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Admin Order

No. BT/PR41760/NER/95/1856/2021
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
(NER-BPMC)

Block 2, 6-8th Floors
CGO Complex, Lodhi Road,
New Delhi- 110 003
Dated: 30/03/2021

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 entitled: "**Exploring Nutraceutical Potential of Shiitake (Lentinula edodes) and Maitake (Grifola frondosa) Mushrooms and Promotion of its Production for Entrepreneurial and Socioeconomic Livelihood in North East India**" for a period of 3 Year 0 Month at a total cost of Rs. **17423405/-** (Rupees One Crores Seventy Four Lakhs Twenty Three Thousand Four Hundred and Five Only) on the terms and conditions detailed here under:-

2 The Project :

2.1 Title : "**Exploring Nutraceutical Potential of Shiitake (Lentinula edodes) and Maitake (Grifola frondosa) Mushrooms and Promotion of its Production for Entrepreneurial and Socioeconomic Livelihood in North East India**"

2.2 Details of the Investigators:

Project Coordinator

Dr. Susheel Kumar Sharma

Scientist

Department of Plant Pathology

ICAR Research Complex for NEH Region, Manipur Centre,
Lamphelpat, Imphal - 795004, Manipur

Principal Investigators:

Dr. Susheel Kumar Sharma

Scientist

Department of Plant Pathology

ICAR Research Complex for NEH Region, Manipur Centre,
Lamphelpat, Imphal - 795004, Manipur

Dr. Debasish Borbora

Assistant Professor

Department of Biotechnology

Gauhati University

Kamrup - 781014, Assam

Dr. Rajeev Sarmah

Associate Professor

Department of Botany

Assam Down Town University

Gandhi Nagar, Kamrup - 781026, Assam

Vaishali

डॉ. वैशाली पंजाबी / Dr. VAISHALI PANJABI
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Dr. Veda Krishnan

Scientist
Department of Biochemistry
ICAR- Indian Agricultural Research Institute (IARI), Pusa
Campus,
New Delhi - 110012

Mr. Pranjal Baruah,

General Secretary, Mushroom Development Foundation
(MDF), Uzanbazar, Guwahati - 781001, Assam

CO-PI:

Dr. Raghuvver Singh

Scientist
Department of Plant Pathology
ICAR Research Complex for NEH
Region, Basar - 791101, Arunachal
Pradesh

Dr. Minakshi Bhattacharjee

Associate Professor
Department of Biotechnology
Assam Down Town University, Gandhi
Nagar, Kamrup - 781026, Assam

Dr. Mohammad Imtiyaj Khan

Assistant Professor
Department of Biotechnology
Gauhati University
Gopinath Bordoloi Nagar, Kamrup -
781014, Assam

Dr. Subhra Saikat Roy

Senior Scientist
Department of Horticulture
ICAR Research Complex for NEH
Region, Manipur Centre, Lamphelpat,
Imphal-795004, Manipur

Dr. Arati Ningombam

Scientist
Department of Agricultural
Entomology
ICAR Research Complex for NEH
Region, Manipur Centre, Lamphelpat,
Imphal - 795004, Manipur

Dr. Anil Dahuja

Principal Scientist
Department of Biochemistry
ICAR- Indian Agricultural Research
Institute (IARI), Pusa Campus, New
Delhi - 110012

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भारत सरकार, नई दिल्ली / Govt. of India, N. Delhi

2.3 Objectives:

Overall Objectives:

1. Large scale evaluation, validation and need based refinement of the cultivation technology of Shiitake (*Lentinula edodes*) and Maitake (*Grifola frondosa*) mushrooms using locally available substrates
2. Exploration of agripreneurial potential of Shiitake and Maitake mushrooms through supply of quality spawn and skill development on mushroom production technologies to farmers and local growers including unemployed women of North East India
3. Evaluation of nutraceuticals and bioactive compounds of Shiitake and Maitake mushrooms
4. Utilizing mushroom spent substrate for the production of vermicompost

Institute wise Objectives:

Assam Down Town University

1. Exploration of agripreneurial potential of Maitake mushroom through supply of quality spawn and imparting training towards capacity building on mushroom production technologies to farmers and local growers including unemployed women of Northeast India
2. Utilizing mushroom spent substrate for the production of vermicompost

Gauhati University

1. Large scale evaluation, validation and need based refinement of the cultivation technology of Maitake (*Grifola frondosa*) mushroom using locally available substrates
2. Exploration of agripreneurial potential of Maitake mushroom through supply of quality spawn and imparting training towards capacity building on mushroom production technologies to farmers and local growers including unemployed women of Northeast India
3. Evaluation of nutraceuticals of Maitake mushroom, identification of diseases and competitive inhibitor organisms that effect productivity under local conditions

ICAR Research Complex for North East Hill Region

1. Large scale evaluation, validation and need based refinement of the cultivation technology of shiitake mushroom using locally available substrates
2. Exploration of agripreneurial potential of shiitake mushroom through skill development and nutritional branding based on scientific validation

ICAR-Indian Agricultural Research Institute

1. Evaluation of key bioactives and validation for their anti-hyperglycaemic, anti-ageing and anti-cancerous activities using in vitro models in the shiitake germplasm of NER for nutritional labeling

2.4 Time Schedule:

The duration of the project is 3 Year 0 Month from the date of this sanction order.

2.5 Project Cost:

The total cost of the project is Rs. **17423405/-** (Rupees One Crores Seventy Four Lakhs Twenty Three Thousand Four Hundred and Five Only) as per details given below :

Institute	Year I	Year II	Year III	Total Cost(Rs.)
1. ASSAM DOWN TOWN UNIVERSITY	528400	528400	378400	1435200
2. Gauhati University	2490155	1992975	1454755	5937885
3. ICAR Research Complex for North East Hill	3135040	1385040	1436880	5956960

Region				
4. Indian Agricultural Research Institute	2211280	1111280	770800	4093360
Total (Rs.)	8364875	5017695	4040835	17423405

Institute wise details are:

Budget Head	Year I	Year II	Year III	Total(Rs.)
1. ICAR Research Complex for North East Hill Region				
Equipment	1650000.00			1650000.00
Manpower	635040.00	635040.00	686880.00	1956960.00
Overhead	50000.00	50000.00	50000.00	150000.00
Travel	50000.00	50000.00	50000.00	150000.00
Consumables	700000.00	600000.00	600000.00	1900000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Total (Rs.)	3135040.00	1385040.00	1436880.00	5956960.00
2. Gauhati University				
Equipment	200000.00			200000.00
Manpower	916800.00	916800.00	916800.00	2750400.00
Overhead	50000.00	50000.00	50000.00	150000.00
Consumables	350000.00	300000.00	300000.00	950000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Cost of Training & Demonstration Unit	923355.00	676175.00	137955.00	1737485.00
Total (Rs.)	2490155.00	1992975.00	1454755.00	5937885.00
3. Indian Agricultural Research Institute				
Equipment	1100000.00			1100000.00
Manpower	461280.00	461280.00	520800.00	1443360.00
Overhead	50000.00	50000.00	50000.00	150000.00
Travel	50000.00	50000.00	50000.00	150000.00
Consumables	500000.00	500000.00	100000.00	1100000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Total (Rs.)	2211280.00	1111280.00	770800.00	4093360.00
4. ASSAM DOWN TOWN UNIVERSITY				
Manpower	278400.00	278400.00	278400.00	835200.00
Overhead	50000.00	50000.00	50000.00	150000.00
Consumables	150000.00	150000.00		300000.00
Contingency	50000.00	50000.00	50000.00	150000.00

Total (Rs.)	528400.00	528400.00	378400.00	1435200.00
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2.6 Equipment:

The details of the equipment sanctioned for the implementation of the project at **Annexure-I**

2.7 Manpower:

The details of the manpower sanctioned for the implementation of the project at **Annexure-II**

3. Head of Account:

The **Non-Recurring** expenditure involved is debitable to:

Demand No. 88	Department of Biotechnology
3425	Other Scientific Research 2020-2021
3425.60	Others (Sub Major Head)
3425.60.200	Assistance to other Scientific Bodies (Minor Head)
3425.60.200.29	Biotechnology Research and Development
3425.60.200.29.17	Assistance for Research and Development
3425.60.200.29.17.35	Grants for creation of capital assets

The **Recurring** expenditure involved is debitable to:

Demand No. 88	Department of Biotechnology
3425	Other Scientific Research 2020-2021
3425.60	Others (Sub Major Head)
3425.60.200	Assistance to other Scientific Bodies (Minor Head)
3425.60.200.29	Biotechnology Research and Development
3425.60.200.29.17	Assistance for Research and Development
3425.60.200.29.17.31	Grants -in-Aid General

4. Terms & Conditions:

Additional Terms and Conditions

- Both NER and 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.
- In the project review meetings, both the PIs from NER and RoI Institutions should participate and make presentation.
- The outcomes of the project such as research papers, patents, copy rights etc. should be made jointly.
- The NER Scientists are to be trained at the collaborating institute appropriately to empower the NER Scientists.
- The project personal such as Research Associate, JRF or SRF, Research Assistant are also to be trained at least once in the collaborating national institute.
- The collaborating institute scientist should visit NER institutions more frequently to guide NER scientists in design and conduct of experiments.
- The Non-Recurring items must be procured and installed within 18-months of the sanction of the

project, failing which the PIs have to return the remaining/unutilized Non Recurring grant with 10% of Interest.

h. 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.

- 4.1** The other terms and conditions governing this sanction are attached at Annexure- III.
- 4.2A** Memorandum of Agreement (MoA) will be signed between the Department of Biotechnology and the grantee institution on Non-Judicial stamp paper Rs. 100/- in the enclosed format and the second release/installment will be made only after signing of MoA between the grantee institutions and DBT. In case of NGO's and Private Institution's, execution of MOA is mandatory before first release. A format of the MoA is enclosed in Annexure-IV
- 4.3** 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. If the institute fails to give the interest earned details, Overhead grant may be withheld in subsequent releases. **As per provision contained in the Rule 230 (8) of GFR 2017, all interest/other earning occurred against grant-in-aid shall be mandatorily remitted to the Consolidated Fund of India (CFI) through the online portal www.bharatkosh.gov.in only.**
- 5.** No International Travel will be undertaken from the sanctioned project grant unless specified otherwise.
- 6.** The Director, ICAR Research Complex for North East Hill Region, Shillong, Meghalaya and The Director, Indian Agricultural Research Institute, New Delhi, Delhi (UT) and The Registrar, Assam Down Town University, Guwahati, Assam and The Registrar, Gauhati University, Guwahati, Assam would be responsible for submission of Statements of Expenditure (SoE), utilization certificates (UC), Assets Certificates, Manpower staffing & expenditure details in prescribed DBT formats to DBT in respect of grants released in this project from time to time.
- 7.** PI's of DBT sponsored projects can consider appointment of JRF from Category-II merit list of DBT-BET exam so that candidates can be paid fellowships at par with NET/GATE/BET qualified candidates as per DST OM No. A.SR/S9/Z-05/2019 dated on 30 Jan 2019. However, there is no compulsion on PI's to select candidates for JRF in their projects from Category-II of DBT-BET.
- 8.** As per Rule 236 (1) of GFR 2017, the accounts of all Grantee Institutions or Organisations shall be open to inspection by the sanctioning authority and audit, both by the Comptroller and Auditor General of India under the provision of CAG(DPC) Act 1971 and internal audit by the Principal Accounts Office of the Ministry or Department, whenever the Institution or Organisation is called upon to do so.
- 9.** If the Research Project involves biological resources, the obligations under the Biological Diversity Act 2002 as applicable shall be complied with by the Project Investigator, the details of such obligations can be accessed at www.nbaindia.org
- 10.** If this project works requires any Statutory Clearance (such as Ethical Committee Clearance, Informed Consent, Animal Ethics Committee Clearance, Institutional Bio-safety Committee Clearance, National Biodiversity Authority approval etc.), Project investigator(s) and Host Institution(s) shall compulsory comply the same before undertaking such activities.
- 11.** This issues under the power delegated to this Department and with the concurrence of IFD vide their SAN No. **102/IFD/SAN/3240/2020-2021** dated **March 30, 2021**.
- 12.** This sanction order has been noted at serial no. 257-252 in the Register of Grants.

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(Dr. Vaishali Panjabi)

Scientist 'E'

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वैज्ञानिक 'ई' / Scientist 'E'

बायोटेक्नोलॉजी विभाग / Deptt. of Biotechnology

विज्ञान और प्रौद्योगिकी मंत्रालय / M/o Science & Tech.

भारत सरकार, नई दिल्ली / Govt. of India, N. Delhi

To,
The Pay & Accounts Officer,
Department of Biotechnology,
New Delhi – 110 003.

Copy to:

- 1 The Principal Director of Audit (Scientific Departments), DACR Building, New Delhi- 110 002.
- 2 The Director, ICAR Research Complex for North East Hill Region, Shillong - 793103, Meghalaya
- 3 The Director, Indian Agricultural Research Institute, Pusa Campus, New Delhi - 110012
- 4 The Registrar, Assam Down Town University, Gandhinagar, Guwahati - 781026, Assam
- 5 The Registrar, Gauhati University, Guwahati - 781014, Assam
- 6 Dr. Anil Dahuja, Principal Scientist, Department of Biochemistry, ICAR- Indian Agricultural Research Institute (IARI), Pusa Campus, New Delhi - 110012
- 7 Dr. Arati Ningombam, Scientist, Department of Agricultural Entomology, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal - 795004, Manipur
- 8 Dr. Subhra Saikat Roy, Senior Scientist, Department of Horticulture, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal-795004, Manipur
- 9 Dr. Mohammad Imtiyaj Khan, Assistant Professor, Department of Biotechnology, Gauhati University, Gopinath Bordoloi Nagar, Kamrup - 781014, Assam
- 10 Dr. Minakshi Bhattacharjee, Associate Professor, Department of Biotechnology, Assam Down Town University, Gandhi Nagar, Kamrup - 781026, Assam
- 11 Dr. Raghuveer Singh, Scientist, Department of Plant Pathology, ICAR Research Complex for NEH Region, Basar - 791101, Arunachal Pradesh
- 12 Dr. Veda Krishnan, Scientist, Department of Biochemistry, ICAR- Indian Agricultural Research Institute (IARI), Pusa Campus, New Delhi - 110012
- 13 Dr. Rajeev Sarmah, Associate Professor, Department of Botany, Assam Down Town University, Gandhi Nagar, Kamrup - 781026, Assam
- 14 Dr. Debasish Borbora, Assistant Professor, Department of Biotechnology, Gauhati University, Kamrup - 781014, Assam
- 15 Dr. Pranjal Baruah, General Secretary, Mushroom Development Foundation (MDF), Uzanbazar, Guwahati – 781001, Assam
- 16 Dr. Susheel Kumar Sharma, Scientist, Department of Plant Pathology, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal - 795004, Manipur
- 17 Cash Section, DBT (2 copies).
- 18 Sanction Folder.
- 19 File Copy.

Vaishali

(Dr. Vaishali Panjabi)

Scientist 'E'

डॉ. वैशाली पंजाबी / Dr. VAISHALI PANJABI
वैज्ञानिक 'ई' / Scientist 'E'
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भारत सरकार, नई दिल्ली / Govt. of India, N. Delhi

Annexure -I

Details of the Equipment sanctioned for the implementation of the project entitled "**Exploring Nutraceutical Potential of Shiitake (Lentinula edodes) and Maitake (Grifola frondosa) Mushrooms and Promotion of its Production for Entrepreneurial and Socioeconomic Livelihood in North East India**":

ICAR Research Complex for North East Hill Region			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	Controlled Temperature BOD Incubator	1	350000.00
2.	Laminar Air flow hood	1	300000.00
3.	Horizontal Floor Model Autoclave	1	400000.00
4.	Refrigerator Freezer	1	150000.00
5.	Automatic Temperature controller units with timer	1	100000.00
6.	Wood crusher	1	150000.00
7.	Bag filling machine	1	200000.00
Total			1650000.00
Gauhati University			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	Autoclave	1	35000.00
2.	pH meter	1	75000.00
3.	Analytical balance (0.1 mg)	1	90000.00
Total			200000.00
Indian Agricultural Research Institute			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	CO2 incubator	1	500000.00
2.	Cell imaging microscope	1	600000.00
Total			1100000.00

Vaishali

(Dr. Vaishali Panjabi)

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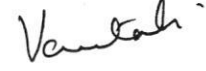
Annexure -II

Details of the manpower sanctioned for the implementation of the project entitled "**Exploring Nutraceutical Potential of Shiitake (*Lentinula edodes*) and Maitake (*Grifola frondosa*) Mushrooms and Promotion of its Production for Entrepreneurial and Socioeconomic Livelihood in North East India**":

Head	No. of Position	Year I	Year II	Year III	Total (Rs.)
1. ASSAM DOWN TOWN UNIVERSITY					
Research Assistant / Project Assistant @Rs. 20000/- + 16% HRA 1 st , 2 nd & 3 rd year	1	278400	278400	278400	835200
Total(Rs.)		278400	278400	278400	835200
2. Gauhati University					
Laboratory Assistant @Rs. 20000/- + 16% HRA 1 st , 2 nd & 3 rd year	2	556800	556800	556800	1670400
Field coordinator / Project Coordinator @Rs. 30000/- Fixed per month 1 st , 2 nd & 3 rd year	1	360000	360000	360000	1080000
Total(Rs.)		916800	916800	916800	2750400
3. ICAR Research Complex for North East Hill Region					
Field Worker @Rs. 18000/- + 8% HRA 1 st , 2 nd & 3 rd year	1	233280	233280	233280	699840
Project Associate-I @Rs. 31000/- + 8% HRA 1 st and 2 nd year	1	401760	401760	0	803520
Project Associate-II @Rs. 35000/- + 8% HRA 3 rd year	1	0	0	453600	453600
Total(Rs.)		635040	635040	686880	1956960
4. Indian Agricultural Research Institute					
Junior Research Fellow @ Rs. 31,000/+24% HRA 1 st &2 nd year and Senior Research Fellow @ Rs. 35,000/- + 24% HRA 3 rd year	1	461280	461280	520800	1443360
Total(Rs.)		461280	461280	520800	1443360

Vaishali

Emoluments detail of research personal(s) mentioned in table(s) of Annexure-II shall be applicable only if candidate(s) met educational qualification and eligibility criteria as per DST OM No. SR/S9/Z-08/2018 dated 30.01.2019 for JRF/SRF/RA and OM No. SR/S9/Z-05/2019 dated 10.07.2020 for all other categories.



(Dr. Vaishali Panjabi)
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