entitled <i>Protected Cultivation of Fruits</i> as resource person for <i>Skill Development Training Course on Protected Agriculture</i> under	08.02.2023	College of Agriculture, Chiplima, Odisha University of Agriculture & Technology, Sambalpur, Odisha	National Agricultural Higher Education Project (NAHEP), (Ref. No.: 154(14)/CAC dt 21.01.2023)	Prof. N. Bhowmick
2.	Delivered invited Radio Talk on <i>Uttarbanger Abohaoyay Strawberry Chas</i>	27-02-23	Radio Station, CPBU, Cooch Behar	Radio Station, CPBU, Cooch Behar	Dr. B. Chakraborty

3.	Delivered invited lecture in Skill Development Training on Organic Grower- on the topic "Organic Management Practices of Major Fruit Crops in Terai Zone of West Bengal"	31-01-2023	UBKV	MIDH Scheme, UBKV	Dr. B. Chakraborty
4.	Delivered invited lecture - on Production Technology of Major Fruit Crops of north Bengal Region	30-03-2023	UBKV	KVK, Cooch Behar Ref. No. KVK/COB/2022-23/864	Dr. B. Chakraborty
5.	Delivered invited lecture entitled <i>Drying of fruits and vegetables for value addition</i> as invited speaker on the National Seminar on Food Science and Technology	25.04.2022	NBU, W.B.	Department of Food Technology	Dr. M. Preema Devi

(d) Resource person in Seminar/Symposium/Conference/Workshop

Sl. No.	Subject	Period	Venue	Organizer	Responsibility	Resource Person
1.	6 th International Symposium on Minor Fruits, Medicinal & Aromatic Plants: Health, Wealth & Sustainability	24-26.11.2022	UBKV	Society of Minor Fruits, Medicinal & Aromatic Plants, COBACAS, NAHEP	Invited Lecture	Dr. A. Chakraborty
2.	National Seminar on Climate Resilient and Input efficient Agriculture for Food and Nutritional Security	19.01.2023	UBKV	UBKV	Judge for Poster Presentation (Theme: Natural Resource Management)	Prof. N. Bhowmick
3.	National Conference on Technological Advancement, Innovation and Entrepreneurship Development in Agriculture & Allied Sector	16-18.03.2023	UBKV	ICAR-NAHEP-IG, UBKV & Directorate of Extension Education, UBKV	Judge for Poster Presentation	Prof. N. Bhowmick

(e) Participation in Summer/Winter School/Training:

Sl. No.	Subject	Period	Venue	Organizer	Associated Teacher/Student
1.	Digital content creation and management	28-30.03.2023	UBKV	ICAR-NAARM	Prof. N. Bhowmick Dr. M. P. Devi
2.	Application of molecular marker in crop improvement	15-24.02.2023	UBKV	ICAR-NAE Project	Novin Chamling
3.	Application of molecular marker in crop improvement	15-24.02.2023	UBKV	ICAR-NAE Project	N.D. Apoorva

(f) Participation in Seminar/Symposium/Conferences/Workshop

Sl. No.	Subject	Period	Venue	Organizer	Title of the Paper presented	Associated Teacher/Students
1.	Horticulture for Sustainable Development, Nutritional and Livelihood Security	26.05.2022 to 27. 05. 2022	UBKV	NAHEP, Faculty of Horticulture, UBKV	Participated	Dr. A. Chakraborty Dr. B. Chakraborty
2.	6 th International Symposium on Minor Fruits, Medicinal & Aromatic Plants: Health, Wealth & Sustainability	24-26.11.2022	UBKV	Society of Minor Fruits, Medicinal & Aromatic Plants, COBACAS, NAHEP	A preliminary study on the paniyal [<i>Flacourtia jangomas</i> (Lour.) Raeusch] germplasms of northern part of West Bengal, India	Dr. B. Chakraborty
					Participated	Dr. M. P. Devi Dr. A. Chakraborty
3.	Workshop on Intellectual Property Rights in Agriculture	18-19.12.2022	UBKV	ICAR-NAE Project, UBKV	Participated	Prof N. Bhowmick
4.	Progressive Horticulture Conclave on Transforming Horticulture: Science into Technology	03.02. to 05.02. 2023	GBPUAT, Pantnagar	GBPUAT, Pantnagar & ISHRD, Uttarakhand, India	Effect of Foliar Application of Humic Acid and Seaweed Extract in Strawberry (<i>Fragaria × ananassa</i> Duch.)	Dr. B. Chakraborty
5.	National Conference on Blended Learning Ecosystem for Higher Education in Agriculture	21-23 March, 2023	NASC Complex, New Delhi	NAHEP-IG	Participated	Dr. B. Chakraborty

6.	National Conference on Technological Advancement, Innovation and Entrepreneurship Development in Agriculture and Allied Sectors	16.03 to 18.03. 2023	UBKV	Directorate of Research, UBKV	Attended	Prof. N. Bhowmick Dr. M. P. Devi Dr. A. Chakraborty
7.	International Conference on Advances in Plants, Microbes, and Agricultural Sciences	02-04.03.2023	North Bengal University, Siliguri	North Bengal University, Siliguri	Effect of salinity stress on growth and development of fruit crops (Oral)	Prof N. Bhowmick
Students						
8.	Citrus production is not enough! Awakeup call on Postharvest handling ,processing technology and value chain management	11 th April,2022	Webinar	NIFTEM, Kundki, Sonipat Haryana	Webinar	Arpan Kabiraj
9.	Horticulture for sustainable development, nutritional and livelihood security.	26/05/22 to 27/05/2022	UBKV	Faculty of Horticulture, UBKV	---	--
Name of students		Title of paper presented by the students				
Ms. Sweta Malakar		Effect of blending on quality of pummelo squash during storage.				
Mr. Vivek Kumar		Impact of integrated nutrient module on growth, yield and quality in cape gooseberry.				
Sanasum Angosana		Bio degradable packaging-alternative to plastic packaging				
Zigme Wangchuk Sherpa		Comparative study on flowering and fruiting characteristics of guava(Psidium guajava L)F1 hybrids and their parents under terai region of west bengal				
Anisha Lohar		Effect altitudinal variation on fruit morphology and 22hysic-chemical attributres				
Swadesh Gurung		Responses of girdling, etiolation and growth promoter on sprouting and rooting characteristicsOf Kiwi				
Novin Chamling		Role of rootstocks on abiotic stress management in fruit crops				

9) OTHER ACADEMIC ACTIVITIES:

a) External Examiner/Paper Setter/Moderator/Evaluation of Answer Script

Sl. No.	Name of the Course	University	Associate Teacher
1.	External Paper Setter for FSC 121: Tropical & Sub-tropical Fruits for End Term theory examination of B.Sc. (Hort.) Sem-II [Ref No F 44-56/2019-BAU (Exam)2796/Kanke dt 15.10.2022]	Birsa Agricultural University, Kanke, Ranchi, Jharkhand-834006	Prof. N. Bhowmick

2.	End term question paper for PhD. (Horticulture) course FSC-607: Biodiversity and Conservation of Fruit crops	College of Horticulture & Forestry, Pasighat, Central Agricultural University (No.CHF/CAU/ACAD/EXAM(Ph.D)/2021/1949 dt 23.08.2022)	Prof. N. Bhowmick
3.	End Term Question paper setter for B.Sc. (Hort.) Course AHT-111: Fundamentals of Horticulture	Bihar Agricultural University (Ref. No. 10/EE&EC/BAU, Sabour dt. 24-05-2022)	Dr. B. Chakraborty
4.	M.Sc. Fruit Science, Entrance Test Paper Setter	UBKV, File No. H302M dated 29-07-2022	Dr. B. Chakraborty
5..	M.Sc. (Hort.) Fruit Science End Term paper setter, FSC 503 (Propagation and Nursery Management of Fruit Crops)	Visva-Bharti VB/EXAM/REG/09/PG/HORT(Fruit)/Sem-I/29438/2022 Dt. 23-02-2023	Dr. B. Chakraborty
6.	External Paper Setter for UG course HORT 362: Management and value addition of fruits and vegetables	College of Agriculture, CAU, Kyrdemkulai (No.CAU/CAO/ACAD/2021-22/323 K dt 12.08.2022)	Dr. M. Preema Devi

b) Thesis Evaluation:

Sl. No	Name of Student	Thesis Title	Degree	University	Associated Teacher
1.	Kiran Patnaik (Adm No. 04FSC/Ph.D/16)	Yield and quality of pineapple (<i>Ananas comosus</i> L. Merr.) var. Simhachalam as affected by levels of fertigation and mulching	Ph.D.	OUAT (Ref No, 2705/CA dt 05.07.2022)	Prof. N. Bhowmick
2.	Tapas Sarkar	Trechnology for organic fruit production of mango cv. Himsagar grown in new alluvial zone of West Bengal	Ph.D.	BCKV (No. 818/DPG/FSC/D-1476n dt 03.11.2022)	Prof. N. Bhowmick
3.	Sathish B R (UHS18PGD273)	Effect of jeevamrutha on growth, yield and quality of guava (<i>Psidium guajava</i> L.) cv. L-49 under northern transition zone of Karnataka	Ph.D.	UHS (No. Dean PGS/UHSB/283/2022-23 dt 12.09.2022)	Prof. N. Bhowmick
4.	Dinabandhu Samanta (M-HFSC-00724-BAC-2020-21)	Development of embryo rescue technique in mango (<i>Mangifera indica</i> L.) cv. Amrapali	M.Sc.	Bihar Agricultural University (Ref No. 569 Dean/PGS/BAU, Sabour dt 17.10.2022)	Prof. N. Bhowmick

5.	Harika Marampudi 07H(M)-2020	Influence of different stages of fruit maturity on seed germination and seedling growth of citrus species	M.Sc.	CAU, Pasigaht [No. CHF/CAU/ACAD/TE/(PG)(H)/2017/5059 dt 01.02.2023]	Prof. N. Bhowmick
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c) Thesis Viva Voce

Sl. No	Name of Student	Topic	Degree	University	Associated Teacher
1	Kiran Patnaik (Adm No. 04FSC/Ph.D/16)	Yield and quality of pineapple (<i>Ananas comosus</i> L. Merr.) var. Simhachalam as affected by levels of fertigation and mulching	Ph.D.	OUAT (Letter No. 745/FSHT dt 03.11.2022)	Prof. N. Bhowmick
2	Dinabandhu Samanta (M-HFSC-00724-BAC-2020-21)	Development of embryo rescue technique in mango (<i>Mangifera indica</i> L.) cv. Amrapali	M.Sc.	Bihar Agricultural University (Ref No. 601 Dean/PGS/BAU, Sabour dt 20.10.2022)	Prof. N. Bhowmick

d) Member of the Advisory Committee (other Department):

Sl. No.	Name of Student	Course	Thesis Title	Department/ Discipline	Associated Teacher
1.	Suman Natta (A-2017-028-D)	Ph.D.	Evaluation and characterization of nutritional components of jackfruit (<i>Artocarpus heterophyllus</i>) for potential applications as functional food	Biochemistry	Prof N. Bhowmick
2.	Fouzia Bari (A-2017-005-D)	Ph.D.	Screening of different banana cultivars against banana scare beetle.	Agricultural Entomology	Prof N. Bhowmick
3.	Samima Sultana (H-2018-014-D)	Ph.D.	Impact of arecanut based cropping system on growth, yield of different subsidiary crops and carbon sequestration in north-eastern foot hills of WB	Plantation Crops and Processing	Prof. N. Bhowmick
4.	Sandeep Chetri (H-2018-015-D)	Ph.D.	Studies on the performance of four varieties of arecanut (<i>Areca catechu</i>) under organic multi-storied cropping system	Plantation Crops and Processing	Prof. N. Bhowmick

5.	Eggadi Ramesh (H-2018-008-D)	Ph.D.	Standardization of Integrated Nutrient Management and Application of Bio-Stimulants for Growth, Yield and Post Harvest Quality of Tomato	Vegetable Science	Dr. M. P. Devi
6.	Kheyali Ghosh (H-2018-010-D)	Ph.D.	Studies on growth, yield and shelf-life of okra (<i>Abelmoschus esculentus</i> (L.) Moench) as influenced by date of sowing, spacing and packages	Vegetable Science	Prof. P. K. Paul Dr. M. P. Devi
7.	Toko Yarin (H-2019-012-D)	Ph.D.	Effect of intercropping on growth and latex physiological parameters of different rubber(<i>Hevea brasiliensis</i> Mull, Arg.) clones at juvenile phase in WB	Plantation Crops and Processing	Prof. N. Bhowmick
8.	Md. Saheen Akhtar (A-2020-002-D)	Ph.D	Fruit production and processing potential in India with special reference to Mango	Agricultural Economics	Prof. N. Bhowmick
9.	Manish Roy (H-2021-04-D)	Ph.D.	Nutrient and anti-nutrient analysis of some important wild edible plants of forest dependent communities in Jaldapara National Park	Forestry	Prof. N. Bhowmick
10.	Dharmaraj Saren (A-2019-010-M)	M.Sc.	Studies on Cicadellid hopper diversity and their population behaviour associated with mango ecosystem in sub-Himalayan West Bengal	Agricultural Entomology	Prof. N. Bhowmick
11	Umrasong Mog (H-2020-09-M)	M.Sc.	Standardization of pre-germination treatment for germination and growth behavior of <i>Ailanthus grandis</i> Prain and <i>Sterculia alata</i> Roxb.	Forestry	Prof. N. Bhowmick
12	Trinayanee Sharma (H-2020-016-M)	M.Sc.	Studies on flowering and fruiting behaviour of cashew (<i>Anacardium occidentale</i> L.) in Terai region of West Bengal	Plantation Crops & Processing	Dr. N. Bhowmick
13	Mallikarjun Pargunde (H-2020-002-M)	M.Sc.	Influence of cultivars and organic nutrient sources on china aster (<i>Callistephus chinensis</i> L. Nees) in terai region of West Bengal	Floriculture, Medicinal and Aromatic Plants	Dr. B. Chakraborty

e) Reviewer of Journal

Sl.No.	Topic	Name of journal and year	Associated Teacher
1.	Evaluation of flowering and fruiting attributes in different mango cultivars in the Chhattisgarh plain zone under rainfed condition	The Journal of Crop and Weed (MS1587-15-01-22 04.04.2022)	Prof. N. Bhowmick
2.	Effect of different packaging material on storage and quality attributes of kiwi fruits (<i>Actinidia deliciosa</i> Planch)	Bhartiya Krishi Anusandhan Patrika of ARCC journals (06.05.2022)	Prof. N. Bhowmick
3.	Effect of foliar application of different levels of Gibberellic acid, 1-Naphthalene acetic acid and their combinations on Growth, Yield and Quality of Papaya (<i>Carica papaya</i> L.)	Indian Journal of Hill Farming (17.01.2023) Manuscript ID: 2022-0087	Prof. N. Bhowmick
4.	Lemon grass essential oil improves <i>Gladiolus 26randifloras</i> postharvest life by modulating water relations, microbial growth, biochemical activity, and gene expression"	Scientific Reports (25.01.2023)	Prof. N. Bhowmick
5.	Response on phenological, fruiting behaviour and growth characteristics of F1 candidates rootstock seedlings of Peach [<i>Prunus persica</i> (L.) Batsch] Cert. No. SDI/HQ/PR/Cert/89426/DRB	International Journal of Environment and Climate Change, dt. 21-07-2022	Dr. B. Chakraborty
6.	Effect of thermal indices on yield of garlic (<i>Allium sativum</i> L.) varieties under variable weather conditions of South Saurashtra Agro-climatic zone of Gujarat Cert. No. SDI/HQ/PR/Cert/92103/DRB	International Journal of Environment and Climate Change, dt. 21-07-2022	Dr. B. Chakraborty
7.	Induction of polyploids in acidlime [<i>Citrus aurnatifolia</i> (Christm.) Swingle] through colchicine treatment of <i>in vitro</i> derived shoot tip explants	Pant Breeding PLBR-22-OA-241-R1 (07-09-22)	Dr. B. Chakraborty
8.	Effect of varied nitrogen doses on strawberry during reproductive stage	Journal of Agriculture and Food Research JAFR-D-22-00563 (dt. 19-12-2022)	Dr. B. Chakraborty
9.	Alternate Bearing in Fruit Crops: Causes and Control Measures Cert. No. SDI/HQ/PR/Cert/95050/DRB	Asian Journal of Agricultural and Horticultural Research dt. 22-12-2022	Dr. B. Chakraborty
10.	The Trades Throughout Growth, Development and Quality Attributes of Ber (<i>Zizyphus Mauritiana</i> Lamk.) Fruits: A Review Cert. No. SDI/HQ/PR/Cert/97217/DRB	International Journal of Environment and Climate Change, dt. 14-03-2022	Dr. B. Chakraborty
11.	A review on adaptation of banana (<i>Musa</i> spp.) to cold in subtropics	Plant Breeding dt. 24-02-2023 PBLR-22-RA-326R1	Dr. B. Chakraborty

f) Evaluator of answer scripts

Sl No	Associated Teacher	Paper
1.	Dr. N. Bhowmick	PPT 102 (Ref No. 275/EXAM/UBKV dt 13.06.2022) PPT 102 (Ref No. 196/EXAM/UBKV dt 07.02.2023)
2.	Dr. B. Chakraborty	PPT-151 (Ref No. 887/EXAM/UBKV dt 13.12.2022)

9) ADDITIONAL RESPONSIBILITIES

a) Dr. N. Bhowmick

Member, Central Level Evaluation of Rural Agricultural Work Experience (RAWE) programme (Ref No. 1439/EXAM/UBKV dt 23.03.2023)

Member, Central Admission Committee for UG admission-2022-23 (Ref No. 574/EXAM/UBKV dt 22.08.2022)

b) Dr. Binayak Chakraborty

Editorial Board Member-Agricultural Letter-e-Magazine

10) LIFE MEMBERSHIP OF PROFESSIONAL SOCIETIES/JOURNALS

Sl. No.	Name of the Journal/Society	Address	Teacher
1.	Society for Advancement of Horticulture (The Horticultural Journal)	B.C.K.V., Mohanpur, Nadia, WB	Dr. N. Bhowmick
2.	Crop and Weed Science Society (Journal of Crop and Weed)	B.C.K.V., Mohanpur, Nadia, WB	Dr. N. Bhowmick Dr. A. Chakraborty
3.	Horticulture Society of India (Indian Journal of Horticulture)	ICAR-I.A.R.I., New Delhi	Dr. N. Bhowmick
4.	Society Promotion of Horticulture (Journal of Horticultural Science)	ICAR-I.I.H.R., Bengaluru	Dr. N. Bhowmick
5.	Indian Society for Plant Physiology (Indian Journal of Plant Physiology)	ICAR-I.A.R.I., New Delhi	Dr. N. Bhowmick
6.	Forum of Scientists, Engineers and Technologists (Thought)	Kolkata	Dr. N. Bhowmick
7.	Fruit Science Society of Bangladesh	Bangladesh Agricultural University, Mymensingh	Dr. N. Bhowmick
8.	Cooch Behar Association for Cultivation of Agricultural Sciences (Journal of Agricultural Technology)	U.B.K.V.	Dr. P.K.Paul Dr.N. Bhowmick Dr. M. P. Devi Dr. A. Chakraborty
9.	Association of Food Scientist and Technologist	CFTRI, Mysore	Dr. M. Preema Devi Dr. P.K.Paul
10.	Indian Society for Horticultural Research and Development,	KVK, Chaubattia, Uttarakhand (LM-150)	Dr. B. Chakraborty
11.	Indian Medicinal and Aromatic Plants Association of India	DMAPR, Anand, Gujarat	Dr. B. Chakraborty
12.	Life member 'Agricultural Letters'	e-Magazine, Raichur	Dr. B. Chakraborty
13.	Society for minor fruits medicinal and aromatic plants	B.C.K.V., Mohanpur, Nadia, WB	Prof. Nilesh Bhowmick Dr. M. Preema Devi

PHOTO GALLERY



Organization of 6th International Symposium on Minor Fruits, Medicinal & Aromatic Plants: Health, Wealth & Sustainability



Dr. Nilesh Bhowmick is with Dr. Satyanarayan Dash, Professor & Head, and Ms Kiran Patnaik, Dept. of Fruit Science & Horticultural Technology, OUAT after conduction of Ph.D. thesis Viva-Voce



Sudarshana Bhujel, M.Sc. student with Dr. Nilesh Bhowmick Chairman & Head during submission of thesis



Sri Sunil Barman, Field Assistant & Sri Manoranjan Sarkar, Field Worker visiting the fruiting of Sweet Orange cv. Mosambi at the Departmental Instructional Farm

Glimpses of Different Research Work performed by departmental students



Hand Pollination, Management and Harvest of Strawberries from the Departmental Field



Physico-chemical analysis of samples by the Post graduate students

Anisha Lohar (H-2021-007-D)



Snehalata Lama (H-2021-009-D)



Swadesh Gurung (H-2021-010-D)



Zigme Wangchuk Sherpa (H-2021-011-D)



Arpan Kabiraj (H-2021-014-D)



Sweta Malakar (H-2021-015-D)

