

FINAL CONSOLIDATED PROGRESS REPORT

(2010-2019)

**ADVANCE INSTITUTIONAL LEVEL BIOTECH
HUB**

DHING COLLEGE: NAGAON (ASSAM)

DBT's Sanction Order No:BT/04/NE/2009 dated 21/09/2010



Submitted to:

**“STEERING COMMITTEE FOR HUMAN RESOURCE
DEVELOPMENT IN NER”**

**NER-BPMC (NORTH EASTERN REGION BIOTECHNOLOGY
PROGRAMME MANAGEMENT CELL)
DEPARTMENT OF BIOTECHNOLOGY
GOVT OF INDIA**

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Submitted by:

DR. SARAT KUMAR DUTTA

Principal

**ADVANCE INSTITUTIONAL LEVEL BIOTECH HUB
DHING COLLEGE
DHING: NAGAON (ASSAM)
PIN: 782123**



Estd. 1965

Office of the Principal
DHING COLLEGE

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Date: 20/06/2019

To

Krishnakshi Bhuyan
Programme Manager –Healthcare & HRD
NER-BPMC (North Eastern Region Biotechnology Programme Management
Cell), Department of Biotechnology
Govt of India
A-258, 1st floor, S.B. House, Defence colony
New delhi-110024
Phone:011-49507215

Sub: *Submission of Consolidated Progress Report since inception.*

Respected Madam,

Greetings from Biotech Hub Dhing College. With reference to your E-mail dated 7th June, 2019 I have the honour to submit herewith 3(three) hardcopies of consolidated Progress Report of Advance Institutional Level Biotech Hub , Dhing College, Nagaon (Assam) for your information and necessary action.

Hope the honorable "**STEERING COMMITTEE FOR HUMAN RESOURCE DEVELOPMENT IN NER**" may kindly consider our proposal and obliged.

Thanking you.

With regards
Yours faithfully

(Dr.Sarat Kr.Dutta)
Principal

Dhing College: Nagaon(Assam)

Principal
Dhing College
Dhing- 782123

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FORMAT FOR SUBMISSION OF CONSOLIDATED REPORT
BY THE DBT BIOTECH HUBS IN NER (Since inception)

1. **Name & Address of the Institution:** ***DHING COLLEGE*** (Accredited B⁺⁺ by NAAC), P.O-Dhing, Dist-Nagaon (Assam), PIN-782123
2. **Name & Designation of the Coordinator:** Dr. Manoj Kumar Saikia; Associate Professor, Deptt. of Botany, Dhing College, Nagaon (Assam)-782123
3. **Name & Designation of the Co-Coordinator:** Dr. Ramesh Nath, Associate Professor, Department of Zoology, Dhing College
4. **Telephone, Mobile, and Email of the Coordinator & Co-Coordinator:**
 - Coordinator : Dr. M.K.Saikia : Email-saikiam24@ yahoo.com, phone No-9435162662
 - Co-Coordinator:Dr. R.Nath : Email: rameshnathdhing @gmail.com ,phoneNo-9864403390
5. **Level of the Biotech Hub:** *Advance Institutional level Biotech Hub*
6. **Date & Year of the sanction of biotech hub with DBT's Sanction Order No:BT/04/NE/2009 dated 21/09/2010**
7. **A brief on your organization/institution along with the role played by the Biotech Hub for its development (not exceeding 20 lines):**

Dhing College is a co-educational multidisciplinary college established in 1965 and included under 2(f) of UGC in 1971 and accredited B⁺⁺ by NAAC IN 2017. The College aims at providing B.A, B.Sc and B.Com degree course under affiliation of Gauhati University and continuing the different vocational and skill based courses approved by UGC. The implicit objectives of the college is to enlighten the students to become responsible citizens and to make them eligible for the challenges for future.

The IBTHub was established in 2010 and upgraded to Advance level by the expert committee in 2016. It has successfully completed 8th years of its existence in 2019. The Biotech Hub of the College has now become a centre for facilitating research with a mission to provide opportunities in deficient and remote areas of the entire locality. After establishment of this Hub the locality as well as the student community got the academic momentum through which more enrollment and qualitative students are attracted especially in science section as well as more number of faculties availed the facility of Hub for their research pursuit. Moreover, Biotech Hub has fulfilled the long waiting demand of a sophisticated Central Laboratory to Dhing College has been fulfilled along with infrastructure. The NAAC peer team also highly praised and acknowledged the DBT and validates the entire activities of the Hub during their visit. Due to the immense contribution of the Biotech Hub, the College has been able to score good weightage in Criterion III (Research, Consultancy & Extension) of SSR report.

As regular activity, the Hub always indebted to provide technical knowledge to the students for handling and uses of sophisticated instruments to support their curriculum. The Hub specially accommodates and guided majority of the students to perform their curriculum based science projects in a quality manner by the research personnel's namely RA/SRF/ JRF of the Hub appointed for the purpose. Presently the Hub is providing the HELP DESK services including the online facility for majority of students. Remarkably, the Hub has been providing human resource opportunities to one Research Associate (RA), one Senior Research Fellow (SRF) and one Junior Research Fellow (JRF) who were actively working in this remote area of NER for their research pursuit.

Last but not the least, the Biotech Hub become a centre of networking and mentoring with other neighboring institutions of this greater locality for the benefit of academic and scientific pursuit. The DBT has authorized the Biotech Hub of the college to act as mentoring for neighboring BLiSS for secondary School.

8. Details of Grant received so far:

(a) Total Grant received and utilized so far:

(Rs. In lakhs)

Year	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	Total
Total Grant Received	15.00	5.00	0.00	0.00	0.00	10.00	10.00	0.00	40.00
a. Non-Recurring									
b. Recurring	4.00	5.73	5.98	5.92	5.90	19.06	15.01	19.01	80.61
c. Interest earned on DBT grant during entire period									1.54
Grant Utilized	15.00	5.00	0.00	0.00	0.00	10.00	10.00	1.54	41.54
a. Non-Recurring									
b. Recurring	4.00	5.73	5.98	5.92	5.90	19.06	15.01	9.84	71.44

*** NB: The unutilized balance amount of Rs.9.17 Lakhs under recurring head (manpower resource) has been surrendered to DDO of DBT through a Demand draft dated 31/12/2019 along with SE & UC.

(b) List of equipments' procured under the biotech hub since its inception:

Sl. No.	Name of the equipment	Model No. & Brand Name	Date of Purchase	No. of researchers/ students utilized these Equipments
1	Students Olympus Microscope(6 Nos).	Model No. -HSA	28.01.2011	452
2	Olympus Digital Camera with Trinocular Microscope	Model No.-CH20i Tr.	28.01.2011	356

3.	Mac Autoclave Portable: Size- 350x 325mm	Model No.-MSW-20 Capacity-20Ltrs.	28.01.2011	298
4.	Mac Digital Colony Counter	Model No.- MSW-408	28.01.2011	412
5.	Systronics Digital pH Meter	Model No.-MK-VI	28.01.2011	198
6.	Shimadzu Electronic Balance	Model No. –BL-220H	28.01.2011	301
7.	Remi Centrifuge Machine	Model No.1:R-4C	28.01.2011	214
8.	Zenith Vertical Slab Gel Electrophoresis Apparatus	Model No.:GEL-02-02	28.01.2011	156
9	Mac Tissue Culture Rack	Model No. –MSW-168	28.01.2011	354
10.	Mac Laminar Air Cabinet	Model No.- MSW(Lv- 22)	28.01.2011	279
11.	Mac Air Curtain	Model No.-MSW-AC- 900	28.01.2011	-
12.	Zenith BOD Incubator	Model No.- QW99	28.01.2011	400

13	Systronics Digital UV-VIS Spectrophotometer	Model No.- 117	28.01.2011	415
14	LG Refrigerator	Model No. –Samsung Medium	28.01.2011	-
15	Mac DO Meter	Model No.1:MSW-558	28.01.2011	398
16	Almicro Projection Microscope	Model No.:KW600 A	28.01.2011	412
17	Five Desktop computers+printer with accessories +CC TV <u>5 nos</u>	Model – DELL/Samsung/Lennon/C annon	28.01.2011	562
18	Laptop	Model-Lenovo	16.06.2017	-

19	5 Air Conditioners	Model-Haier	12.04.2011	Common
20	One Power Pact UPS	Model-Sukam	12.04.2011	Common
21	Solar Power System	SPV under Central Electronics Ltd [Hub share 5.00 Lakhs]	10.12.2012	Common
22	96 well Gradient Thermal Cycler	Applied Biosystem (Thermo Fisher)	08.08.2017	122
23	Micropipette Set	TARSON-T2-V55250	08.08.2017	359
24	Mortar & Pestle	-	08.08.2017	512
25	Hot Plate with Magnetic Stirrer	Optics Technology	11.09.2017	347
26	Electronic Balance	SEMSUNG	08.08.2017	442
27	Phase Contrast Microscope	Olympus CH 20i	08.08.2017	277
28	Cuvette	-	08.08.2017	518
29	Incubator Orbital Shaker with microprocessor based PID controller	Optics Technology	08.08.2017	227
30	Bacteriological Incubator with special heavy duty Air Circulating fan system for continuous operation	Therm 04-01	11.09.2017	345
31	Vortex Mixer	Optics Technology	11.09.2017	338
32	Electrophoresis unit with power supply	GEL-02-02	08.08.2017	353
33	UV Transilluminator	Genei	08.08.2017	213
34	Autoclave with	Optics Technology	08.08.2017	744

	digital Temp. cont.			
35	Deep Freezer	Elenpro	08.08.2017	-
36	Microwave Oven with Accessories	Samsung	08.08.2017	418
37	Digital Flame photometer	Systronics	08.08.2017	577
38	Rotary Microtome	Almicro	11.09.2017	417
39	Distillation Unit	Borosil	08.08.2017	Science Dept
40	Electrical Accessories	ISI quality	04.10.2017	Common
41	Microcontroller based Vis. Spectrophotometer	Systronics	08.08.2017	218
42	Daps Electronics Relay Unit	D.A.P.S	08.08.2017	open
43	Stabilizer 1KVA	D.A.P.S	08.08.2017	-
44	Steel Furniture & Almira, Rack and Accessories	-	31.12.2017	-
46	Inverter	EXIDE	16.04.2011	-
47	Function Generator	Biocraft,CP-1525	04.05.2018	344
48	Galvanometer set,	Biocraft,CP-929	04.05.18	427
49	Anderson Bridge set with headphone,	Biocraft,CP-848	04.05.18	427
50	Camera Lucida(Photographic),Mirror type	Biocraft, BMA-6	04.05.18	355
51	Lux Meter	Biocraft,CEI-7	04.05.18	343
52	Micro Kjeldahl Digestion Unit	IKON Instruments,IK-96	04.05.18	277
53	Hot Plate	IKON Instruments,IK-171	04.05.18	433
54	Ganongs	Biocraft,BP-86	04.05.18	431

	Respirometer			
55	Weight Box	Biocraft,BP-86	04.05.18	552
56	Autoclave	IKON Instruments,IK-101	04.05.18	544
57	Polarimeter	220MM/opticsTechnology	29.05.18	315
58	pH Meter	Systronics model MKVI	29.05.18	470
59	TLC Kit	Optics Technology	29.05.18	383
60	Digital Photometer Colorimeter	Type112 Systronics	29.05.18	285
61	Burette 10 ml 10nos	Borosil	29.05.18	551
62	Pipette 0.25 ml 25nos	Borosil	29.05.18	562
63	Trinocular Microscope	LX300 Labomed	29.05.18	430
64	LCD Projector	Benq	29.05.18	-
65	Microwave Oven	LG	29.05.18	225
66	Hot Plate	Optics	29.05.18	
67	Micropipette,2-200 µl	Tarson	29.05.18	332
68	Dessicator Vaccuum 300mm	Tarson	29.05.18	245

69	Bi-prism assembly with optical lens	Coslab	26.06.18	479
70	C-14/meade reflector telescope(Astrono mical)	Coslab	26.06.18	363
71	Herbarium Specimen cabinet	Biocraft	26.06.18	520
72	Photographic microscope	HL 23 LED Coslab	26.06.18	560

73	Mortar & Pestle	Biocraft	26.06.18	523
74	Binocular Microscope	Coslab	26.06.18	544
75	Audio Frequency Oscillator	Biocraft	26.06.18	177
76	Stefan constant equipment set	Biocraft	26.06.18	212
77	Haemocytometer	Biocraft	26.06.18	321

(c) Manpower Recruitment Details in respect to DBT sanctioned position (since inception):

Sl. No.	Name	Designation	Specialization	Period of engagement
1	Dipanjali Saikia [M.Sc Biotech GATE]	JRF	Biotechnology	08/03/2011 to 19/09/2012
2.	Chidananda Nath [M.Sc NET]	JRF	Ecorestoration	01/10/2012 to 31/05/2013
3.	Farhana Begum [M.Sc Biotech]	JRF	Biotechnology	15/06/2013 to 30/09/2014
4.	Manikongkona Katakai. [M.Sc Biotech] Ph.D Scholar	SRF	Biotechnology	08/10/2014 to 28/02/2018
5.	Uddhab Talukdar [M.Sc Botany]	SRF	Botany (Mycology & Plant Pathology)	17/05/2017 [till date]
6.	Chidananda Nath [M.Sc NET]	JRF	Ecorestoration	22/05/2017 to 31/12/2017
7.	Joyashri Das [M.Sc Biotech] Completed Ph.D in 2021.	SRF	Biotechnology	22/05/2017 to 18/02/2018
8.	Sukanya Sarmah [M.Sc Biotech]	JRF	Biotechnology	22/05/2017 to 28/02/2018

9.	Pompi Bordoloi	JRF	Botany	05/04/2018 to 03/10/2018
10	Dr. Banashree Sahariah [M.Sc Environmental Science]	Research Associate (RA), Ph.D	Environmental Science	05.04.2018 [till date]
11	Madhusmita Borah[M.Sc Botany]	JRF	Botany	16/11/2018[till date]

9. How the Biotech Hub has facilitated Human Resource development at the host institute:

- a. How the Biotech hub extended its support to execute different teaching labs (course name and number) of the UG/PG programs in Life Sciences and how many awarded degrees so far and their placement status: **[The Biotech Hub extends support services to various existing UG /Diploma/Certificate Courses of the College. In addition to these, the Hub independently introduced 2(two) Diploma Courses on “Solid waste Management & Vermicomposting” and “Laboratory Tools and Techniques” as a skill based programmes for enhancing technical and innovative knowledge of the students. The courses /programmes supported by Biotech Hub are as follows:]**

SL No.	Course/Level(UG)	Name of the Course	Number of students	Awarded Degrees/Diploma
1	Diploma programme (UGC-COP)	“Herbal Science and plant Processing”	50	40
2	Diploma programme	“Solid waste Management & Vermicomposting”	15	Ongoing
3	Diploma programme	“Laboratory Tools & Techniques”	12	Ongoing
4	Diploma programme	“Fishery & Poultry Farming”	67	67
5	UG programme in Botany, Zoology, Physics and Chemistry	B.Sc (Major)	513(LS) 200(PC) Total=713	713
3	Higher Secondary (Science)	Orientation Programme for National Science Olympiad Examination	255	255
4	Students Projects (UG level)	For B.Sc (Major) 6 th semester students	142	142
5	Minor & Major research work by faculty & research scholar (JRF ,SRF & RA)[PG & Ph.D level]	Research	11	completed

- b. Details of Ph.Ds. produced by using the facilities of biotech hub including the other departments of the parent institution: **[Manikongkona Kataki (SRF) has been registered for PhD work in Assam Down Town University under the guidance of Dr. Manoj Kumar Saikia, Coordinator of Biotech Hub on the research topic “Identification of potential Cyanobacteria growing in industrial effluents applicable for Bioremediation.” Besides, 3 faculty members of other departments have also utilized the facilities of the Hub. Out of which, one faculty member has been awarded PhD].**
- c. How many life science department’s students and individual faculty members are getting involved in the biotech hub activities over a period of time both in terms of use of infrastructural facilities and output in terms of acknowledgment in research publications and technical reports. (Feedback of from the heads of science departments of parent institute to be enclosed) :**[About 513 students of Life Science Departments and 40 individual faculties (including 8 Life Science faculty members) are highly involved and immensely benefitted by the facilities of Biotech Hub both in terms research publications and technical reports (Feedback certificates enclosed in Annexure I-VII).**
- d. How the Biotech Hub facilities have been integrated with similar in-house facility for larger utilization: **[The Biotech Hub facilities has full cooperation and collaboration with nearby BT Hubs viz. BT Hub Nagaon College, BT Hub ADP College. Besides, the Biotech Hub, Dhing College has been mentoring & monitoring BLiSS of JNV School, Dhing, Nagaon, Assam since inception].**
- e. Details of any periodic orientation programs on the hands-on equipment and methodology to the students (for UG/PG and newly admitted PhD students) are being offered by the Hub.: **[Regular periodic orientation programme is organized by the Hub to support the 3rd and 6th Semester B.Sc Botany (Major) students in terms of their course works and practical classes. The Course Content Papers are M302, M605 and M606 as framed by Gauhati University are tabulated below]:**

M302(Instrumentation and Laboratory Techniques)	M605 (Molecular Biology/Biotechnology/Computer Application)	M606(Plant Physiology and Plant resource Utilization)
Demostration of Instruments like Spectrophotometer, Incubator, Centrifuge, Laminar Air Flow etc.	Protein Estimation, Amino acid extraction, Estimation of Reducing Sugar, Chlorophyll pigment separation	Osmotic Potential by Plasmolytic method
Microtomy , Microscopy	Total Kjeldahl Nitrogen estimation, Slant preparation and Inoculation by MS medium, Micropropagation	Water potential of Plant Tissue

Fixatives and Stains, Methods of Sterilization and Culture Media	Genetic Engineering Techniques, DNA Sequencing, DNA Fingerprinting, FISH	Stomatal Index, Stomatal frequency, Transpiration rate of different type of leaves
Field and herbarium techniques	Sequence Alignment, Retrieval Sequences, Phylogenetic Tree construction	Extraction and separation of Chloroplast by Solvent Method and Paper Chromatography
Preparation of Solutions and Reagents	Basic computer applications like MS Word, MS Excel, Power Point etc.	Pharmacological studies of powdered drugs-Zinger, Rauwolfia etc.

- f. Any networking with BLiSS Schools, STAR colleges or any other DBT funded programs in NER:

[The Biotech Hub has a very good networking with BLiSS Centre such as 3 SSC, 1 BLiSS, 2 IBT Hub (Collaboration) and nearby institutions including the host].

10. How Biotech Hub has facilitated R&D activities in the Institute, please provide the following details:

- (a) Specific Research areas of working:

- **Biotechnology**
- **Bioremediation**
- **Environmental Biotechnology**

- (b) Details of extramural grants received by the Institute (ongoing/completed) [*which uses/utilized the facilities of Hub*]:

S. No.	Title of the project	Name of the PI/Co-PIs	Funding agency	Sanctioned budget	Project duration (Dates)	
					From	to
1.	<i>“The study of Muga Silkworm (Anthraxaceae assamenis, Helfer) Diversity in North Eastern region of India & its characterization”</i> under UGC, New Delhi	Dr. Ramesh Nath [Presently working as Principal at Khagarijan College, Nagaon.	UGC	Rs. 1200000/-	2011	2014 [Completed]
2.	<i>“Screening growth response of Cyanobacteria to different</i>	Dr. Manoj Kumar Saikia	UGC	Rs.1150000	2013	2016 [Completed]

<i>industrial effluents and their molecular characterization”</i> <i>UGC New Delhi</i>					
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(c) Measurable achievements in terms of publication/ patents/ technology transfer etc. under the R & D work undertaken, since inception:

(i) Details of papers published (directly from the Hub) in peer reviewed journals, citing bibliographic references. Give only papers emerged out of biotech hub support with acknowledgement of biotech hub/DBT

1. Saikia K. M. & Saikia.D, 2011: PCR detection of ‘stx1’ and ‘stx2’ toxigenic gene in multiple antibiotic resistant *Escherichia coli* population and phenotypic detection of ESBL producing *Escherichia coli* isolates from local variety of poultry. ***International journal of Applied Biology and Pharmaceutical Technology***(2): 3,593-602
2. Saikia K. M. & Lohar. P 2012: Structural and Physicochemical correlation of Algal Community of Wetland affected by pulp and paper mill effluent. ***Global Journal of Science Frontier Research Vol. 12 Issue 5 Version 1.0***
3. Saikia.D 2012: Molecular Characterization of Shiga like toxin producing *Escherichia coli* (STEC) isolates from broiler and Local variety of Poultry. ***International journal of Applied Biology and Pharmaceutical Technology***(3):3,42-46
4. Saikia.M & Saikia.D, 2012: Transgenic Tea Plant: Molecular aspect of health. ***Proceedings of State level conference on medicinal plants conducted by Dept of Botany, Dhing College, Nagaon, Assam, ISBN 978-81-922919-8-7***
5. Nath.R, Haloi.K, Devi.D.2013.Comparative study on tensile properties of different colour morphs and wild counterpart of muga silkworm (*Antheraea assamensis* Helfer) of North Eastern India, ***International Journal of Research in Biological Sciences***, 3(4), 3(4): 141-144.
6. Haloi.K, Kalita.M, Nath.R.2013.The Study on the Histopathological Changes of Stomach of *Channa punctatus* (Bloch). By used Pesticide Endosulfan, ***Global Journal of Science Frontier Research***, 13(2),1-6.
7. Das.K and Nath.R.2013.Eco-toxicological impacts of Nagaon paper mill effluents with reference to fresh water micro-biota, ***Cibtech Journal of Bio-Protocols***, 2(1), 58-62.
8. Das.K, Nath.R, Azad.P .2013. Soil Microbial Diversity of Dibru-Saikhowa Biosphere Reserve Forest of Assam, India, ***Global Journal of Science Frontier Research***, 13(3), 7-13.
9. Haloi.K, Kalita.M, Nath.R,Borkotoki.A.2014.A Study on Histopathological Impact of Endosulfan on Liver of *Channa punctatus* Bloch. ***International Journal of Research in Zoology***, 4(2): 19-23.

10. Haloi.K, Kalita.M, Nath.R, Borkotoki.A.2014. A Study on Histopathological Impact of Endosulfan on Liver of *Channa punctatus* Bloch. ***International Journal of Research in Zoology***, 4(2): 19-23.
11. Saikia.K.M, Baruah.R, Begum.F, Saikia.M.2014: Screening Diversity of Bacterial Tissues in Fishes from two Traditional Fish market in Dhing and Nagaon(Assam) ***Journal of Biology and Chemical Research*** (3):1,495-500.
12. A Study on Impact of Effluents of Nagaon paper Mill on Plants with reference to Chlorophyll content, (Submitted to *American Journal of Environmental protection on March5,2014 ID-8000400058 –under process*)
13. Saikia.K.M, Baruah.R, Kataki.M, Das.G 2014: A Microbiological analysis of soil affected by Fertilizer Plant Assam. ***Asian Academic Research Journal of Multidisciplinary(1): 27, 573-581***
14. A Study of Eco physiology of *Spirulina* in relation to some environmental parameters(Submitted to *American Journal of Ecology and Environmental Science on March 22/05/,2014 ID-8000200076– accepted for publication in vol.2 issue.3*
15. Saikia.K.M, Kataki.M, Boruah.R, Das.G,2014: A Microbiological analysis of Soil affected by fertilizer plant, Assam, India. ***Asian Academic Research Journal Multidisciplinary(27):1,573-581***
16. Saikia.K.M, & Kataki.M 2014: Effect of Cell phone radiation on the germination of seedlings of Wheat (*Triticum aestivum*). ***Proceedings of UGC sponsored National workshop on Mobile phone radiation on environment organized by Dhing College,Nagaon: Assam ,214-221. DNA1. Indian Journal of Experimental Biology(2) 418-426***
17. Saikia. M, Nath.R, Devi.D, 2015. Genetic Diversity and phylogeny analysis of *Antheraea assamensis Helfer*(Lepidoptera: Saturniidae) based on mitochondrial DNA sequences.***Journal of Genetics*** (98):15,1-12.
18. Kataki.M & Saikia.K.M, 2015: Screening ADME-Toxicity Test of *Oxalis corniculata* for its Potential Antibacterial Activity, ***World Journal of Biology and Medical Sciences***, Volume (2): 2, 82-97
19. Kataki.M & Saikia.M.K., 2015: In silico binding studies of *Oxalis corniculata* compounds with *Ralstonia solanacearum* proteins and histone deacetylase 8 protein. ***International journal of drug research and technology(5): 1, 13-23***
20. Kataki.M & Saikia.M.K.2015. Screening ADME-Toxicity Test of *Oxalis corniculata* for its Potential Antibacterial Activity, ***World Journal of Biology and Medical Sciences(2):2, 82-97***
21. Kataki.M & Saikia.M.K.2015. In silico binding studies of *Oxalis corniculata* compounds with *Ralstonia solanacearum* proteins and histone deacetylase 8 protein. ***International journal of drug research and technology(5): 1, 13-23.***
22. In vitro screening of crude extract of *Oxalis corniculata* (L) for inhibitory effect of *Ralstonia solanacearum*, ***Proceeding on National Environmental Awareness Campaign 2014 ,2015 . Ministry of Environment and Forest, Govt. of India.***

23. Ramesh Nath, Dipali Devi (2015) Protein profile of Native population of *Antheraea assamensis* Helfer (Muga Silkworm) of Assam, India. ***Journal of Entomology and Zoology Studies***, 3(4): 157-159.
24. Haloi.K, Kalita.K.M, Nath.R, Devi.D(2016) Characterization and pathogenicity assessment of gut-associated microbes of muga silkworm *Antheraea assamensis* Helfer (Lepidoptera: Saturniidae), ***Journal of Invertebrate Pathology***, 138, 73–85.
25. Survey and Screening of Fungal Air spora in vegetable market environment of Dhing and Moirabari.in Nagaon, Assam ***International Journal of Clinical chemistry and Laboratory Medicine***.
26. Kataki.M and Saikia.K.M: Study of In-vitro Propagation in *Citrus Sp.* *Proceedings of State level conference on “Prospect of Applied Ethnobotany in North Eastern Region of India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 19 and 21 June 2017,111-120
27. Kataki.M and Talukdar.U: Cultivation and Conservation of Ethno-Medicinal Plants of Dhing Area. *Proceedings of State level conference on “Prospect of Applied Ethnobotany in North Eastern Region Of India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 21 June 2017. Page 82-90
28. Ahmed.R, Kalita.R.S, Bahar.N.F, Ahmed.M, Nath.K.S, Amin.N: A survey of some Ethno-medicinal Plant used in Sutirpar Area near Juria of Nagaon District of Assam. *Proceedings of State level conference on “Prospect of Applied Ethnobotany in North Eastern Region Of India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 21 June 2017. Page 94-100
29. Baruah.M.P, Debnath.S, Das.N, Bhuttu.B, Saikia.H, Nath. K.S: Study of some Ethno-Medicinal Plant of Dhing Locality, Nagaon, Assam. *Proceedings of State level conference on “Prospect of Applied Ethnobotany in North Eastern Region Of India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 21 June 2017. Page 101-110.
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32. Talukdar.U and Saikia.K.M: Herbal medicinal plants as a source of new drugs of Dhing Nepaligaon. *Proceedings of State level conference on “Herbal Medicine A Rational Approach In Health Care System With Special Reference To North-East India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 19 June 2017. Page 113-119
33. Das.J, Sarmah.S and Saikia.K.M: A study on larvicidal effect of herbal plant extract against Malaria. *Proceedings of State level conference on “Herbal Medicine A*

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34. Das.J, Sarmah.S and Saikia.K.M. Application of Biotechnological Tools for Conservation of Endangered Species of Assam. *Proceedings of State level conference on “Wildlife Trafficking and Concern to Biodiversity of North East India”* conducted by Dept of Zoology, Dhing College, Nagaon, Assam, held during 17 June 2017. Page 143-152
35. Kataki.M and Saikia.K.M: Wildlife trafficking in Assam: A Critical analysis. *Proceedings of State level conference on “Wildlife Trafficking and Concern to Biodiversity of North East India”* conducted by Dept of Botany, Dhing College, Nagaon, Assam, held during 17 June 2017. Page 180-187.
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(ii) Research leads generated along with their translational aspects, if any: **Nil**

(iii) Whether any patent application filed/grant by the biotech hub. Pl. provide details:**Nil**

(iv) Technologies developed/transferred/commercialized, if any:**Nil**

(d) Has any collaborative research been initiated with neighboring institutions, including Biotech Hubs, if yes details be provided? [**Two collaborative research projects have been initiated with ADP College Biotech Hub and Department of Herbal Science ADP College, Nagaon on**

➤ **“Study of water microbiota using Foldscope Assembly.”**

➤ **“Screening diversity of bacterial tissues in Fishes from traditional market in Nagaon District”.**

11. Contribution of Biotech Hubs in terms of Capacity Building at the Host/neighboring NER institutions:

(a). Hands on trainings/workshops conducted for host / neighboring schools or institutions:

Serial No.	Title	Target participants (Host Institution / other Institution)	Duration and Dates	No. of Participants	Level of Participants (Ph.D./PG/UG)
1.	Basics of Bioinformatics	Host Institution(Dhing College)	3 days/14-16 Nov,2010	40	UG students
2.	Workshops cum training on potentiality of Biotechnology of N.E.India	Dhing College	2 days, 29-30 Mar/2011	58	Teachers & Students
3.	National Workshop on Present approaches and application of Bioinformatics tools and techniques in Biological Sciences.	Dhing College	2 days/17-18 th June,2013	68	Students and Teachers
4.	Hands on Training on Laboratory Tools for Science Teachers/DNA Club Member	Dhing College	2 days/ 20-21 May,2013	25	Teachers and Students
5.	Workshop on Digital safety and Security programme for Students and Teachers	Dhing College	2days/7-8 th May,2014	120	Teachers & Students
6.	NSO Olympiad	Dhing College	3 days/05-07 June,2014	165	Students

7.	Teaching” Fundamentals of Biotechnology for UG	Dhing College	2 days x 3 Batches/07-15 Jan, 2015	120	
8.	Hands on Training on Bioinformatics and Molecular Biology for UG students/Science Teachers/DNA Club Member	Dhing College	3 days/19-21 June, 2015	35	Science Teachers & Students
9.	Students Orientation Programme for Science Olympiad Examination,2015	Dhing College	6 days/12-17 Jan, 2015	145	Students from local schools including host institution.
10.	Workshop cum training on “Aquarium Making and Ornamental Fish Culture”	Dhing College	3 days/27-29 Oct, 2014	70	Students and NGO activist
11.	Workshop on DNA isolation & insertion techniques	Dhing College	2 days/03-04 Feb, 2015	22	Science Teachers
12.	Workshop cum training on “FOOD PROCESSING CUM PRESERVATION”	Dhing College	1 day/1 st March, 2016	54	UG Students
13.	Workshop cum training on “YOGA FOR LIFE” was organized by BT Hub in association with the woman cell of the college on 23.02.2016.	Dhing College	1 day/23 rd Feb,2016	50	Teachers & Students
14.	Workshop on “ Recent Development In Biotechnological Science And Its Prospects ”	Dhing College	1 day/8 th Mar,2016	35	Science Teacher
15.	Training on “Biostatistics and Data Analysis” for UG students	Dhing College	5 days/15-19 Nov, 2015	42	Students and Teachers
16.	Training on “ Medicinal plant Processing Techniques ”	Dhing College	3 days/25-27	15	Students
17.	Workshop cum training on “ Basic techniques in Microbiology ”	Dhing College	3days/01-03 Sep,2016	25	UG Students
18.	Training on “ Bioinformatics tools and its applications ”	Dhing College	3days/30 th Jan-1 st Feb	20	UG Students

19.	Workshop cum training on College Level earthquake and fire mock drill in collaboration with District administration	Dhing College	1 day/9 th Jan	77	Students & Teachers
20.	Hands on training on “Techniques in Plant Tissue Culture”	Dhing College	4 days/8 th - 21 ST May,2016	15	UG Students
21.	Workshops on “Tools and Techniques in Molecular Biology”	Dhing College	3 days/24 th - 26 th May,2017	20	UG Students
22.	Workshop on uses of Foldscope for secondary level students	Dhing College	3 days/28 th May-30 th May2017	70	HS Science Students
23.	Students summer training on Laboratory Techniques in Molecular Biology	Dhing College	7days/7 th July- 25 th July,2017	23	UG Students of Botany & Zoology
24.	School Level Exhibition on science and technologyheld in JNV Dhing	Dhing College	2 days	25	Students
25.	Workshop on MICROTOMY	Dhing College	3 days/28 th -30 th Oct,2017	20	B.Sc Zoology students
26.	NSO Olympiad 2017	Dhing College	2 days/9 th - 10 th Nov,2017		
27.	Workshop on Microbiology for HS Beginners	Dhing College	2 days/8 th -9 th NOV,2017	45	HS Students

27.	Workshop on Microbiology for HS Beginners	Dhing College	2 days/8 th -9 th NOV,2017	45	HS Students
28.	Tools and Techniques of Biotechnology for the HS beginners	Dhing College	2 days/16 th - 18 th Nov,2017	45	HS Students
29.	Outreach Programme to Krishi VigyanKendra,Silongoni,Nagaon	Dhing College	2 days/28-29Nov, 2017	20	B.Sc 1 st Sem Botany
30.	Training on “ Tools and Techniques in Molecular Biology ”	Dhing College	3 days/17-25 July, 2017	20	UG Students Botany and Zoology
31.	Students summer training on Laboratory Techniques in Molecular Biology	Dhing College	7days/03-04 Feb, 2015	23	Science Teachers
32.	Tools and Techniques of Biotechnology for the HS beginners	Dhing College	2 days/16 th -18 th Nov,2017	45	HS Students
33.	Training on techniques of isolation of microbes from soil & air , media preparation	Dhing College	3days/18 th - 20 th Sep,2017	15	B.Sc Botany Students(Major)
34.	Training on Microtome and Block preparation	Dhing College	4 days/28 th - 31 st Oct,2017	13	B.Sc Zoology Students(Major)
35.	Training on Bioinformatics on FASTA, BLAST,FISH,DNA Fingerprinting	Dhing College	3days/24 th - 26 th Feb, 2018	12	B.Sc Botany Students(Major)
36.	Workshop on uses of foldscope for secondary level students	Dhing College	3days, 28thMay-30 th May 2017	70	HS Science Students
37.	Workshop on Microtome & Block Preparation	Dhing College	3 days, 28 th - 30 th Oct,2017	20	B.Sc Zoology
38.	Workshop on Microbiology for HS Beginners	JNV Dhing	2 days,8 th -9 th Nov,2017	45	HS Students

40.	NSO Olympiad 2017	Dhing College	2 days/9 th - 10 th Nov,2017	45	HS Students
41.	School Level Exhibition on Science and Technology	JNV Dhing	2days/14 th - 15 th Nov, 2017	23	Science Teachers
42.	Workshop on Tools and Techniques of Biotechnology for HS Beginners	Dhing College	1 day/16 th - Nov,2018	45	HS Students and Teachers
43.	Workshop on uses of foldscope assembly and its usage	Dhing College	1 day/ 2018	120	Students,Teachers and Researchers
44.	Workshop on Herbal Medicine	Dhing College	1 day/ 2018		
45.	World Aids Day Programme	Dhing College	1 day/1 st Dec,2018	150	Teachers and Students
46.	Organized “World Day to Combat Desertification”	Dhing College	1 day/17 th June,2019	200	Students, Teachers and non teaching Staff
47.	Organized “International Yoga Day”	Dhing College	1 day/21 st June,2019		Teachers and Students

(b) Seminars /symposium/outreach conducted for host / neighboring schools or institutions:

Serial No.	Topic	Target participants (Host Institution / other Institution)	Duration and Dates	No. of participants	Level of participants (Ph.D./PG/UG)
1.	Analysis of Water Quality Parameters	Dhing K.B.H. S School	1 day/27 Feb,2012	20	Class X-XII
2.	Students visit to R&D Lab	RSC Guwahati/RRL	3days/22Mar,2012	15	B.Sc Students
3.	Obesity awareness camp and nutrition camp:Phase:I	Revenue Circle Office Dhing	1 day/17 th May, 2013	35	Employees and Adults
4.	Obesity awareness camp and nutrition camp:Phase:II	Dhing K.B.H. S School	1 day/24 th May, 2013	28	Schools Teachers and Adults
5.	Obesity awareness camp and nutrition	Dhing Girls	1 day/30 th May,	22	Schools Teachers

	camp:Phase:III	High School	2013		and Office Staff
6.	Obesity awareness camp and nutrition camp:Phase:IV	Batadrava Development Block,Nagaon	1 day/3 rd June, 2013	30	Office Staff

7.	Organized Dhing Book Fair and discussion session on “Impact of book fare on mental development of Children.”	Dhing Ratna Bhawan	3 days /29 th -31 st Jan, 2014		Students, Childrens, Resource Persons and Public
8.	Students visit to R & D Lab of MBBT Department Tezpur University	Tezpur University	2 days	25	B.Sc Students
9.	“Techniques of isolation and Detection of Bacterial Contaminants of Dry Fishes from Local Fish Market.”	Dhing College in association with DRDA Fishery Deptt. Nagaon	2 days/26 th -28 th Sep,2014	21	Students and Teachers
10.	Students visit to important botanical places	Veloghat, Karbianglong	2 days/24 th -25 th Aug,2015	30	UG Students
11.	Students visit to Krishi Vigyan Kendra,Nagaon	AAU Regional Research Centre, Nagaon	2 days/14 th -15 th Feb,2015	44	UG Students
12.	Outreach programme and field trip to Kaziranga Biodiversity and Orchid Park	Kaziranga Orchid and Biodiversity Park	1day/3 rd Feb, 2016	42	UG Students
13.	Awareness programme on THYROID(TSH) in association with Abott Pharma	Dhing Puja Bari	1 day/26 th Feb,2016		Teachers & Students

14.	Interschool science Quiz Competition jointly organized by BT Hub and BLiSS,JNV,Nagaon and Dhing.	Host Institution	1 day/8 th Mar,2016	39	Students representing Local School
15.	A National Environmental Awareness Camp was organized on the theme “Biodiversity And Information on Medicinal and Aromataic Plants of North East India”	Dhing College	1 day/29 th Mar,2016	47	Teachers & Students
16.	Students Orientation Programme for participation in National Science Olympiad(NSO) Examination/2015 in Collaboration with Science Olympiad Foundation (SOF), New Delhi[Regular Programme]	Dhing College	3 days/7 th - 9 th August	178	Students from Five local schools including the host institution.
17.	Programme on National Science Day on the “Theme Science and Technology for especially abled person”	Dhing College	1 Day/28 th Feb,2017	20	Students
18.	Students Field Trip and outreach programme to study the vegetation mapping near Tegheria,Khetri,Kamrup,Assam.	Dhing College	1 Day/7 th Feb,2017	43	Students and Teachers
19.	Demonstration of students project and paper presentation in “North Eastern Regional Conference and Exhibition on Promotion and Protection of Traditional Health Care Remedy(Papothecary)- 2017” in Gauhati University Assam	Gauhati University	3 days/24 th - 26 th March,2017	12	Students and Research Fellows
20.	World Environment Day Celebration Organized Essay and Open Quiz Competition on Environment and Plantation Drive.	Host Institution	1 day/5 th June,2017		Students and Teachers
21.	Outreach Programme to AAU-Krishi Vigyan Kendra,Shillongoni,Nagaon	Dhing College	2 days/28 th - 29 th Nov,2017	20	B.Sc 1 st Sem Botany
20.	Field trip to Panimur Dima Hasao	Dhing College	1 day/6 th Feb,2018	40	B.Sc 2 nd &6 th Sem Students Botany
22.	Social Awareness and Screening Programme on Movie “Pad Man”	Dhing College	1 day/14 th Mar,2018	52	Students and Teachers

23.	Observed National Science Day, Quiz and Essay Competition	Dhing College	28 th Mar,2018	74	Students and Teachers
24.	World Environment Day Celebration . Organized Essay and Open Quiz Competition on Environment and Plantation Drive.	Dhing Public School	1 day/5 th June, 2018	250	Students, Teachers, students of other schools, Resource Persons, Faculties .

(c) Invited lectures offered at host/neighboring schools or institutions:

Sl. No.	Name of the resource person	Topic	Organized by	Duration & Date
1	Dr. Ramesh Nath	“Seribiodiversity in Assam and N.E”	Host Institution(Dhing College)	1 day/20 th Feb, 2015
2	Dr. S.K. Nath & Dr. M.K.Saikia	“Conservation of Traditional Knowledge System in Assam.”	Host Institution(Dhing College)	1 day/27 th Feb, 2015
3	Dr. M.K.Saikia	Science Teachers (TGT) Orientation Programme	JNV Dhing	1 day/28 th June, 2015
4	Dr. M.K.Saikia	Biotechnology Prospects	Bliss, JNV Dhing	1 day/8 th Mar, 2016
5	Manikongkona Katak	Demonstration on Biological technioques	Bliss, JNV Dhing	1 day/25 th Mar, 2016
6	Dr. Banashree Sahariah	Environmental Biotechnology	Dhing Public School	1 day/5 th June,2018

(d)Whether any consultancy and mentoring services are being provided to other institutional Biotech hubs, BLiSS, Star College programme etc. in DBT.

- **Consultancy Services: Yes, hanholding services are regularly provided to nearby BLiSS. Full technical support has also been extended to Dhing K.B.H.S School &**

Maharshi Vidya Mandir (MVM) School Guwahati for preparation of their proposal for onward submission to DBT on free of cost. Besides, the Biotech Hub Dhing College has successfully conducted free Orientation Programme to Science students for participation in National Science Olympiad (NSO) Examination/2014-2015 among participation in National Science Olympiad Examination among students of local schools for which the Coordinator of the Biotech Hub has been appointed as Programme Coordinator by Science Olympiad Foundation (SOF), New Delhi to organize NSO events in Nagaon, Assam.

- **Monitoring Services: Yes, we have been providing full monitoring services to other Biotech Hubs/Senior Secondary Schools/BLiSS Centre such as 3 SSC, 1 BLiSS, 2 IBT Hub (Collaboration) and nearby institutions including the host.**

12. Whether any entrepreneurship trainings have been conducted/activities initiated in neighboring NER areas:

- **Yes, we have conducted two entrepreneurship trainings in neighbouring areas of Nagaon District, Assam where a large number of students and teachers of the host institution and NGO activist actively participated. The entrepreneurship trainings are as follows:**
 - 1. Food Processing Cum Preservation :** Workshop cum training on “Food Processing Cum Preservation” in association with District Food Preservation Centre, Govt. of Assam, Nagaon, Assam.
 - 2. Aquarium Making and Ornamental Fish Culture:** Workshop cum training on “Aquarium making and Ornamental Fish Culture” organized in collaboration with Matchyagandha Ornamental Fish Farm & Panchajanya Janakalyan Kendra, Dhing, Nagaon, Assam. This programme is chaired by V.V. Raju, Assistant Director, Marine Production Export Development Authority Of India, Guwahati Regional Office.

13. Impact on socio-economy of Biotech Hub in the State/Region for last 10 years:

The Biotech Hub has a tremendous impact on the socio-economy status of the state as well as in the entire region of Dhing Town. As it is the only research institute with modern tools and techniques in the area, the Hub has been the source of learning and skill development for the teachers and students of the college as well as the students of nearby educational institute. The vision of the Hub is to produce human resource tailored to drive innovation/awareness in biotechnology particularly in areas of new opportunity and thus fill the void in talent gap in the deficient areas. It has created an Infrastructure easily accessible to the faculties and students of the college which has

been of immense help in smooth running of the College. The Biotech Hub of the Dhing College has been working independently as learning resource centre for promotion of Biotechnology education, Training, Research among graduates and undergraduate students of the Institute and entire locality. The workshops, entrepreneurship trainings /seminars organized by Biotech Hub provide great opportunities for economic development of the entire locality. The training on Food Processing and Aquarium Making and Ornamental Fish Culture are of great economic importance which enhances the socio-economic status of the state. The Hub has supported many diploma courses viz. Solid Waste Management and Vermicomposting, Laboratory tools and techniques, Herbal medicinal Plant Processing which have also been a great initiative towards learning innovative technology in rural areas and implementing it for socio-economic development.

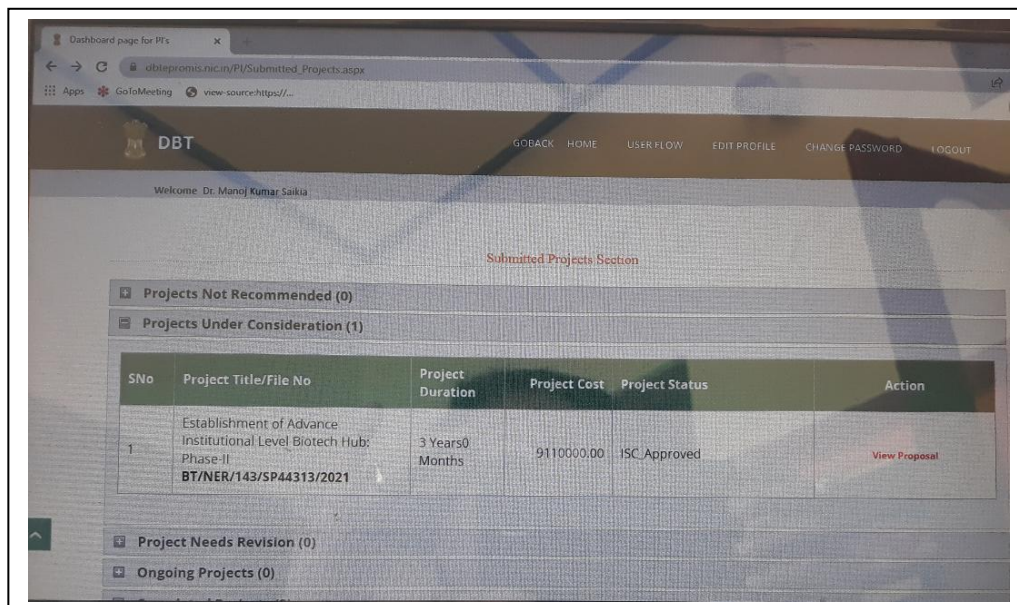
14. Difficulties/hurdles faced in the implementation of the program:

[Many problems and difficulties were faced by the Coordinator of the Hub in setting up the laboratory for the first time as the Hub is situated in a remote area. Problems like poor network coverage, transportation and communication hindered a lot in setting infrastructure of the Hub. However with due course of time, by the technical support & guidance by State Biotech Hub and funding by DBT all the problems came to ease. The Hub has now a well equipped infrastructure facility to support disciplinary and interdisciplinary education, training and research works in biotechnology and allied fields under financial and technical support from NER-BPMC, DBT, Govt. of India. Besides, majority of Biotech Hubs of North-East Region have not been recognized as the Ph.D research laboratory by the concerning affiliating university since its inception for which a large number of research fellows of the state do not apply for JRF/SRF as they could not be enrolled for PhD work at the hub. However, it would have been very fruitful if the Coordinator or PI of the Hub would be recognized as Ph.D mentor or Guide.

15. Future action plan of the Biotech Hub (500 words):

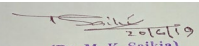
- (i) Research Activities (please provide specific research plan relevant to the state specific needs, its objectives and intended outcomes): **The screening Screening Committee of HR Department of Biotechnologist, GOI has Commented the Biotech Hub of Dhing College[Phase-I] as VERY GOOD and recommended for Phase-II Level. . Therefore the Coordinator of the Biotech Hub, Dhing College has submitted an proposal**

through DBT epromis to execute a specific research plan based on the local needs of the state along with the existing/new Research personals of the Hub entitled “Establishment of Advance Institutional Level Biotech Hub [Phase-II] BT/NER/143/SP44313/2021”. The proposal is under Consideration as follows:

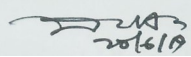


(ii) **Future Support to the neighboring institutions:**

The Biotech Hub will definitely support the neighbouring educational and research institutions as always if the tenure of the Biotech Hub extends for Phase-II level. The hub will definitely encourage the students of nearby localities to undertake project work related to local needs and will provide all the necessary services needed to fulfill their requirements. Besides the workshops and trainings will be organized in more numbers on need based programme which will enhance skill and technical knowledge to a large extent.


 (Dr. M. K. Saikia)
 Coordinator cum P.I.
 Institutional Biotech Hub
 (Estd. under DBT, of Govt. of India)
 Dhing College, Nagaon, Assam (India)

Dr. Manoj Kr.Saikia
 (Name & signature of Coordinators)


 20/6/19

Principal
Dhing College
Dhing- 782123

(Dr. Sarat Kr. Dutta. Principal)
 (Name & signature of the Head of the
 Institution/Organization with seal)

Annexure-I

Office of the Head of Department of Botany
Dhing College: Nagaon(Assam)
Email: dhingcollege.co.in



Feedback certificate

- This is to certify that the Advance Institutional Level Biotech Hub ,Dhing College established in 2010 under NER-BPMC of Department of Biotechnology ,GOI had extended all necessary curricular based practical training/ demonstration/ fieldtrips /workshops/ students projects to the students of Botany department .
- **As regards to the students:** Since inception near about 275 *UG students of Botany major & Pass course* , 50 *UGC-COP diploma students of Herbal & Medicinal plant processing courses*, 365 *students of Higher Secondary (+2) stages* were highly benefited from BTHub as regards to their uses of infrastructural facilities, high quality laboratory equipments & guidance by the PI and research personal of the Hub. The active participation of our HS students in National Science Olympiad Examination (NSO) under guidance and mentoring of BTHub is highly remarkable.
- **As regards to the faculties :** Four faculty members of our departments is directly benefited from the hub in terms of the uses of infrastructural & instrumental facilities provided to us. More over a good number of student's projects related works are done at the Hub.
- **As regards to the online/counseling facilities :** A good number of students took the advantage of online facilities of the Hub for applying admission related or any other application related matter with a minimum fees.
- **The hub has been recognized as HELP DESK of the college for online admission process w.e.f 2019.**

Date: 17/06/2019

Sanjeeb Kr. Nath
(Dr. Sanjeeb Kr. Nath)

Associate Professor & HOD

Email: sanjeebkumarnath@gmail.com ::::: PhoneNo. 09435362010(M)

HOD
Department of Botany
Dhing College



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Feedback certificate

- This is to certify that the Advance Institutional Level Biotech Hub ,Dhing College, established in 2010 under NER-BPMC of Department of Biotechnology ,GOI had extended all necessary curricular based practical training/ demonstration/ fieldtrips /workshops/outreached programme/ students projects to the students of Zoology department .
- **As regards to the students:** Since inception near about **238 UG students of Zoology major & Pass course , 67 UGC-COP diploma students of Fishery & poultry farming courses, 427 students of Higher Secondary (+2) stages** were highly benefited from BTHub as regards to their uses of infrastructural facilities, high quality laboratory equipments & guidance by the PI and research personal of the Hub. The active participation of 198 HS students in National Science Olympiad Examination (NSO) under guidance and mentoring of BTHub is highly remarkable.
- **As regards to the faculties :** Three faculty members of our departments is directly benefited from the hub in terms of the uses of infrastructural & instrumental facilities provided to us. As Co-coordinator of the hub Dr. R.Nath, Associated professor from zoology dept. had published papers in many reputed journals & also attended international conference in abroad. More over a good number of student's projects guided by zoology teacher and related to Zoological/ Seri diversity works are mostly performed in the biotech hub. ***Kumar Kitartha Kaushik a DBT inspire fellow of this college utilized the facilities of Biotech Hub for completion of his project work.***
- **As regards to the online/counseling facilities :** A good number of students took the advantage of online facilities of the Hub for applying admission related or any other application related matter with a minimum fees.
- **The hub has been recognized as HELP DESK of the college for online admission process w.e.f 2019.**

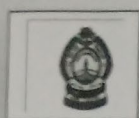
Date: 17/06/2019

(Dr. Ramesh Nath)

Associate Professor & HOD

Email:rameshnathdhing@gmail.com phone No.8638726781(M)

Head
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Dhing College, Nagaon (Assam)



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Feedback certificate

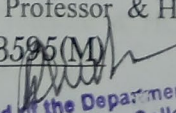
- This is to certify that the Advance Institutional Level Biotech Hub, Dhing College, established in 2010 under NER-BPMC of Department of Biotechnology ,GOI had extended all necessary curricular based practical training/ demonstration//workshop/ students projects to the students of Physics Department .
- **As regards to the students:** The UG students of the Physics Department have been highly benefitted from the Biotech Hub since inception. Instruments like Lux Meter, Audio Frequency Oscillator, Stefan constant equipment set, Digital Colorimeter, Anderson Bridge with headphone, C-14/meade reflector telescope(Astronomical), Bi-prism assembly with optical lens etc. have been greatly utilized by the students. Moreover, the students of Physics Department have participated in the Night Sky Observation Programme organized by BT Hub. The students of Physics Department regularly participated in National Science Olympiad Examination (NSO) under guidance and mentoring of BTHub.
- **As regards to the faculties :** The faculty members of Physics department is highly benefited from the hub in terms of the uses of infrastructural & instrumental facilities.
- **As regards to the online/counseling facilities :** A good number of students from the Department took the advantage of online facilities of the Hub for applying admission related or any other application related matter with a minimum fees.
- **The hub has been recognized as HELP DESK of the college for online admission process w.e.f 2019.**

Date: 17/06/2019

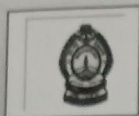
(Rabindra Sarma Borah)

Associate Professor & HOD

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Head of the Department
Physics, Dhing College
Dhing, Nagaon

Office of the Head of Department of Chemistry
 Dhing College: Nagaon(Assam)
 Email: dhingcollege.co.in



Feedback certificate

- This is to certify that the Advance Institutional Level Biotech Hub, Dhing College, established in 2010 under NER-BPMC of Department of Biotechnology ,GOI had extended all necessary curricular based practical training/ demonstration//workshop/ students projects to the students of Chemistry Department .
- **As regards to the students:** The UG Major students of the Chemistry Department have been highly benefitted from the Biotech Hub since inception. Instruments like *UV-Visible Spectrophotometer, Flame photometer, Digital pH Meter, Distillation Plant, Kjeldahl distillation unit* etc. have been greatly utilized by the students for their analytical works. Besides, students projects related to water quality analysis are mostly performed in the Hub. Moreover, the HS students of Chemistry Department have also participated in National Science Olympiad Examination (NSO) under guidance and mentoring of BT Hub.
- **As regards to the faculties :** The faculty members of Chemistry Department are highly benefitted from the hub in terms of the uses of infrastructural & instrumental facilities.
- **As regards to the online/counseling facilities :** A good number of students from the Department took the advantage of online facilities of the Hub for applying admission related or any other application related matter with a minimum fees.
- **The hub has been recognized as HELP DESK of the college for online admission process w.e.f 2019.**

Date: 17/06/2019

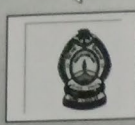
Binod Bora
18/6/19

(Binod Bora)

Associate Professor & HOD

Email: dhingcollege@gmail.com Phone No. 9207118948(M)

Head
 Dep. Of Chemistry
 Dhing College, Dhing
 Nagaon, (Assam)



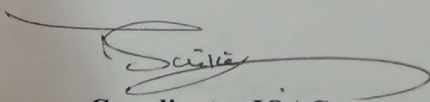
Office of the Internal Quality Assurance
Cell(IQAC)
Dhing College: Nagaon(Assam)

Feedback certificate

This is to certify that the Advance Institutional Level Biotech Hub, Dhing College, established in 2010 under NER-BPMC of Department of Biotechnology, Govt. of India had extended all necessary curricular based practical trainings/research/ demonstration//workshop/ students projects to the students and teachers community of the college.

The NAAC peer team highly praised the activities of the Biotech Hub, Dhing College. The NAAC peer team has visited the Hub on September, 2017 and interacted with the Hub personals, inspected all documents, sanction orders, feed backs, SE & UC etc. The college had been able to achieve B⁺⁺ **Grade particularly** scored 3.20 points in **Criterion III (Research & Consultancy, Extension) of SSR report by the NAAC peer team** where most of the research activities were done by the Biotech Hub.

Date: 17/06/2019



Coordinator IQAC

Dhing College

Coordinator, IQAC
Dhing College

Email:dhingcollege@gmail.com Phone No. 8638074107(M)

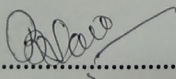
Governing Body Dhing College

Resolution adopted in the GB Meeting held on 04/06/2019

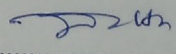
Resolution No:3

The principal & Secretary placed an application submitted by the Coordinator of Biotech Hub, Dhing College. The Governing Body has made a threadbare discussion on Biotech Hub of the college. The committee has expressed its full satisfaction on the Biotech Hub for successful completion of 8(eight) years of its existence since inception. Based on a recent circular issued by DBT on 05/04/2019 regarding extension deadline of the hub as on 19th June/2019, the committee resolved to halt its financial transaction of the hub w.e.f 20/06/2019 until further order/extension by DBT. The hub has still an excess/ spare amount of Rs 9.56 Lakhs (approx) in recurring heads (manpower).

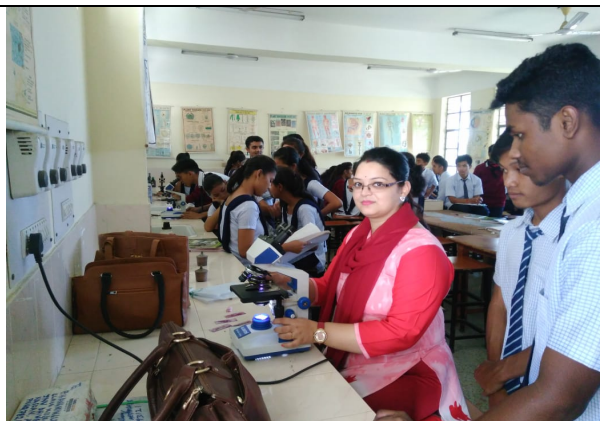
The committee therefore resolved to make an appeal to DBT for further extension of the period beyond 20th June 2019 based on the consolidated progress report to be submitted by the Hub. Finally the Committee acknowledged its gratitude to NER-BPMC, DBT, Government of India for its fundings, technical support & guidance for establishment of Advance Institutional Level Biotech Hub at Dhing College (Assam)


.....
Sri Bakul Ch. Sarmah
President
Governing Body

President
Governing Body
Dhing College


.....
Dr. Sarat Kr. Dutta
Principal
Principal/Secretary
Principal & Secretary
Dhing College
Dhing - 782123

Few Photoplate of the Hub



Supervising Students Projects at mentoring Institution JNV Dhing



Workshop on Microbiology



Workshop on ICT enabled Teaching & Learning



Workshop on Bioinformatics





Out Reached Programme



Workshop on PCR



Workshop on PCR



Workshop on PCR & Electrophoresis.



Biotech Hub conducting National Science Olympiad (NSO) Examination



Biotech Hub conducting ICT Teaching & Learning .

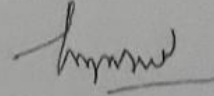
**The DBT Sanction Letter for Advance Institutional Level Biotech
Hub:**

Total budget for one Hub for three years (6th, 7th & 8th) : ₹ 78.55 lakhs
Sixth Year release : ₹ 29.23 lakhs

- The other terms and conditions governing the financial sanction will remain unaltered.
- The account of the guarantee institution shall be open to inspection by the sanctioning authority/audit
- M/s Biotech Consortium India Ltd., Anuvrat Bhawan, 210, Deen Dayal Upadhyay Marg, New Delhi-110 002, who is administering the North Eastern Region Biotechnology Program Management Cell (NER-BPMC) of the department, is hereby authorized to disburse the amount of ₹ 78.55 lakhs (Rupees Seventy Eight lakhs and Fifty Five Thousand only), for a period of three years, as referred in para 1 above, in favour of, fund receiving authorities of the following 1 Institutes as given below, through an account payee cheque/demand draft/bank transfer.

Sl.no.	Name of Institutes	Fund receiving Authorities
1	Dhing College, Nagaon-782123, Assam	The Principal, Dhing College, Nagaon-782123, Assam

- This issue under the powers delegated to the department and with the concurrence of IFD, DBT vide. Dy No/102/I.F.D/SAN/3926-3929/2016-2017 Dated 20.02.2017.
- This sanction order has been noted at Serial No..... in the Register of Grants.

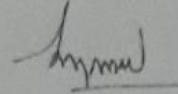


(Dr. T. Madhan Mohan)
Adviser

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

- Copy to:
- The Principal Director of Audit (Scientific Department), AGCR Building, New Delhi -110 002.
 - Cash Section, DBT (For information only).
 - Sanction Folder.
 - IFD, DBT.
 - The Principal, Dhing College, Nagaon-782123, Assam.

5. Mr. Manoj Kumar Saikia, Coordinator, Institutional Biotech Hub (IBI Hubs), Dhing College, Nagaon- 782123, Assam.
7. Concern File.
8. The Managing Director, Biotech Consortium India Limited, (NER-BPMC), 5th Floor, Anuvrat Bhawan, 210, Deen Dayal Upadhyay Marg, New Delhi- 110002.



(Dr. T. Madhan Mohan)
Adviser

File No. BT/04/NE/2009
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
(NER-BPMC)

Block-2, 7th Floor,
CGO Complex, Lodhi Road
New Delhi-110003
Dated: 31/03/2017

ADMINISTRATIVE ORDER

In continuation of this department's sanction order of even number dated 21/09/2010, sanction of the President of India is hereby accorded under Rule 18 of the Delegation of Financial Powers Rules, 1978 for the release of the three years grant (6th, 7th & 8th year) of ₹ 78.55 lakhs (Rupees Seventy Eight lakhs and Fifty Five Thousand only) to the Advance Level Institutional Biotech Hubs (1 no.) of DIT under its special programme for North Eastern States of India:

Budget for each Advance Level Institutional Biotech Hub

(₹ in lakhs)

Heads	6 th Year (21.09.2015 to 20.09.2016)	7 th Year (21.09.2016 to 20.09.2017)	8 th Year (21.09.2017 to 20.09.2018)	Total
I. Non- Recurring				
Equipment	10.00	10.00	0.00	20.00
Sub Total (I)	10.00	10.00	0.00	20.00
II. Recurring				
Manpower – Research Associate (1)	5.18	5.18	5.18	15.54
JRF/SRF (2)	7.20	7.20	8.06	22.46
Operational Expenditure (Contingency & Consumables including maintenance of equipments)	4.00	4.00	4.00	12.00
Travel	0.50	0.50	0.50	1.50
Training/Workshop	1.00	1.00	1.00	3.00
Overhead charges	1.35	1.35	1.35	4.05
Sub Total (II)	19.23	19.23	20.09	58.55
Grand Total (I+II)	29.23	29.23	20.09	78.55

[Signature]