

# **Annual Report**

**2016-17**



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

## A. TEACHING AND NON- TEACHING STAFFS OF THE DEPARTMENT

### 1) TEACHING STAFF

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

b) **Present Strength :**

Sl. No.	Name	Designation	Date of joining	Contact number	Email ID	Remark
1.	Prof. S. K. Ghosh	Professor	30.01.1986	9475380846	skghoshhort@rediffmail.com	Retired on 30 <sup>th</sup> Nov, 2016
2.	Prof. P. K. Paul	Professor & Head	10.12.2001	8016425515	prodyut24@yahoo.com	Continuing
3.	Dr. C. P. Suresh	Reader	10.12.2001	9434126786	sureshcp123@yahoo.com	Left On Lien from 27.6.2013
4.	Mr. N. Bhowmick	Assistant Professor, (Stage-3)	27.11.2007	9433438982	nileshbhowmick@gmail.com	Continuing
5.	Dr. M. Preema Devi	Assistant Professor (Stage-1)	07.07.2014	7063102366	preema.horti@gmail.com	Continuing
6.	Dr. A. Chakraborty	Assistant Professor (Stage-1)	20.10.2014	9432842864	aditi.chatterjee10@gmail.com	Continuing

### 2) NON-TEACHING STAFF

Sl. No.	Name	Designation	Date of joining	Contact number	Remark
1.	Mr. Nitish Ch. Saha	Technical Assistant, Grade-I (Teaching)	03.7.1989	9475835338	Continuing
2.	Mr. Gopabandhu Saha	Junior Assistant	14.01.1997	9932903919	Transferred to Comptroller Section on 28.09.2016
3.	Mr. Dibyendu Das	Junior Store Keeper	29.10.2014	9733196969	Continuing
4.	Mr. Ananda Sarkar	Laboratory Attendant (R)	01.09.2008	8927242990	Continuing
5.	Mr. Sujoy Tudu	Junior Peon	03.11.2014	8116230011	Transferred to Instrumentation Engineer Section on 28.09.2016

### 3) STUDENT STRENGTH

a) **B.Sc. (Hort.) Hons:-**20 in each Academic Session under the Faculty of Horticulture

b) **M. Sc. Students:** 5 in each academic session

c) **Ph.D. Student:** 2 University Research Scholar in each academic session

#### 4) DEPARTMENTAL ACTIVITIES

##### (i) Teaching Programme

##### (a) Courses Offered in UG level

Sl. No.	Course No.	Course Title	Credit	Course Leader	Associated teachers
1.	PPT 101	Fundamentals of Horticulture	2+1	Mr. N. Bhowmick	Dr. A. Chakraborty Teachers of VSC & FMAP
2.	PPT 102	Plant Propagation & Nursery Management	1+1	Dr. A. Chakraborty	Prof. S. K. Ghosh Mr. N. Bhowmick
3.	PPT 151	Tropical and Sub-tropical Fruits I	1+1	Dr. A. Chakraborty	Dr. S. K. Ghosh Mr. N. Bhowmick
4.	PPT 151	Orchard and Estate Management (5 <sup>th</sup> Dean Committee)	1+1	Mr. N. Bhowmick	Dr. A. Chakraborty Dr. P. K. Paul
5.	PPT 152	Orchard Management	1+0	Mr. N. Bhowmick	Dr. A. Chakraborty
6.	PPT 152	Orchard Management (4 <sup>th</sup> Dean Committee, Year Back)	1+0	Dr. A. Chakraborty	Mr. N. Bhowmick
7.	PPT 152	Dry land horticulture	1+1	Dr. A. Chakraborty	N. Bhowmick Dr. P. K. Paul
8.	PPT 201	Temperate Fruits	1+1	Mr. N. Bhowmick	Prof. S. K. Ghosh Dr. A. Chakraborty
9.	PPT 251	Tropical and Sub-tropical Fruits II	1+1	Mr. N. Bhowmick	Dr. S. K. Ghosh Dr. A. Chakraborty
10.	PPT 252	Breeding of Fruits & Plantation Crops	2+1	Dr. A. Chakraborty	Mr. N. Bhowmick Dept. of PCP
11.	PPT 301	Post Harvest Management of Horticultural Crops	2+1	Dr. M. P. Devi	Dr. P. K. Paul
12.	PPT 302	Post Harvest Management & Value Addition of Fruits & Vegetables	1+1	Dr. P. K. Paul	Dr. M. P. Devi
13.	PPT 303	Fundamentals of Food Technology	1+1	Dr. P. K. Paul	Dr. M. P. Devi
14.	PCP 351	Processing of Horticultural Crops (Offered from Plantation Crops & Processing)	1+2	Teachers of PCP	Dr. M. Preema Devi Dr. P. K. Paul
15.	PCP 151	Growth and development of Horticultural Crops (Offered from Plantation Crops & Processing)	1+1	Teachers of PCP	Dr. A Chakraborty

##### (b) Courses Offered in PG level

Sl. No	Course No	Course Title	Credit	Course Leader	Associated teachers
1	PPT 501	Tropical & Sub-tropical Fruit Production-I	2+1	Dr. A. Chakraborty	N. Bhowmick
2	PPT-502	Tropical & Sub-tropical Fruit Production-II	2+1	N. Bhowmick	Dr. S. K. Ghosh Dr. A. Chakraborty Dr. M. P. Devi
3	PPT-503	Temperate Fruit Production Technology	2+1	Mr. N. Bhowmick	Prof. S. K. Ghosh Dr. A. Chakraborty
4	PPT 504	Breeding of Fruit Crops	2+1	Dr. A. Chakraborty	N. Bhowmick Dr. M. P. Devi
5	PPT-505	Post Harvest Physiology & Handling of Horticultural Crops	2+1	Dr. M. P. Devi	Dr. P. K. Paul
6	PPT 506	Principle of preservation of horticultural crops	2+1	Dr. P. K. Paul	Dr. M. P. Devi
7	PPT-507	Propagation, nursery management and biotechnology of fruit crops	2+1	Dr. A. Chakraborty	Prof. S. K. Ghosh Mr. N. Bhowmick
8	PPT- 601	Advances in Breeding in fruit crops	2+1	Dr. A. Chakraborty	Dr. S. K. Ghosh
9	PPT -607	Commercial fruit nursery	1+1	Dr. A. Chakraborty	Dr. S. K. Ghosh
10	PPT- 608	Advances in Post harvest physiology	2+0	Dr. P. K. Paul	Dr. M. P. Devi
11	PPT- 609	Advances in food preservation	2+0	Dr. M. P. Devi	Dr. P. K. Paul
12	PPT- 602	Advances in Production of Fruit Crops -I	2+1	Dr. A. Chakraborty	Dr. A. Chakraborty
13	PPT-603	Advances in Production of Fruit Crops –II	2+1	Dr. A. Chakraborty	Dr. A. Chakraborty

**(c) Students of the Department:**

**Master Degree**

Sl No	Name of the students	Semester	Thesis title	Advisory committee
1.	Priyam Chattopadhyay (H-2014-08-M)	Completed	Standardization of different value added products from jackfruit grown in Terai region of West Bengal and Evaluation of its storage stability	Prof. S.K.Ghosh (Chairman) Mr N. Bhowmick Dr S. Dutta Dr. S. Khalko
2.	Sukanya Misra (H-2014-13-M)	Completed	Effect of different propagation methods on growth behavior of Indian Olive ( <i>Elaeagnus floribundus</i> Blume.) under Himalayan Terai region of West Bengal.	Prof. S.K.Ghosh (Chairman) Dr. A. N. Dey Dr. P.S. Medda Dr. P. Choudhuri
3.	Abid Hayat (H-2015-2-M)	2 <sup>nd</sup> and 3 <sup>rd</sup> semester	Evaluation of quality and stability of lemon based blended nectar	Dr. M. Preema Devi (Chairman)

Sl No	Name of the students	Semester	Thesis title	Advisory committee
				Prof. P. K. Paul Dr. P. Medda Dr. S. Khalko
4.	Arghya Mani (H-2015-4-M)	2 <sup>nd</sup> and 3 <sup>rd</sup> semester	Studies on sodium substitution in mango pickle	Prof. P. K. Paul (Chairman) Dr. M. Preema Devi Dr. Somnath Mondal Dr. S. Khalko
5.	Sri Surya Venkatadevi Prasanna (H-2016-10-M)	1 <sup>st</sup> Semester	Effect of planting density and paclobutrazol on flowering and fruiting characteristics of Pineapple ( <i>Ananas comosus</i> L. Merr) cv. Mauritius.	Mr. Nilesh Bhowmick (Chairman) Dr. A. Chakraborty Prof. S. Maitra Dr. M. K. Debnath
6.	Jannila Praveena (H-2016-6-M)	1 <sup>st</sup> Semester	Role of pollen on fruit characteristics of selected guava genotype.	Dr. Aditi Chakraborty (Chairman) Mr. Nilesh Bhowmick Dr. A. N. Dey Dr. Arup Sarkar
7.	Bijayanka Baidya (H-2016-1-M)	1 <sup>st</sup> Semester	Effect of Pre-harvest spray on shelf life quality of Strawberry.	Prof. P. K. Paul (Chairman) Dr. A. Chakraborty Dr. M. Preema Devi Mrs. Shrilekha Das

### **Doctoral Degree**

Sl. No.	Name of the students	Semester	Advisory committee
1.	Miss Sukanya Misra (H-2016-5-D)	1 <sup>st</sup> Semester	Dr. Sharad Gurung (Chairman)
2.	Miss Antara Roy (H-2016-1-D)	Discontinued	

### **(ii) Research Programme**

#### **(a) Departmental Research programme:**

Sl. No.	Title	Associated Teacher	Status
1.	Nutritional management and pre-harvest treatments on growth, yield and quality of pineapple	Prof. S. K. Ghosh, Mr. N. Bhowmick	Continuing
2.	Value addition of jackfruit grown in Terai region of West Bengal and evaluation of its storage stability	Prof. S.K.Ghosh Mr. N. Bhowmik	Completed
3.	Studies on storage behavior of Indian Olive ( <i>Elaeocarpus floribundus</i> Blume)	Prof. S.K.Ghosh Dr. P. K. Paul	Completed
4.	Evaluation of quality and stability of lemon based blended nectar	Dr. M. Preema Devi Dr. P. K. Paul	Continuing

Sl. No.	Title	Associated Teacher	Status
5.	Studies on sodium substitution in pickle	Dr. P. K. Paul Dr. M. Preema Devi	Continuing
6.	Effect of Paclobutrazol in Guava var. L-49	Dr. A. Chakraborty Mr. N. Bhowmick	Continuing
7.	Effect of planting density and paclobutrazol on flowering and fruiting characteristics of Pineapple ( <i>Ananas comosus</i> L. Merr) cv. Mauritius.	Mr. N. Bhowmick Dr. A. Chakraborty	Continuing
8.	Role of pollen on fruit characteristics of selected guava genotype.	Dr. Aditi Chakraborty Mr. Nilesh Bhowmick	Continuing
9.	Effect of Pre-harvest spray on shelf life quality of Strawberry.	Prof. P. K. Paul Dr. A. Chakraborty	Continuing
10.	Allelopathic effect of litchi leaf extract	N. Bhowmick	Completed
11.	Effect of planting density & paclobutrazol on pineapple	N. Bhowmick	Continuing
12.	Evaluation of physico-chemical characteristics of Jalpai (Indian olive) and Pummelo	N. Bhowmick	Continuing
13.	Flowering and fruiting characteristics of mango and litchi	N. Bhowmick A. Chakraborty	Continuing

**(b) Project Handled**

Sl. No.	Project Title	Sponsoring Authority	Associate Teacher
1	Quality Control Laboratory	MoFPI, GOI	Prof. P. K. Paul-Principal Investigator (PI)
2	Survey, Documentation, Collection and Maintenance of Jackfruit ( <i>Artocarpus heterophyllus</i> Lam.) Germplasm Grown Under the Northern Parts of West Bengal	Intuitional Project (UBKV)	Mr. N. Bhowmick- PI Dr. A. Chakraborty-Co-PI Dr. M. Preema Devi-Co-PI

**(c) Research findings**

**Assam Lemon flowering**

Different combinations of organic manure (Vermicompost), inorganic fertilizer, bio-fertilizer (*Azotobacter*), mycorrhiza (VAM) and their interaction were evaluated to study the effect on plant reproductive behaviour on 9 year old lemon plants. The investigation revealed that the reproductive parameters viz. number of flowers per plant, fruit set percentage and fruit yield were found highest in lightly pruned plants feed with 75% RDF + Vermicompost + *Azotobacter* + Vesicular Arbuscular Mycorrhiza at Ambe, Mrig and Hasth bahar respectively. Among the three season of cropping Ambe bahar recorded the best result in respect to yield followed by Mrig and Hasth bahar

### **Pruning of Assam Lemon**

The investigation revealed that all the vegetative parameters *viz.* trunk girth (32.74cm, 33.26cm and 33.13cm), canopy volume (85.22 m<sup>3</sup>, 100.03 m<sup>3</sup> and 125.84 m<sup>3</sup>), number of laterals per primary shoot (9.53, 11.87 and 10.80) and leaf chlorophyll content (1.45%, 1.94% and 2.56%) was recorded best in highest level of pruning with 75% RDF + Vermicompost + Azotobacter + Vesicular Arbuscular Mycorrhiza at 6<sup>th</sup>, 12<sup>th</sup> and 18<sup>th</sup> month after pruning. Among the three season of cropping Ambebahar recorded the best result in respect to yield (total number of fruits/plant) followed by Mrig and Hastbahar.

### **Post harvest treatments on storage life of Ber**

The coating of ber fruits with Chitosan, Guar gum, Gum tragacanth resulted in reduced loss in fruit weight and higher level of ascorbic acid content, TSS, acidity, total sugar, reducing sugar as compared to the fruits under control. The most effective coating was Guar gum (2%) that extended the shelf life of ber up to 16 days.

### **Nutritive and Mineral value in Ripe Fruits of Indian Hog Plum**

The physico-chemical constituents at the stages of maturity of Indian hog plum fruits from four different sources were evaluated and parameters like fruit weight (35.69 g), specific gravity (1.27), peel/ pulp ratio (0.65), seed weight (13.53 g), TSS (8.12<sup>o</sup>brix), titrable acidity (0.49%), total sugar (6.56%), reducing sugar (4.42%), nonreducing sugar (2.14%), ascorbic acid (22.10 mg/100g pulp), totalphenolics (29.19 mg/100g pulp), moisture (78.55%), ash (4.79%), crude fibre (4.09%), food energy value (168.76 kcal/g), calcium (0.84%), iron (1.87%), potassium (1.78%) and sodium (1.51%) etc. were recorded highest in fruits collected from Jalpaiguri district of West Bengal.

### **Postharvest Treatments on Storage Life of Guava**

Fully mature but green guava fruits were treated with different edible coating materials, chemicals, powder formulation of bio-control agent, hot water, and control. On the rainy and winter season, retention percent was found maximum with paraffin liquid 10%. Physiological loss in weight was minimum with the guar gum 1% in rainy season, paraffin 5% and gum acacia 10% in winter season. Regarding other horticultural traits like total soluble solids, ascorbic acid, total sugar, reducing sugar, non-reducing sugar content etc. were recorded maximum with gum acacia 10% in rainy season and winter.

### **Seed germination and seedling behaviour of Indian hog-plum (*Spondias pinnata*)**

Seeds of Indian Hog-plum were pre-soaked in water, thio-urea, KNO<sub>3</sub> with different concentration and pre-soaking duration. Seeds treated with 0.01 M KNO<sub>3</sub> for 24 hours provided maximum germination percentage (66%), highest seedling length (387.4 mm), vigour index (25477.1) and biomass (6.5 g plant<sup>-1</sup>).

### **Allelopathic effect of litchi leaf**

The allelopathic effect of aqueous solution of litchi (*Litchi chinensis*) leaf extract on germination of pea (*Pisum sativum*) and lafa (*Malva verticillata*) seeds were evaluated Both the seeds of pea and lafa were treated with litchi dried leaf aqueous extract solution

(T<sub>1</sub>: 0%, T<sub>2</sub>: 2%, T<sub>3</sub>: 5%, T<sub>4</sub>: 10%, and T<sub>5</sub> 15%). The germination percentage and radical growth behaviour of both pea and lafa seeds were recorded in laboratory under ambient condition. Seed germination of pea and lafa was recorded maximum (100% & 99.50%, respectively) with T<sub>1</sub>, whereas, germination was recorded lowest (15.75% & 10.00 %, respectively) with T<sub>5</sub> expressing a strong allelopathic germination inhibitory effect of litchi.

### **Indian Olive**

Indian olive (*Elaeocarpus floribundus* Blume), also known as *jalpai*, belonging to the family Elaeocarpaceae is one of the minor fruit crop having high nutritional value. It is a highly palatable fruit in northern parts of West Bengal. Fruits contain 0.69% protein, carbohydrates 19.5%, mineral matter 0.59%. The fruits are used in dysentery, diarrhoea, rheumatism and as an antidote for poison (De and Parikh, 1985). Perishability is one the main issues in post-harvest handling and marketing of fresh fruits. In the case of jalpai fruit, its short shelf life (6 to 7 days) limits its marketability. Numerous technologies have been developed as a means to extend their shelf-life and eating quality for various fruits and vegetables, among them, edible coatings which is applied on many fruits to control moisture transfer, gas exchange or oxidation processes is very much important. Edible coatings can also provide an additional protective coating to fruits and can also give the same effect as modified atmosphere storage in modifying internal gas composition (Dhall *et al.*, 2012). Therefore, considering the above mention points, a research was formulated using different coating materials like guar gum, calcium chloride, paraffin liquid, gum tragacanth and chitosan. Present work was carried out with two objectives, these are, to study the effect of different treatments on the storage life of Indian Olive and to study the physio-chemical changes of Indian olive during storage. From the experimental result it was found that lowest physiological weight loss and spoilage was observed in coated fruits, also an increase in shelf life (15 days) and higher quality parameters were noted as compare to fruits under control. It was also observed that colour change in uncoated fruits was drastic, which is not preferred by the consumer. However, colour change was slow and steady in fruits treated with edible coatings. Thus, it could be concluded that all coatings gave better result than the fruits under control, among the different coatings chitosan and guar gum gave best result.

### **Jackfruit**

Worldwide there is a heavy reliance of population on rice, wheat and maize to meet our food requirement of the mankind. These three crops altogether meet more than 50% of the total dietary energy requirements across the globe. There are many other crops which can be grow in marginal soil with low inputs. Jackfruit is one of them (Singh *et.al*, 2015). India accounts for an area of 102 thousand ha, with an annual production of 1436 thousand ton and 11.40 t/ha productivity. India is the second largest producer of fruits and vegetables after China, but 70% of fruit and vegetable output is wasted, accounting for 40 % of the total cost. Jackfruit is a very nutritious fruit and is rich in vitamin A, B complex and iron. Apart from the above 100g of jackfruit pulp contain- 77.2% moisture, 18g carbohydrate, 1.9g protein, 0.1g fat, 540IU Vitamin A. Due to presence of high moisture content, the fruit is very perishable in nature. Preservation by means of dehydration helps to reduce water by immersion of concentrated aqueous solution of sugar/salt (Suttar and



Suttar, 2013). Jackfruit is a very heavy and bulky fruit and hence the transportation is not very easy and is costly as well. Due to presence of strong aroma some time it is not preferred by the consumer. Preparation of leather from ripe fruit, have a influential role on improving shelf life, reducing packaging cost, enhancing appearance, encapsulate original flavor and maintaining nutritional value. To conduct the experiment, fresh jackfruit at two different maturity level (immature and ripe) were collected from the Instructional Farm of Uttar Banga Krishi Viswavidyalaya, during the year 2015 and immediately brought to the laboratory of the Department of Pomology and Post Harvest Technology, for storage after necessary treatments. For the preparation of osmotically dehydrated jackfruit cube, independent variables were Salt concentration (1-15%), Time (30.00- 240.00min) and  $\text{Ca(OH)}_2$  concentration(0 and 1%), and the response variable were Water loss(%), Mass reduction(%), Change in dry matter content (%), Water activity and Rehydration ratio. For this experiment the highest amount of water loss (90.54%) was observed in Run 13, Mass reduction was highest (91.61%) in Run 18, highest amount of Change in dry matter (37.26 %) was found in Run 19 and Rehydration ratio (3.77) was in Run 10. The lowest amount of Water activity (0.724  $a_w$ ), which is essential for enhancing post harvest period of the product, was observed in Run 15. For the evaluation of storage study of immature jackfruit cube, Water activity, Rehydration ratio and Total plate count were estimated as experimental parameter and was recorded for 6 month at 1 month interval. In case of mix fruit leather, independent variables were mango pulp, jackfruit pulp and aonla pulp, and response variables were TSS( $^{\circ}\text{B}$ ), RS(%), NRS(%), Acidity(%), Ascorbic acid (mg/ 100g), Water activity and Hardness (gf). For the treatments, highest amount of TSS(22.86  $^{\circ}\text{B}$ ) was observed in Run 6, optimum RS(4.75%) was in Run 7, NRS was highest(14.89) in Run 2, acidity (1.71) in Run 1, ascorbic acid content(38.05 mg/100 g) was in Run 3 and hardness (177.4) was found to be highest in Run 10. The least amount of water activity(0.773) was found in Run 1. For the evaluation of the storage study of mix fruit leather, Water activity, Ascorbic acid content and Total plate count was recorded for 6 month at 1 month interval.

**(iii) Developmental Programme:**

Sl. No.	Title	Associated Teacher	Status
1.	Development of pineapple varietal block	N. Bhowmick	Continuing
2.	Collection and maintenance of different strawberry cultivars	N. Bhowmick Dr. A. Chakraborty	Continuing
3.	Establishment of litchi orchard var Bedana	N. Bhowmick Dr. M. Preema Devi	Continuing
4.	Maintenance of mother block of litchi	N. Bhowmick Dr. A. Chakraborty	Continuing
5.	Maintenance of citrus rootstock, water apple orchard	Dr. M. Preema Devi	Continuing

## 5) PUBLICATIONS

### (a) Research Paper

- 1) Dey, K., Ghosh, A., Dey, A. N., Bhowmick, N., and Bauri, F. K. (2016). Studies on seed germination and seedling behavior of Indian Hog Plum (*Spondias pinnata* Linn.) in response to different pre-sowing treatments. *Seed Science and Technology* 44:642-646, doi: 10.15258/sst.2016. ISSN:0251-0952 [NAAS Rating -6.52]
- 2) Dutta, P., Bhowmick, N., Khalko, S., Ghosh, A., Ghosh, S. K.(2017). Post harvest treatments on storage life of guava (*Psidium guajava* L.) in Himalayan Terai region of West Bengal, India. *International Journal of Current Microbiology and Applied Sciences*, 6(3):1831-1842, ISSN 2319-7692, [NAAS Rating -5.38]
- 3) Dey, K., Ghosh, A., Dey, A. N., Bhowmick, N., and Bauri, F. K. (2016). Evaluation of Nutritive and Mineral value in ripe fruits of Indian Hog Plum (*Spondias pinnata* Linn.) from four different location of northern parts of West Bengal. *Vegetos-An International Journal of Plant Research*, 29(4): 25-32 (doi: 10.4172/2229-4473.1000167) ISSN: 0970-4078. [NAAS Rating -5.00]
- 4) Dutta, P., Dey, K., Ghosh, A., Bhowmick, N., Ghosh, A. (2016). Effect of edible coatings for enhancing shelf-life and quality in Ber (*Zizyphus mauritiana* Lamk.). *Journal of Applied and Natural Science*, 8(3):1421-1426. ISSN: 0974-9411 [NAAS Rating - 4.84]
- 5) Bhowmick, N., Mani, A. Hayat, A. (2016). Allelopathic effect of litchi leaf extract on seed germination of pea and laffa. *Journal of Agricultural Engineering and Food Technology*, 3(3):233-235. ISSN:2350-0085 [Not Available]
- 6) Ghosh, A., Dey, K., Bhowmick, N., Medda, P.S., Ghosh, S. K. (2016). Impact of different pruning intensity and nutrient management on growth and yield of Lemon cv. Assam Lemon (*Citrus limon* Burm.). *Vegetos-An International Journal of Plant Research*, 29(1):25-32 (doi. 10.5958/2229-1473.2016.00007.0) ISSN: 0970-4078 [NAAS Rating -5.00]
- 7) Singh, D. K., Rudra, B. C., Bhowmick, N., Gangopadhyay, P. K. (2016). Evaluation of Suranjana variety of turmeric for increasing productivity among farmers of Malda district of West Bengal. *Journal of Inter academica*, 20(4):437-441. ISSN- 0971-9016, [NAAS Rating -3.96]
- 8) P., Suresh Kumar, Sangeetha A., M. Preema Devi and Kumari K U. (2016). Ethnic food-Indian perspective, trends, challenges, market share and growyh. *Beverage and Food World*. 43(9): 37-39 [Not Available]
- 9) P., Suresh Kumar, Kumari K. U., M. Preema Devi, Choudhary V. K. and Sangeetha A. (2017). Bamboo shoot as a source of nutraceuticals and bioactive compounds: A review. *Indian Journal of Natural Products and Resources*. 8(1): 32-46 [Not Available]
- 10) Tanya L. Swer, Komal Chauhan, Prodyut K. Paul, C. Mukhim (2016) Evaluation of enzyme treatment conditions on extraction of anthocyanins from *Prunus nepalensis* L. *International Journal of Biological Macromolecules* 92: 867–871 [NAAS Rating -9.14]

**(b) Edited Volume**

- Rachna Sehrawat, Khursheed A. Khan, Megh R. Goyal, **Prodyut K. Paul** (Eds.) (2017) *Technological Interventions in the Processing of Fruits and Vegetables*. CRC Press, ISBN 9781771885867

**(c) Book Chapter**

- **Prodyut K. Paul (2017)**. Health Promoting Compounds: Fruits and Vegetables. In: *Technological Interventions in the Processing of Fruits and Vegetables*, Sehrawat R. et al.(Eds). CRC Press, ISBN 9781771885867.
- Somnath Mandal, **Prodyut K. Paul** and Nandita Sahana (2017). **Extraction and Concentration Methods for Bio-Actives Components in Fruits and Vegetables**. In: *Technological Interventions in the Processing of Fruits and Vegetables*, Sehrawat R. et al.(Eds). CRC Press, ISBN 9781771885867.

**(d) Practical Manual**

- Practical Manual on “Fundamentals of Horticulture” for undergraduate student

**(e) Leaflets**

- Prepared and edited Bengali Leaflet on **Jackfruit** by N. Bhowmick (Published on 14.07.2016 during Jackfruit Exhibition)

**6) EXTENSION PROGRAMME**

**(a) Radio Talk**

Sl. No.	Topic	Resource Person
1	Live phone in programme on All India Radio, Siliguri broadcasted on 30.6.2016 on the topic of “Kala chash ke lavjanak korte” (How to make the banana cultivation profitable) (vide Ref no nil dt 20.5.2016)	Mr. N. Bhowmick
2	“ <b>Strawberry Chash-Alochana in Grame Gange Programme</b> ” recording programme on 17.03.17 at 12.30 pm to be broadcasted over All India Radio programme, Siliguri, W.B on 18.03.17 at 7.00 pm.	Dr. A Chakraborty

**(b) Training/Demonstration Programme**

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
1	Farmers’ training Programme	21.01.2017	United Club cum Library. Sahebpota, Alipurduar	O/O Assistant Director of Agriculture, Alipurduar-I Block, Dept. of Agriculture, GoWB (Memo No. 50 dt 19.01.2017)	Mr. N. Bhowmick

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
2	Farmers Scientist Stake holders Session in Awareness cum Farmers Training Programme on Development of Spices, Medicinal and Aromatic Plants and its Industries in North Bengal	27.8.2016 - 28.8.2016	UBKV	MIDH, UBKV (UBKV/MIDH-20(2) dt 24.8.2016)	Mr. N. Bhowmick
3	Women Farmers' training Program on Improved cultivation technique of Banana, Under Capacity building and food security group	27.12.2016	Conference hall of Pundibari G.P.	Under Capacity building and food security group, ADA.,Cooch Behar-II Block ((Memo No. ATMA 93 dt 23.12.2016)	Dr. A Chakraborty

**(c) Farmers Advisory Services Regarding Agricultural Tips**

Sl. No.	Name and address of the farmers	Problem addressed	Date	Associated Teacher
1	Madhuram Debnath, Vill+PO-Taatapara, PS-Shamuktala, Dist-Alipurduar, Mob-9733349969	Fertilizer & sucker management of Banana	05.04.2016	Mr. N. Bhowmick
2	Jogesh Roy, Khagrabari, Cooch Behar, Mob-9749376742	Fruit drop of mango	21.04.2016	Mr. N. Bhowmick
3	Brajen Kr. Bhadra, Vill+PO-Jateswar, Dist-Alipurduar, Mob-9474627115	Bacterial canker of guava	31.05.2016	Mr. N. Bhowmick
4	Dhillon Mandal, Vill+PO-Shalkumar Haat, Dist-Alipurduar	Banana cultivation	15.06.2016	Mr. N. Bhowmick
5	Hitendra Barman, Vill-Bajrapur, PO-Harir Hat, PS-Boxirhaat, Dist-Cooch Behar, Mob-9609812865	Improved ber cultivation	04.07.2016	Mr. N. Bhowmick
6	Jayanta Barman, Vill-Kharija Bania Daha, PO-Nandina, Abutara, Dinhata, Dist-Cooch Behar, Mob-9800589259	Disease, pest management of lime/lemon and INM of ber	22.08.2016	Mr. N. Bhowmick
7	Adel Ali, Vill+PO-Bramha, Kosaldanga, Akrar Haat (Bandar), Cooch Behar, Mobile no. 9851168430	Citrus stem borer and improved production of lime/lemon	04.10.2016	Mr. N. Bhowmick

Sl. No.	Name and address of the farmers	Problem addressed	Date	Associated Teacher
8	Mahesh Basumata, Vill-sidhabari Mission (Near Salkumar Haat), Dist-Alipurduar, Mob-7548029948/9735015968	Visited Mandarin orange field and provided farmer agricultural advisory tips regarding nutrient management	17.12.2016	Mr. N. Bhowmick
9	Arjun Sharma, Vill-Putimari Boxirboss, Cooch Behar, Mob-9091489519, 7583996781	Visited and provided advisory tips regarding disease management and improved production technology of banana	21.01.2017	Mr. N. Bhowmick
10	Milan Pradhan, Vill-Bhandijelas, PO-Harir Haat, PS-Boxirhaat, Dist-Cooch Behar, Pin-736159, Mobile-9800252147	Improved ber cultivation	24.01.2017	Mr. N. Bhowmick
11	Prafulla Ch. Roy, Jogendranagar, Palashbari, Alipurduar, Mob-9002247844	Improved mango cultivation	24.01.2017	Mr. N. Bhowmick
12	Parimal Barman, S/O-Sri Alok Chand Barman, Vill-Bagh Bhandar Sukhan Dighi, PO-Sutar Para, PS-Ghoksadanga, Dist-Cooch Behar-736171, Mob-9474331445/9126288153	Banana cultivation	02.02.2017	Mr. N. Bhowmick
13	Ramananda Raha, Vill-Ashrampara, PO-Baroshoulmari, PS-Ghoksadanga, Dist-Cooch Behar, Mob-8670820314/9832441806	Lime/lemon cultivation	28.2.2017	Mr. N. Bhowmick
14	Md. M Kamal, Vill+PO-Pundibari, Cooch Behar	Banana, Papaya and Strawberry cultivation	30.1.17	Dr. A Chakraborty
15	Profulla Ch. Roy, Vill+PO-Hogandra Nagar, Alipurduar, Mob-9002247844	Papaya and strawberry	31.1.17 regarding	Dr. A Chakraborty
17	Narayan Sutradhar, Falakata, Mob-9775453301	Papaya and strawberry	10.12.16 to 10.02.17	Dr. A Chakraborty

## 7) OTHER ACTIVITIES:

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

Sl. No.	Committee/Assignment	Teacher associated
1.	Head of the Department	Dr. P. K. Paul
2.	Member, Academic Council, UBKV	Dr. P. K. Paul
3.	Member, Accreditation Committee of the University	Dr. P. K. Paul

Sl. No.	Committee/Assignment	Teacher associated
4.	Member, Faculty Council, Faculty of Horticulture (Ref No. 1126/UBKV/Est.(F.C.-Hort.)/31 dt 20.11.2015)	Dr. P. K. Paul & Mr. N. Bhowmick
5.	Convener of Accommodation committee on 5 <sup>th</sup> convocation of UBKV[Ref No. 1210/UBKV/ Est.(Conv.-120) dt 25.11.2016]	Dr. P. K. Paul
6.	Provost, M. N. Saha Hall (Ref No. 210/UBKV/Est. (Trans.)/T/NT-40 dt 30.5.16 & Ref No. 2129/UBKV/Est. (Trans.)/T/NT-40 dt 30.3.17)	Mr. N. Bhowmick
7.	Member, Accreditation Committee of the University (Convener, College of Horticulture, Information of Individual Colleges) [vide Ref No. 656/UBKV/Est. (Acre.)-170 dt 01.09,2016]	Mr. N. Bhowmick
8.	Member, Special Study & Coaching, Pundibari Campus Sub-Cell (Ref No. 388/D-F/Ag-UBKV dt 28.10.16)	Mr. N. Bhowmick
9.	Member, Editorial & Publishing Committee, <i>Uttorer Krishikatha</i> (Vide Notification No. DEE/UBKV/13-14/58 dt 19.9.2013)	Mr. N. Bhowmick
10.	Member, Central Level Committee for Presentation of Teacher – Seminar, Symposium, Training programme (Ref No. 183-D-F/Ag- UBKV)	Mr. N. Bhowmick
11.	Member, Task force for Women Empowerment, Nutritional Security and Homestead Intervention of University Adopted Village (Vill-Uttar Chokoakheti, Dist-Alipurduar) [Ref No. VC/UBKV-601 dt 16.02.2015]	Mr. N. Bhowmick
12.	Member, Anti Ragging Squad (Ref No. 483/UBKV/Est/167(Anti/rag) dt 29.7.2016)	Mr. N. Bhowmick
13.	Member, Hostel Management Committee (Ref No. Admn/UBKV/243 dt 14.6.2013)	Mr. N. Bhowmick
14.	Member of Placement in Industries for Student READY programme 2016-17 for fourth year UG students of Horticulture of the Faculty (Ref No. UBKV/Hort/1096/2016-17)	Dr. M. Preema Devi
15.	Member of UG Admission Committee (Ref No. 41/UBKV/Exam/Admission)	Dr. M. Preema Devi
16.	Member of Anti Ragging Squad (Ref No. 483/UBKV/Est.167)	Dr. M. Preema Devi
17.	Member of Press and Publicity committee on 5 <sup>th</sup> convocation of UBKV[Ref No. 1210/UBKV/ Est.(Conv.-120) dt 25.11.2016]	Dr. M. Preema Devi
18.	Member of Internal Complaints Committee (ICC) (Ref No. 475, dt. 22.04.16)	Dr. A Chakraborty
19.	Member of Enquiry Committee to resolve the missing mess money (Ref No. UBKV/DSW-349(4)/2017., Dt. 22.03.17)	Dr. A Chakraborty
20.	Member, Task force for Women Empowerment, Nutritional Security and Homestead Intervention of University Adopted Village (Vill-Uttar Chokoakheti, Dist-Alipurduar) [Ref No. VC/UBKV-601 dt 16.02.2015]	Dr. A Chakraborty
21.	Member of Refreshment committee on 5 <sup>th</sup> convocation of UBKV[Ref No. 1210/UBKV/ Est.(Conv.-120) dt 25.11.2016]	Dr. A Chakraborty

**(b) Organizing Seminar/Symposium/Conference/Workshop**

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
1	Organizing Secretary, Jackfruit Exhibition- 2016	14.7.2016	Faculty of Horticulture	Faculty of Horticulture, UBKV	Dr. P. K. Paul
2	Convener, Jackfruit Exhibition- 2016 (Ref No. UBKV/Hort./PPHT dt 05.7.2016)	14.7.2016	Faculty of Horticulture	Faculty of Horticulture, UBKV	Mr. N. Bhowmick
3	Member, Sub-Committee of Sensitizing Workshop on Experiential Learning, Entrepreneurship and needs of Agro-Industry (Ref-UBKV/ELP Workshop-27/2017 dt 23.02.2017).	28 Feb to 1 <sup>st</sup> March, 2017	UBKV	NAARM, the Bengal Chamber of Commerce, UBKV	Dr. P. K. Paul and Mr. N. Bhowmick
4	Member, Organizing Committee of National Workshop on Sustainable Mango Production: Challenges under Changing Climate in Tropics and Subtropics & Mango Diversity Show	18-19.6.2016	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	Dr. P. K. Paul and Mr. N. Bhowmick

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

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
1	State Level Seminar on Horticulture Entrepreneurship Development in North Bengal Topic: Postharvest management of Spice Crops	03.03.2016 - 04.03.2016	Balurghat, Dakshin Dinajpur	UBKV, Funded by Directorate of Arecanut & Spices Development, Dept. of Agriculture, Cooperation & Farmers' Welfare, Govt. of India	Dr. P. K. Paul
2	State Level Seminar on Horticulture Entrepreneurship Development in North Bengal Topic: Nutrient Management in Horticultural Crops	03.03.2016 - 04.03.2016	Balurghat, Dakshin Dinajpur	UBKV, Funded by Directorate of Arecanut & Spices Development, Dept. of Agriculture, Cooperation & Farmers' Welfare, Govt. of India	Mr. N. Bhowmick
3	Preparation of squash, mixed pickle and ginger candy	09.04.2016	Dinhata II, CoochBehar	Sabuj Biplab Producer Organization (SBPO), Dinhata	Dr. P. K. Paul Dr. M. Preema Devi

Sl. No.	Subject	Period	Venue	Organizer	Resource Person
4	Zonal Level Seminar on Agro Based Food Processing Industry (ABFPI)	07.12.2016 – 08.12.2016	Mirik, Dist. Darjeeling	Raiganj Institute of Inspiration and Empowerment for Livelihood Generation supported by Khadi & Village Commission (KVIC), Ministry of MSME, Govt. of India	Dr. P. K. Paul
5	One day training programme on food processing	09.08.2016	Haldibari CoochBehar	ADMD & Project Director on Management Unit (DMMU) & DRDC, Cooch Behar	Dr. M. Preema Devi
6	Workshop on Fruit processing	15.12.2016	Bapuji Junior High School, CoochBehar	Principal, University BT & Evening College, Cooch Behar	Dr. M. Preema Devi
7	Training on preparation of guava jelly for women farmers under Capacity building and Food security Group	18.01.2017	Department of PPHT	Assistant Director of Agriculture Cooch Behar II Block,	Dr. M. Preema Devi
8	Training on banana cultivation	28.12.1016	ADO office Pundibari, Cooch Behar	Office of the Agriculture Division Officer Cooch Behar II Block,	Dr. A. Chakraborty
9	Farmers training programme on fruit crop	21.01.2017	Alipurduar	Office of the Assistant Director of Agriculture, Alipurduar	Mr. N. Bhowmick

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

Sl. No.	Subject	Period	Venue	Organizer	Responsibility	Resource Person
1	International Conference on Agriculture, Food Science, Natural Resource Management and Environmental Dynamics: the technology, People and Sustainable Development	13.8.2016 - 14.8.2016	BCKV, Nadia	BCKV & Krishi Sanskriti, New Delhi	Co-Chairman of Tech Session-2	N. Bhowmick



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

Sl. No.	Subject	Period	Venue	Organizer	Associated Teacher
1	ICAR Summer School on Approaches to identification, quantification and reduction of Post Harvest Losses in India	17.08.2016 - 06.08.2016	ICAR Central Institute of Post Harvest Engineering and Technology (CIPHET). Ludhiana.	ICAR-CIPHET	Dr. M. Preema Devi

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

Sl. No.	Subject	Period	Venue	Organizer	Title of the Paper presented	Associated Teacher
1	National Workshop on Sustainable Mango Production: Challenges under Changing Climate in Tropics and Subtropics & Mango Diversity Show, Malda	18.6.2017 - 19.6.2016	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	Morphological & Physico-chemical Properties of some mango cultivars under the Terai region of West Bengal-Oral	N. Bhowmick
2	National Workshop on Sustainable Mango Production: Challenges under Changing Climate in Tropics and Subtropics & Mango Diversity Show, Malda	18.6.2017 - 19.6.2016	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	ICAR-Central Institute for Sub-tropical Horticulture-RRS, Malda	Postharvest Management and Packaging of Mango for Export promotion	P. K. Paul
3	National Conference on Enhancing Nutritional Security through climate smart farming practices	17.3.2017 - 18.3.2017	RRS, Hill Zone, UBKV, Kalimpong	COBACAS & UBKV	“Effect of Different Postharvest Treatments on Storage Life of Guava ( <i>Psidium guajava</i> L.)”	N. Bhowmick
4	International Conference on Agriculture, Food Science, Natural Resource Management and Environmental Dynamics: the technology, People and Sustainable Development	13.8.2017 - 14.8.2016	BCKV, Nadia	BCKV & Krishi Sanskriti, New Delhi	Allelopathic effect of litchi leaf extract on seed germination of pea and lafa	N. Bhowmick

Sl. No.	Subject	Period	Venue	Organizer	Title of the Paper presented	Associated Teacher
5	Sensitizing Workshop on Experiential Learning, Entrepreneurship and needs of Agro-Industry	28.2.2017 - 01.3.2017	UBKV	NAARM, the Bengal Chamber of Commerce, UBKV	Attended the workshop	N. Bhowmick
6	National Seminar on Integrating Agri-Horticultural and Allied Research for Food and Nutritional Security in the Era of Global Climate Disruption.	4.3.2017 - 6.3.2017	ICAR Research Station for North East Hill Region, Manipur Centre, Imphal	ICAR Research Station for North East Hill Region, Umium, Barapni, Meghalaya	Presented Research Paper	Dr. M. P. Devi

### 8) OTHER ACADEMIC ACTIVITIES:

#### a) Paper Setter/Moderator/Evaluation of Answer Script

Sl. No.	Name of the Course	University	Associate Teacher
1.	Paper Setter for Hort-103: Water Management in Horticultural Crops (1+1)	Bidhan Chandra Krishi Viswavidyalaya [via email on 03.11.2016]	N. Bhowmick
2.	Paper Setter for Hort-303: Introductory of Biotechnology of Horticultural Crops (1+1)	Bidhan Chandra Krishi Viswavidyalaya [via email on 03.11.2016]	N. Bhowmick
3.	Paper Setter for Hort-305: Arid Fruits (1+1)	Bidhan Chandra Krishi Viswavidyalaya [via email on 03.11.2016]	N. Bhowmick
4.	Paper Setter for FS-225: Breeding of Fruits & Plantation Crops (2+1)	Orissa University of Agriculture and Technology (Ref No, 559/COE dt 20.4.16)	N. Bhowmick
5.	External Examiner of FSC 211: Temperate Fruits (1+1)	College of Horticulture & Forestry, Central Agricultural University (Ref No. CHF/CAU/ACAD/Exam(H)/2016/3511 dt 09.12.2016)	N. Bhowmick
6.	External Examiner of FSC 502: Sub-tropical & Temperate Dry Fruits (2+1)	Do	N. Bhowmick
7.	External Examiner of FSC 505: Propagation & Nursery Management for Fruit Crops (2+1)	Do	N. Bhowmick
8.	External Examiner of FS 317: Temperate Fruits	Orissa University of Agriculture and Technology (Ref No, 2430/OUAT dt 13.12.2016 dt 20.4.16)	N. Bhowmick

Sl. No.	Name of the Course	University	Associate Teacher
9.	Paper Setter for FS-214: Plantation Crops (2+1)	Orissa University of Agriculture and Technology (Ref No, 2036/OUAT dt 18.10.2016)	N. Bhowmick
10.	Evaluator for Hort. 204: Post Harvest Management of Horticultural Crops I for B.Sc. (Horti)	Bidhan Chandra Krishi Viswavidyalaya [through e mail dt 03.11.16]	Dr. M. Preema Devi
11.	Evaluator for Hort.301: Fundamentals of Food Technology for B.Sc. (Horti)	Bidhan Chandra Krishi Viswavidyalaya [through e mail dt 03.11.16]	Dr. M. Preema Devi
12.	External examiner for practical examination for UG courses: Department of Horticulture on 21.11.16	Sikkim University [SU/CoE/ERM/F.2.-5/Vol.III/2016/10573 dt 10.11.2016]	Dr. M. Preema Devi
13.	External examiner for practical examination for UG courses: Department of Horticulture on 26.5.16	Sikkim University [SU/CoE/ERM/F.2.-5/Vol.II/2015/908 dt 12.05.2016]	Dr. M. Preema Devi
14.	Question Paper setter for HORT-808: Nursery Management of Horticultural Crops for B.Sc. (Horti)	Tripura University [Ref. No. TU/COE/Agr-1/2013 dt 20.04.2015]	Dr. M. Preema Devi
15.	Question Paper setter for - AHT-302., B.Sc. (Agriculture) Monsoon semester 2016	Your no.133/Exam. Cell/BAU, Sabour dt. 01.10.2016	Dr. A. Chakraborty
16.	Question Paper setter for HORT-111 (Fundamentals of Horticulture), 1+1,for B.Sc. (Agriculture)1 <sup>st</sup> year 1 <sup>st</sup> semester 2016-17	Orissa University of Agricultural and Technology( Ref. No-1916/COE., dt.28.09.2016)	Dr. A. Chakraborty

**b) Member of the Advisory Committee:**

Sl. No.	Name of Student	Course	Department	Associated Teacher
1	Dipika Mal	PhD	Vegetable & Spice Crops	Prof. S. K. Ghosh
2	Tanuj Barma	PhD	Agricultural Entomology	Prof. S. K. Ghosh
3	Kshouni Das	PhD	Vegetable & Spice Crops	Prof. S. K. Ghosh
4	Mumtak Lego	PhD	Vegetable & Spice Crops	Dr. M. Preema Devi
5	Mingma Diki Sherpa	MSc	Floriculture, Medicinal & Aromatic Plants	Dr. M. Preema Devi
6	Aradhana Sen (H-2014-02-M)	MSc	Vegetable & Spice Crops	Dr. M. Preema Devi
7	Kshouni Das (H-2015-05M)	MSc	Vegetable & Spice Crops	Dr. M. Preema Devi
8	Archana. C (H-2015-03 M)	MSc	Plantation Crops & Processing	Dr. M. Preema Devi
9	Arijit Singh Sardar (A-2015-02-M)	MSc	Agril Extension	Dr. M. Preema Devi

**c) Reviewer of Journal**

<b>Topic</b>	<b>Name of journal and year</b>	<b>Associated Teacher</b>
In vitro conservation of Passiflora-a review (Manuscript ID-HORTI 16591 dt 11.7.2016)	<i>Scientia Horticulturae</i>	Nilesh Bhowmick
Impact of KNO <sub>3</sub> , Cycocel, Ethrel and KH <sub>2</sub> PO <sub>4</sub> on physical, chemical and quality characteristics of 'Kesar' Mango	<i>Journal of Applied and Natural Science</i>	Do
"Combined Effects of Packaging Film and Temperatures on the Nutritional Composition of Stored Fresh Maize ( <i>Zea mays</i> ) on the Cob"	<i>American Journal of Food Science and Technology (Ref via email on 06.12.2016)</i>	Dr. M. Preema Devi

**d) Internal Question Setter**

<b>Sl. No.</b>	<b>Paper</b>	<b>Associated Teacher</b>
1.	Preparation of End term Question of PPT 101	Dr. A. Chakraborty & Nilesh Bhowmick
2.	Preparation of End term Question of PPT 102	Dr. A. Chakraborty & Nilesh Bhowmick
3.	Preparation of End term Question of PPT 151	Dr. A. Chakraborty & Nilesh Bhowmick
4.	Preparation of End term Question of PPT 152	Dr. A. Chakraborty & Nilesh Bhowmick
5.	Preparation of mid term Question of PPT 201,251,252,151 &152(4 <sup>th</sup> DC)	Dr. A. Chakraborty & Nilesh Bhowmick
6.	Preparation of mid term Question of PPT101,102 ,151 &152	Dr. A. Chakraborty & Nilesh Bhowmick
7.	Preparation of End term Question of PPT 503	Dr. A. Chakraborty & Nilesh Bhowmick
8.	Preparation of End term Question of PPT 504	Dr. A. Chakraborty & Nilesh Bhowmick
9.	Preparation of End term Question of PPT 505	Dr.P.K.Paul & Dr. M. Preema Devi
10.	Preparation of End term Question of PPT 506	Dr.P.K.Paul & Dr. M. Preema Devi
11.	Preparation of End term Question of PPT 507	Dr. A. Chakraborty & Nilesh Bhowmick
12.	Preparation of End term Question of PPT 601	Dr. A. Chakraborty
13.	Preparation of End term Question of PPT 602	Dr. A. Chakraborty
14.	Preparation of End term Question of PPT 603	Dr. A. Chakraborty

**e) Question Moderation**

<b>Sl. No.</b>	<b>Paper</b>	<b>Associated Teacher</b>
1	Moderator for 2 <sup>nd</sup> & 4 <sup>th</sup> Term (Ref no. 266/Exam/UBKV dt 09.06.2016)	Mr. Nilesh Bhowmick & Dr. A Chakraborty

**f) Evaluator of answer scripts**

<b>Sl. No.</b>	<b>Paper</b>	<b>Associated Teacher</b>
1	PPT 101 (Ref No. 1158/Exam/UBKV dt 30.01.2017)	Mr. N Bhowmick, Mr. S. Basfore
2	PPT 201 (review) Ref 393/UBKV/EXAM dt 12.07.2016	Prof. S. K. Ghosh, Mr. N Bhowmick
3	PPT 103 (review) Ref 346/UBKV/EXAM dt 27.06.2016	Prof. S. K. Ghosh, Mr. N Bhowmick
4	PPT 101 (review) Ref 228/UBKV/EXAM dt 03.06.2016	Prof. S. K. Ghosh, Mr. N Bhowmick
5	PPT 102 (Ref No. 1160/Exam/UBKV dt 31.01.2017)	Dr. A Chakraborty

### **9) ADDITIONAL RESPONSIBILITIES**

#### **(i) Mr. N. Bhowmick**

- a) Member Student READY programme (Ref No: UBKV/Hort./1143/2016-17 dt 24.01.2017)
- b) Member, Co-ordinator team of RHWE (Ref No.: UBKV/Hort./1096/2016-17 dt 09-01-2017)
- c) Perform invigilation duty on 20.01.2017, 10.2.2017, 13.02.2017 (vide Ref. No. 490-D-F/Ag-UBKV dt 22-12-2016), 30.3.17(reserved) Ref No: 657-D-F/Ag-UBKV dt 23.3.2017, 01.7.16 (reserved)-Ref No. 15/UBKV/PG dt 08.06.16, 22.7.16 (Ref No. 219-D dt 15.7.2016), 22.7.2016 (reserved), Ref No. D-F/187 dt 20.6.2016, 15.7.2016 (Ref No. D-F/187 dt 20.6.2016)

#### **(ii) Dr. Mutum Preema Devi**

- a) Nominated teacher of the Department of Experiential Learning Programme 2016-17 for the outgoing fourth year UG students of Horticulture of the Faculty (Ref No. UBKV/Hort/PPHT-783, dt 01/09/16)
- b) Attended one day workshop on Food Security and Climate Change in India held on 5th December 2016 at UBKV, Pundibari, W.B.
- c) Nominated teacher for evaluation of Theory and Practical examination of PPT 101 and PPT 102 (Ref No. UBKV/Hort/PPHT-944, dt 03/01/17)
- d) Nominated teacher for moderation of question paper of PPT 301, Post Harvest Management of Horticultural Crops. (Ref No. UBKV/Hort/PPHT-925, dt 20/12/16)
- e) External examiner for practical examiner of Sikkim University on 21.11.16 (Ref No. SU/COE/ERM/F,2-5/Vol III/2016, dt 10/11/16)
- f) Departmental nominee for PhD student (Ms Antara Roy) (Ref No. 13/UBKV/PG, dt 19/09/16)
- g) Teacher associated with MSc and PhD Entrance paper evaluation (Ref No. UBKV/Hort./PPHT – 741, dt 26/07/16)
- h) Preparation of Question bank for MSc and PhD Entrance Test, 2016 (Ref No. 24/UBKV/PG, dt 29/06/16)

- i) Treasurer in Jackfruit Exhibition, 2016 (Ref No. UBKV/Hort./PPHT – 709, dt 05/07/16)
- j) Seminar leader for the year 2016-17
- k) Evaluation of quality data of mango fruit var. Sima (Ref No. UBKV/Hort./PPHT – 1277, dt 27/06/16)
- l) Reviewer of end term answer script of PPT 102 on 06/06/16 (Ref No. 228/UBKV/Exam, dt 03/06/16)
- m) External examiner for practical examiner of Sikkim University on 25.05.16 (Ref No. SU/COE/ERM/F,2-5/Vol II/2015/908, dt 12/05/16)
- n) Associated teacher at Industrial training program for BSc. (Hort) student, 2015-16 on 02/06/16 (Ref No. UBKV/Hort/ITP – 02/2016, dt 11/05/16)
- o) Member of press and publication 5th convocation Convocation (Ref. No. 1210/UBKV/Est. (Covn-120)

**(iii) Dr. Aditi Chakraborty**

- a) Member Student READY programme (Ref No: UBKV/Hort./1143/2016-17 dt 24.01.2017)
- b) Departmental nominee for P.hD student (Ms Sukanya Misra) (Ref No. 13/UBKV/PG, dt 19/09/16)
- c) Act as Provost of Teesta Hostel from 21.10.16 to 27.10.16
- d) Act as Resident Superintendent cum NSS cell from 14.03.17 to 20.03.17(Ref No. 383/UBKV/NSS/F-07/15, Dt. 10.03.17)
- e) Member of Refreshment committee of 5th Convocation (Ref. No. 1210/UBKV/Est. (Covn-120)
- f) Perform invigilation duty on 27.01.2017, 03.2.2017, 13.02.2017 (vide Ref. No. 490-D-F/Ag-UBKV dt 22-12-2016), 24.1.17(reserved), 12.01.17 Ref No: UBKV/ Hort. PPHT 935 dt 02.01.2017, 01.7.16 ,29.08.2016 (reserve) Ref. No. 245-D/F Ag-UBKV, Dt. 8.8.16; 27.07.2016 Ref. No. 218-D. Dt. 15.07.16

**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	Prof. S. K. Ghosh N. Bhowmick
2	Crop and Weed Science Society (Journal of Crop and Weed)	B.C.K.V., Mohanpur, Nadia, WB	N. Bhowmick
3	Horticulture Society of India (Indian Journal of Horticulture)	I.A.R.I., New Delhi	Prof. S. K. Ghosh N. Bhowmick
4	Society Promotion of Horticulture (Journal of Horticultural Science)	I.I.H.R., Bangaluru	N. Bhowmick
5	Indian Society for Plant Physiology	I.A.R.I., New Delhi	N. Bhowmick

	(Indian Journal of Plant Physiology)		
6	Forum of Scientists, Engineers and Technologists (Thought)	Kolkata	N. Bhowmick
7	Fruit Science Society of Bangladesh	Bangladesh Agricultural University, Mymensingh, Bangladesh	N. Bhowmick
8	Cooch Behar Association for Cultivation of Agricultural Sciences (Journal of Agricultural Technology)	U.B.K.V.	Dr. P.K.Paul N. Bhowmick Dr. M. Preema Devi Dr. A Chakraborty
9	Association of Food Scientist and Technologist	CFTRI, Mysore	Dr. M. Preema Devi Dr. P.K.Paul

#### 11) ANNUAL MEMBERSHIP OF PROFESSIONAL SOCIETIES/JOURNALS

Sl. No.	Name of the Journal/Society	Address	Teacher
1	Indian Horticulture	ICAR, New Delhi	Mr.N. Bhowmick Prof. S. K. Ghosh

# PHOTO GALLERY



**Participation in Mango Diversity Show, at ICAR-CISH, RRS, Malda**





**Experiential Learning Programme**



**Dr. C. Chattopadhyay, Honb'le VC, UBKV along with other dignitaries during the Jackfruit Exhibition-2016**



**Farmers' Training Programme during The Jackfruit Exhibition-2016**



**Prof. S. K. Ghosh conducting Field Practical**



**All the members of Dept. of Pomology & Post Harvest Technology  
(Sitting from left: Dr. A. Chakraborty, Prof S. K. Ghosh, Dr. M. P. Devi  
Standing from left: D. Das, N. C. Saha, Prof. P. K. Paul, Mr. N. Bhowmick, A Sarkar)**



**Harvesting of Litchi**



**Litchi Orchard of Instructional Farm of the Department**



**Honorable Vice Chancellor Dr. Chirantan Chattopadhyay along with Dean, Faculty of Horticulture and Agriculture and Head, PPHT during Jackfruit exhibition 2016.**



**Dr. M. Preema Devi, Dr. A. Chakraborty and Prof. S. Maitra along with B Sc. Final year Horticulture students during Experiential Learning Program, 2016-17**



**Dr. M. Preema Devi** conducting training programme with Mr. Nitish Chandra Saha and Mr. Anando Sarkar at Haldibari, Cooch Behar



**Dr. M. Preema Devi** conducting training programme with Mr. Nitish Chandra Saha at Bapuji Junior High School, Cooch Behar



**Dr. M. Preema Devi** associated with other teachers of the faculty for evaluation of Experiential Learning Program, 2016-17 of B Sc. (Hort) final year students



Analysis of Jackfruit and Litchi



Poster Presentation During National Seminar at RRS, Hill Zone, UBKV, Kalimpong



Sitting (Left to Right) : Dr. K. Narasiah, Dr. D.M. Kadam, Dr. Ranjeet Singh, Dr. S.K. Nanda, Dr. N.S. Rathore (Chief Guest), Dr. R.K. Vishwakarma, Dr. Sandeep Mann, Dr. S.K. Tyagi, Dr. D.K. Sharma,  
 First Row Standing: Dr. A.U. Muzaidadi, Dr. Navjot Kaur, Dr. Neeraj Singh, Mrs. Renuka Aggarwal, Dr. Vinita Singh, Dr. Brijpal Bansi, Mr. Venkateshwar V. Ramesh, Dr. Kailash Chandra Yadav,  
 Dr. Gulab Pandore, Dr. Lenika Kashyap, Ms. Neeravati, Ms. Niketakumari Bhikhabhai Patel, Mrs. Rajdeep Kaur, Dr. Muzum Preema Devi,  
 Second Row Standing: Dr. S.S. Mahanand, Mr. Chandan Kalegowda, Dr. Dhritiman Saha, Sh. Vikas Kumar, Dr. Chandani Solanki, Dr. Akhion Anis Basha, Dr. Gurmeet Singh, Dr. Indira Nairath,  
 Dr. Magdeshwari Sharma, Dr. D.N. Yadav, Dr. Ogal Shivam Bhatt, Sh. B.C. Kotach, Dr. Surbha Dilip Patil, Dr. Ruchita Shukla, Dr. Amandeep Kaur, Dr. Shaizi Sahebzan Arbat

**Dr. M. Preema Devi** during ICAR Summer School on Approaches to identification, quantification and reduction of Post Harvest Losses in India at ICAR- CIPHET, Ludhiana