



From: Principal & Secretary

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Dhaniakhali, Hooghly, 712302

# Sarat Centenary College

Dhaniakhali, Hooghly

Founded: 1976

Recognised Under UGC 2F&12B

WB Govt. Aided

Affiliated to The University of Burdwan

## 3<sup>RD</sup> CYCLE NAAC ACCREDITATION PROCESS-2024


**CRITERIA: 3 RESEARCH, INNOVATIONS AND EXTENSION**

**Key Indicator: 3.5 Collaboration**

**Metric: 3.5.1- Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.**

**\* Document of Collaborative Research between Sarat Centenary College and Department of Bio-Technology (NER-BPMC)**



  
[DR SANDIP KUMAR BASAK]  
Principal, Sarat Centenary College  
**Principal & Secretary,**  
**Sarat Centenary College**  
**P.O.- Dhaniakhali, Dist.- Hooghly**

ISS-156

Administrative

(Application No: AGRI/2015/42)

File No. BT/PR16610/NER/95/221/2015  
GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY  
(NER-BPMC)

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Block-2, 7<sup>th</sup> Floor,  
CGO Complex, Lodhi Road  
New Delhi-110003  
Dated: 13 / 10 / 2016

ORDER

Sanction of the President is hereby accorded under Rule 18 of the Delegation of Financial Powers Rules, 1978 for the implementation of the project under 'DBT's Twinning programme for the NE' titled "An in-depth study of host-non-mulberry silkworm interaction with special reference to extra floral nectaries (EFN) and volatile organic chemicals (VOC) of host plants and the silkworm's adaptations to the host plant's defense response" by Dr. Dipsikha Bora, Dibrugarh University, Dibrugarh and Dr. Krishna Ray, West Bengal State University, Kolkata, West Bengal at a total cost of ₹ 62.90 lakhs (Rupees Sixty Two lakhs and Ninety thousand only) for a period of three years on the terms and conditions detailed as under:

**2.0 The Project:**

**2.1 Project Title:** An in-depth study of host-non-mulberry silkworm interaction with special reference to extra floral nectaries (EFN) and volatile organic chemicals (VOC) of host plants and the silkworm's adaptations to the host plant's defense response.

**2.2 Project Investigators**

**2.2.1 Principal Investigator:** Dr. Dipsikha Bora  
(Parent Institute) Professor  
Department of Life Sciences  
Dibrugarh University  
Dibrugarh- 786004, Assam

**2.2.2 Co-Investigator.:** Dr. Devid Kardong  
(Parent Institute) Assistant Professor  
Department of Life Sciences  
Dibrugarh University,  
Dibrugarh- 786004, Assam

**2.2.3 Principal Investigator:** Dr. Krishna Ray  
(Collaboration Institute) Assistant Professor  
Dept. of Botany  
West Bengal State University,  
Berunanpukuria, Malikapur, Barasat,  
Kolkata- 700126, West Bengal.

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**2.2.4 Co-Investigator.:  
(Collaborating Institute)**

**Dr. Sandip Kumar Basak**  
Associate Professor  
Department of Botany  
Kandi Raj College, Kandi,  
Murshidabad, West Bengal-742137

**2.3 Objectives:**

1. Localization and characterization of EFN of non-mulberry host plants with reference to their influence on arthropod population including *Antheraea spp.* and *Samia Cynthia ricini*.
2. Characterization of plant volatiles of selected non-mulberry host plants under feeding induced/non-induced condition.
3. Behavioural study of the ecoraces of non-mulberry silkworms with respect to olfactory response to VOCs.
4. Identification of ecologically sustainable combination of host plant with least defense response aligned with best adapted ecorace against host plants' defense response.

**2.4 Time Schedule:**

The duration of the project is **three years** from the date of issue of sanction order.

**2.5 Equipment Details:**

**2.5.1 Dibrugarh University, Dibrugarh**

Sl. No.	Description of equipment	Grant Recommended (₹ in lakhs)
1.	Protein electrophoresis assembly	5.00
2.	Green house with accessories (240sq ft.)	7.50
3.	Stereozoom microscope with CCD camera	1.95
Total		14.45

**2.5.2 West Bengal State University, Kolkata, West Bengal**

Sl. No.	Description of equipment	Grant Recommended (₹ in lakhs)
1.	Trinocular Research Microscope with CCD camera and software	2.00
Total		2.00

**2.6 Manpower:**

**Fellowship Conditions:**

A year wise detail of manpower as proposed has been furnished below. HRA will be as per the Govt. Norms, an indication as stated below for the JRF and SRF's emoluments will be





provided as a part of sanction order. JRF shall be ₹ 25,000/- + HRA for the 1st two years and ₹ 28,000/- + HRA for the 3rd year for SRF and applicable, (JRF - Post graduate Degree in Basic Science with NET qualification or graduate degree in Professional course with NET qualification or post graduate degree in professional course)

JRF without NET qualification shall be ₹ 12,000/- + HRA for the 1st two years and ₹ 14,000/- + HRA for the 3rd year for SRF

- For JRF/SRF/RA salary is as per the revised DST OM SR/S9/Z-09/2012, dated October 21, 2014.
- For Project Assistant salary is as per the revised DST OM C.30011/1/2007-IFD, dated 21<sup>st</sup> July 2008.

#### 2.6.1 Dibrugarh University, Dibrugarh

(₹ in lakhs)

S. No.	Position (No.)	Emolument	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	Total
1.	JRF/SRF (1)	JRF @ ₹ 25,000/- + 10 % HRA for the 1 <sup>st</sup> & 2 <sup>nd</sup> yr SRF @ ₹ 28,000/- + 10 % HRA for 3 <sup>rd</sup> yr	3.30	3.30	3.69	10.29
<b>Total</b>			<b>3.30</b>	<b>3.30</b>	<b>3.69</b>	<b>10.29</b>

#### 2.6.2 West Bengal State University, Kolkata, West Bengal

(₹ in lakhs)

S. No.	Position (No.)	Emolument	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	Total
1.	JRF/SRF (1)	JRF @ ₹ 25,000/- + 30 % HRA for the 1 <sup>st</sup> & 2 <sup>nd</sup> yr SRF @ ₹ 28,000/- + 30 % HRA for 3 <sup>rd</sup> yr	3.90	3.90	4.36	12.16
<b>Total</b>			<b>3.90</b>	<b>3.90</b>	<b>4.36</b>	<b>12.16</b>

#### 2.7 Budget Estimate:

The total cost of the project is ₹ 62.90 lakhs (Rupees Sixty Two lakhs and Ninety thousand only) as per budget summary given below:

##### 2.7.1 Dibrugarh University, Dibrugarh

(₹ in lakhs)

Heads	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	Total
<b>I. Non-Recurring</b> (Equipments and accessories)	14.45	0.00	0.00	14.45
<b>Sub Total- I</b>	<b>14.45</b>	<b>0.00</b>	<b>0.00</b>	<b>14.45</b>
<b>II. Recurring</b>				
1. Manpower	3.30	3.30	3.69	10.29
2. Consumables	2.00	3.00	2.00	7.00
3. Travel	0.50	0.50	0.50	1.50

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4. Contingency	0.50	0.50	0.50	1.50
5. Overhead charges	1.00	1.00	1.00	3.00
<b>Sub Total- II (1-5)</b>	<b>7.30</b>	<b>8.30</b>	<b>7.69</b>	<b>23.29</b>
<b>GRAND TOTAL (I+II)</b>	<b>21.75</b>	<b>8.30</b>	<b>7.69</b>	<b>37.74</b>

## 2.7.2 West Bengal State University, Kolkata, West Bengal

(₹ in lakhs)

Heads	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	Total
<b>I. Non-Recurring</b> (Equipment's and accessories)	2.00	0.00	0.00	2.00
<b>Sub Total- I</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>
<b>II. Recurring</b>				
1. Manpower	3.90	3.90	4.36	12.16
2. Consumables	2.00	2.00	2.00	6.00
3. Travel	0.50	0.50	0.50	1.50
4. Contingency	0.50	0.50	0.50	1.50
5. Overhead charges	1.00	0.50	0.50	2.00
<b>Sub Total- II (1-5)</b>	<b>7.90</b>	<b>7.40</b>	<b>7.86</b>	<b>23.16</b>
<b>GRAND TOTAL (I+II)</b>	<b>9.90</b>	<b>7.40</b>	<b>7.86</b>	<b>25.16</b>

(i) Grand total for 3 years (37.74+ 25.16) = ₹ 62.90 lakhs

(ii) Total for 1<sup>st</sup> year release (21.75+9.90) = ₹ 31.65 lakhs

## 2.8 Other Terms & Conditions:

2.8.1 The other terms and conditions governing this sanction are attached at **Annexure-I**.

2.8.2 A Memorandum of Agreement (MoA) will be signed between the Department of Biotechnology and the grantee institute on a ₹ 100/- stamp paper in the format given at **Annexure II** and the subsequent releases will be made only after signing of MoA by the grantee institute and its acceptance by DBT. All pages need to be signed by the PI and the forwarding authority and the MoA returned to DBT within 30 days of issue of this letter.

2.8.3 The Non-recurring items must be procured and installed within 6 month period from the date of sanction.

2.8.4 In case the amount of grant-in-aid is refunded, the whole or a part amount of the grant, with an interest at 10% per annum there on shall be recovered.

2.8.5 No international travel will be undertaken from the sanctioned project grant unless specified otherwise.

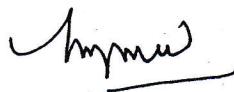
2.8.6 The Institute/Agency will keep the whole of the grant in a Bank Account earning interest, and the interest so earned should be reported to DBT in the Utilization Certificate and statement of Expenditure. The interest so earned will be treated as created to the institute / Agency and shall be adjusted towards further installment of the grant and or at the time of Final Settlement of Account.

2.9 Additional Terms & Conditions, specific for Twinning R&D program for NER:

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- 2.9.1 Both NER & Rest of India (RoI), Institutions scientists should work together for the objectives stated in the sanction of the project and any deviation from this would attract closure of the project at any point of time.
- 2.9.2 In the project review meetings, both the PI's from NER & RoI Institutions should participate & make presentation.
- 2.9.3 The outcomes of the project such as research papers, patents, copy rights etc. should be made jointly.
- 2.9.4 The NER Scientists are to be trained at the collaborating institute appropriately to empower the NER Scientists.
- 2.9.5 The project personal such as Research Associate, JRF/SRF, Research Assistant are also to be trained at least once in the collaborating national institute.
- 2.9.6 The collaborating institute scientist should visit NER institutions more frequently to guide NER scientists in design and conduct of experiments.
- 2.10 This issues under the powers delegated to this Department and with the concurrence of IFD, DBT vide their Dy No. 102/I.F.D/SAN/2122/2016-2017 Dated 22/08/2016.
- 2.10.1 This sanction order has been noted at Serial No..... in the Register of Grants.
- 2.10.2 The accounts of grantee institution shall be open to inspection by sanctioning auditory / audit.
- 3.0 M/S Biotech Consortium India Ltd (BCIL), Anuvrat Bhawan, 210, Deen Dayal Upadhyay Marg, New Delhi- 110002, is administrating the North Eastern Region Biotechnology Programme Management Cell (NER-BPMC) of the DBT.

  
(Dr. T. Madhan Mohan)  
Advisor, DBT

To,  
The Pay & Accounts Officer,  
Department of Biotechnology,  
New Delhi - 110003

Copy to:

1. The Principal Director of Audit (Scientific Department), AGCR Building, New Delhi - 110 002.
2. Cash Section, DBT (For information only).
3. Sanction Folder.
4. IFD, DBT.
5. The Registrar, Dibrugarh University, Dibrugarh- 786004, Assam.
6. The Vice-Chancellor, Dibrugarh University, Dibrugarh- 786004, Assam.
7. The Registrar, West Bengal State University, Berunanpukuria, Malikapur, Barasat, Kolkata- 700126, West Bengal.

8. The Vice-Chancellor, West Bengal State University, Berunanpukuria, Malikapur, Barasat, Kolkata- 700126, West Bengal.
9. Dr. Dipsikha Bora, Professor, Department of Life Sciences, Dibrugarh University, Dibrugarh- 786004, Assam.
10. Dr. Krishna Ray, Assistant Professor, Dept. of Botany, West Bengal State University, Berunanpukuria, Malikapur, Barasat, Kolkata- 700126, West Bengal.
11. Concern file.
12. The Managing Director, Biotech Consortium India Limited, (NER-BPMC), 5<sup>th</sup> Floor, Anuvrat Bhawan, 210, Deen Dayal Upadhyay Marg, New Delhi- 110002.



(Dr. T. Madhan Mohan)  
Advisor, DBT