

PROJECT COMPLETION REPORT

(2016-2020)



BBSRC (University of Nottingham) sponsored research project

on

Enhancing Food Security in Rural India



Department of Energy, Tezpur University

Tezpur, Assam 784028

Project Title: Enhancing Food Security in Rural India

Principal Investigator: Prof. Debendra Chandra Baruah

Starting date of project: 12.01.2017

Completion date of project: 31.03.2020

Estimated fund: INR 3,00127

Completed fund: INR 3,00127

Introduction

This project engaged with smallholders in a remote village named Jhawani, Sonitpur district of Assam, India, to encourage sustainable use of organic inputs in order to improve crop nutrient use efficiency and yields. As part of a different project a community-scale anaerobic digester was built to satisfy the energy needs of the villagers. The resulting digested slurry is a vital fertiliser, but without knowledge of the nutrient content, the fertility of the soils and the nutrient requirements of the crops, inappropriate use could result in scorched plants or contaminated water. In this project, we aimed to work with the community members to develop best agronomic practices so the slurry can be used effectively. This will improve crop yields, and produce value added products thereby benefiting the health and economic welfare of the community. The nitrogen-deficient alluvial soils of the area are typical across India and other parts of the world, as is anaerobic digestion; this project is therefore pertinent to areas outside this model community.

Suitable utilization of bioenergy by-products (digestate) determines the success and acceptability of bioenergy conversion technology. There is a need of management of these by-products along with the production of biogas, for a comprehensive

assessment and sustainability of bioenergy technology, Biogas digestates are rich in plant nutrients as they retain nutrients from input raw material. The presence of nitrogen in mineralized form (ammonia-nitrogen) and increased bioavailability of plant nutrients make these a suitable consideration as soil applicant. Therefore, till now the most common application of digestate is through their recycling as soil applicant, which can promote the closing of nutrient cycle. However, direct application of digestates has some limitations such as introduction of contaminants originating from feedstock, handling and transportation problem due to its bulky nature. This indicates the need of research to search for multiple end uses and other valorisation options of digestates.

In this context, use of digestates as nutrient supplement in mushroom cultivation was considered favourable. Mushroom is an excellent source of dietary components such as protein, vitamins, minerals, folic acid, low in fat and carbohydrates. Mushroom industry is gaining momentum as efficient and economically viable process for converting lignocelluloses residue into high-quality protein food. Worldwide production of mushrooms is seen increasing. It is to be mentioned that mycelium from a mushroom culture is usually collected onto grain. This grain/mycelium mixture is called spawn, which is the material used to transfer mycelium onto any material (substrate) from which mushrooms will grow. The state-of-the-art research focus in global mushroom industry includes technological developments through increased production, innovations in cultivation technologies, valorisation of final product and utilization of mushrooms' natural qualities for environmental benefits.

Project activities

In this project, the effects of liquid digestate supplement on mushroom growth, cultivation was carried out in the Department of Energy, Tezpur University during the month of December to February. The site had climatic conditions typical of the cool wet winters and dry summers. During the experimental period, the temperature range was in the range of 8–29 °C and relative humidity range was 58–93%.

Oyster mushroom (*Pleurotus* spp.) belonging to class Basidiomycetes and family Agaricaceae is the most widely cultivated mushroom in India owing to its simple cultivation technology, high nutritional value, short growth cycle, low production cost and its adaptability to a wide range of substrates. It possesses high bioconversion ability, i.e. more than 60%. The best temperature range for oyster mushroom cultivation is 20–30 °C along with a humidity range of 80–85%. Oyster species can utilize wide range of crop residues or substrate materials such as agricultural, forests and agro-industrial by-products such as wheat straws, rice straws, banana leaves, corn cobs, sawdust, and bean straws due to their great adaptability.

For the experimental work, *Pleurotus* (*P. florida*) spawns grown of wheat grains were collected from Defence Research Laboratory, Tezpur, that works under Department of Defence Research and Development of Ministry of Defence.

Anaerobic digestate was collected from the digestate storage tank of a household cow dung fed (feed rate: 20-25kg/day) biogas plant situated in the Amolapaam area near to Tezpur University campus.

Digestate was separated by manual pressing using 150-micron filter bags to get the liquid fraction of the digestate. The separated liquid digestate used in the experiment was stored at 4 °C until application.

Collected digestate was characterized for pH and electrical conductivity (EC) in a homogenized water suspension with water in the ratio of 1:10 (dry weight/volume) after agitating for 15 min using pH (Systronics digital pH meter 802) and electrical conductivity meters, respectively. Total solid (% fresh matter) was determined by drying at 105 °C for 24 h. Organic matter (total organic carbon) was determined by loss on ignition at 550 °C for 10 h. Plant nutrients (N, P, K, Cu, Fe, Mn, Zn, Ca, Mg, S) and heavy metals (Pb, As, Cd) were determined using ICP analysis.

Rice straw was used as a base substrate material in the experiments, which was collected from local farmers place after harvesting. For preparation of mushroom substrate, rice straw was first pasteurized by dipping in hot water (80–90 °C) for 2 h. The pasteurized rice straw was soaked overnight for moistening. Then, the excess water was drained off, and the moisture in substrates was adjusted to 60–70% by air drying the rice straw.

Pasteurized rice straw was compactly packed into transparent polythene bags (height 58 cm, diameter 38 cm). A total of 800 g dry rice straw was put in each bag to 3/4th of its capacity. Each bag was spawned at the rate of 5% (wet weight basis) following ‘through spawning’ method. Packed substrate bags were perforated with holes all over the surface to allow free exchange of gases. One iron frame was prepared (108 cm × 76 cm × 80 cm), covered with jute bags from all sides in order to place the packed polythene bags. The bags were incubated in the chamber which was maintained at room temperature and under diffused light condition. The humidity inside the room was maintained between 70–80% by moistening the jute bags through water sprinkling.

For the liquid digestate treatment, 80 mL (10:1: substrate: liquid digestate) liquid digestate was sprinkled daily in the bags after pinhead formation till third flush. Liquid digestates are rich in available nitrogen. As a result, soaking of rice straw prior to beginning of mushroom cultivation might lead to loss of nutrients particularly nitrogen through gaseous emission, daily application of liquid digestates was done, which would reduce the nitrogen loss making them available for ready uptake.

Results

Though the average time of pin head emergence remains in between 15 and 28 days for oyster mushroom, pin head formation was observed to be delayed in both the treatments in the present study. Pinhead formation occurred on 23–25 days after spawning. However, the higher time interval needed for pinhead formation and fruiting body formation could not be attributed to difference in treatments, as in the present study, application of the digestate was started only after pin head formation. Therefore, late emergence of pin heads could be attributed to decline in temperature up to 11 °C during the month of December hampering mycelium fruiting ability. It is seen that application of digestate gave better yield over basal substrate rice straw. In digestate treatment, a total of 615 g/800 g of mushroom was produced, which was higher than rice straw alone treatment (447 g/800 g). In the present study, we observed a percentage increase of 38% when substrate is supplemented with liquid fraction of the biogas digestate. The results of present study are in agreement with those that reported enhancement of mushroom yield after digestate application.

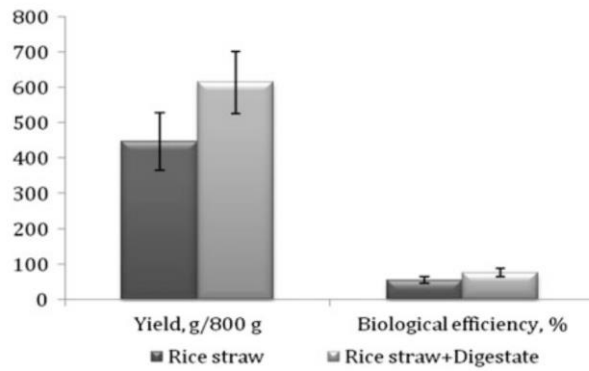


Fig.1. Comparative effect of straw and digestate amended straw on mushroom yield parameters



a. Mycelium run

b. Formation of fruiting body

c. Fruiting body ready to be harvested

Fig. 2 Mushroom growth

Awareness programmes

Following the experimental investigation, a hands on training programme on the production of mushroom utilising biogas digestate was conducted at a village named Jhawani in the district of Sonitpur, Assam, India. The training programme was attended by homemakers, farmers, and unemployed youths.





Fig.3. Training programme on production of mushroom using liquid digestate in Jhawani, Assam

Conclusion

Liquid fraction of biogas digestate could be an alternative nutrient-rich substrate supplement for mushroom growth. Digestate use in mushroom cultivation will offer the opportunity of recycling digestate nutrients in the production of edible, protein-rich food. Integrated development of biogas and mushroom cultivation system may contribute to achieving food security along with promotion of bioenergy. Analysis of cost dynamics shows feasibility of digestate utilization in mushroom production; however, low-cost region-specific production unit using variety of mushroom for round the year commercial cultivation would help in promoting such systems. More livelihood opportunities are expected to arise in if commercial cultivation takes place.

Publications

1. Katak S., Sarma G.D., Patowary D., Baruah D.C. (2019) Prospects of Utilization of Liquid Fraction of Biogas Digestate as Substrate Supplement for Mushroom Cultivation. In: Kalamdhad A., Singh J., Dhamodharan K. (eds) *Advances in Waste Management*. Springer, Singapore. https://doi.org/10.1007/978-981-13-0215-2_32.
2. Prospects and Issues of Phosphorus Recovery as Struvite from Waste Streams, Katak S., Baruah D.C. In: Hussain C. (eds) *Handbook of Environmental Materials Management*. Springer, doi: 10.1007/978-3-319-58538-3_19-1 Katak S., West H., Clarke M., Baruah D. C. In: Ghosh S. (eds) *Utilization and Management of Bioresources*. Springer, Singapore, 2018 DOI: https://doi.org/10.1007/978-981-10-5349-8_21.

Acknowledgement

- Tezpur University & University of Nottingham
- Jhawani Villagers
- Special thanks for
- Dr. Sampri Katak (Research Scholar)
- Dr. Rupam Patowary (Research Scholar)
- Dr. Dipam Patowary (Research Scholar)
- Mr. Gunajit Dev Sarma (Project Staff)
- Mr. Troilokya Lahon (Technical staff)



(D C Baruah), PI

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FORM OF UTILIZATION CERTIFICATE

UTILIZATION CERTIFICATE FOR THE YEAR 2019 -2020 in respect of Recurring

GRANTS-IN-AID/SALARIES/CREATION OF CAPITAL ASSETS

1. Name of the Scheme: **BBSRC Funded Collaborative Project: Enhancing Food Security in Rural India.**
2. Whether recurring or non recurring grants: **Recurring**
3. Grants position of the beginning of the Financial year
 - i) Cash in Hand/Bank: Rs.11880.00
 - ii) Unadjusted advances: Nil
 - iii) Total: Rs.11880.00
4. Details of grants received, expenditure incurred and closing balances :(Actuals)

Unspent Balances of Grants received years {figure as at sl. No. 3(iii)}	Interest Earned thereon	Interest deposited back to the Government	Grant received during the year			Total available funds(1+2-3+4)	Expenditure incurred	Closing Balances (5-6)
			Sanction no. (i)	Date (ii)	Amount (iii)			
1	2	3	4			5	6	7
11880.00	0	0				11880.00	11832.00	48.00

Component wise utilization of grants :

Grant-in-aid-General	Grant-in-aid-salary	Grant-in-aid-creation of capital assets	Total
1. Consumables – Rs.11832 2. Travel – Nil 3. Field testing, demo/training expenses (if applicable) - Nil 4. Contingencies/other costs - Nil 5. Institutional overheads - Nil 6. Any other item– Nil	Nil	1. Permanent Equipment- Nil 2. Construction of work shed /structures 3. Fabrication of prototype equipment	Rs.11832.00

Details of grants position at the end of the year

- (i) Cash in Hand/Bank: Rs.48.00
- (ii) Unadjusted Advances: Nil
- (iii) Total: Rs.48.00

GFR 12-A

Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose which it was sanctioned:

- i. The main accounts and other subsidiary accounts and registers (including assets registers) are maintained as prescribed in the relevant Act/Rules/Standing instructions (mention the act/Rules) and have been duly audited by designated auditors. The figures depicted above tally with the audited figures mentioned in financial statements/accounts.
- ii. There exist internal controls for safeguarding public funds/assets, watching outcomes and achievements of physical targets against the financial inputs, ensuring quality in asset creation etc. & the periodic evaluation of internal controls is exercised to ensure their effectiveness.
- iii. To the best of our knowledge and belief, no transactions have been entered that are in violation of relevant Act/Rules/standing instructions and scheme guidelines.
- iv. The responsibilities among the key functionaries for execution of the scheme have been assigned in clear terms and are not general in nature.
- v. The benefits were extended to the intended beneficiaries and only such areas/districts were covered where the scheme was intended to operate.
- vi. The expenditure on various components of the scheme was in the proportions authorized as per the scheme guidelines and terms and conditions of the grants-in-aid.
- vii. It has been ensured that the physical and financial performance under **BBSRC Funded Collaborative Project** (name of the scheme) has been according to the requirements, as prescribed in the guidelines issued by Govt. of India and the performance/targets achieved statement for the year to which the utilization of the fund resulted in outcomes given at Annexure-I duly enclosed.
- viii. The utilization of the fund resulted in outcomes given at Annexure-II duly enclosed (to be formulated by the Ministry/Department concerned as per their requirements/specifications)
- ix. Details of various schemes executed by the agency through grants-in-aid received from the same Ministry or from other Ministries is enclosed at Annexure-II (to be formulated by the Ministry/Department concerned as per their requirements/specifications)

Date:

Place:

Signature

Name.....

Finance Officer
Chief Finance Officer
(Head of the Finance)
Tezpur University
21/9/20

Signature

Name.....

Registrar
Head of the Organization
Tezpur University
28/9/20

Signature

Name..

Debendra chandra Barua

Principal Investigator

(Strike out inapplicable terms)

REQUEST FOR ANNUAL INSTALMENT WITH UP-TO-DATE STATEMENT OF EXPENDITURE
(Year Means Financial Year i.e. 1st April 2019 to 31st March 2020)

- | | |
|---|--|
| 1. Sanction Letter No. _____ | 6. Grant Received in each year: |
| 2. Total Project Cost Rs. <u>300127.00</u> | a. 1 st year Rs. <u>300127.00</u> |
| 3. Sanctioned/ Revised project cost (If applicable) Rs. <u>NA</u> | b. 2 nd year Rs. <u>Nil</u> |
| 4. Date of Commencement of Project <u>12/12/2016</u> | c. 3 rd Year Rs. <u>Nil</u> |
| 5. Statement of Expenditure | d. Interest, Rs. <u>Nil</u> if any |
| | e. Total Rs. <u>300127.00</u> |

EXPENDITURE INCURRED (Recurring)							
Sl. NO.	HEADS OF EXPENDITURE AS PER SANCTION ORDER	AMOUNT ALLOCATED/ SANCTIONED	1 st YEAR FROM DATE OF START (12/12/2016) TO MARCH 31/ 2017	2 nd YEAR FROM APRIL 01 /04/2017 TO MARCH 31 /2018	3 rd YEAR FROM APRIL 01 /04/2018 TO MARCH 31 /2019	4 th YEAR FROM APRIL 01 /04/2019 TO MARCH 31 /2020*	TOTAL EXPENDITURE
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
1.	Consumables, Travel, Salary, Contingency	300127	28848	183017	76382	11832	300079
	Total	300127	28848	183017	76382	11832	300079

Funds released so far: Rs. 300127.00
Date of start of project: 12/12/2016
Date of Completion: _____

Signature of PI

Signature and Seal of Head
Of Organisation

Signature & Seal
of Chartered Accountant

* or till date of completion

Tezpur University

Note:

- Expenditure under the sanctioned heads, at any point of time, should not exceed funds allocated under that head, without prior approval of DST i.e. Figures in Column (vii) should not exceed corresponding figures in Column (iii)
- Utilisation Certificate for each financial year ending 31st March has to be enclosed, along with request for carry-forward permission to next year.

GFR 12-A

FORM OF UTILIZATION CERTIFICATE

UTILIZATION CERTIFICATE FOR THE YEAR 2018 -2019 in respect of Recurring

GRANTS-IN-AID/SALARIES/CREATION OF CAPITAL ASSETS

1. Name of the Scheme: **BBSRC Funded Collaborative Project: Enhancing Food Security in Rural India.**
2. Whether recurring or non recurring grants: **Recurring**
3. Grants position of the beginning of the Financial year
 - i) Cash in Hand/Bank: Rs.88262.00
 - ii) Unadjusted advances: Nil
 - iii) Total: Rs.88262.00
4. Details of grants received, expenditure incurred and closing balances :(Actuals)

Unspent Balances of Grants received years {figure as at sl. No. 3(iii)}	Interest Earned thereon	Interest deposited back to the Government	Grant received during the year			Total available funds(1+2-3+4)	Expenditure incurred	Closing Balances (5-6)
			Sanction no. (i)	Date (ii)	Amount (iii)			
1	2	3	4			5	6	7
88262.00	0	0				88262.00	76382.00	11880.00
					Nil			

Component wise utilization of grants :

Grant-in-aid-General	Grant-in-aid-salary	Grant-in-aid-creation of capital assets	Total
1. Consumables – Rs.40355 2. Travel – Rs.11028 3. Field testing, demo/training expenses (if applicable) – Nil 4. Contingencies/other costs – Rs.24027 5. Institutional overheads - Nil 6. Any other item– Nil	Rs.12000	1. Permanent Equipment- Nil 2. Construction of work shed /structures 3. Fabrication of prototype equipment	Rs.76382.00

Details of grants position at the end of the year

- (i) Cash in Hand/Bank:Rs.11880.00
- (ii) Unadjusted Advances: Nil
- (iii) Total: Rs.11880.00

GFR 12-A

Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose which it was sanctioned:

- i. The main accounts and other subsidiary accounts and registers (including assets registers) are maintained as prescribed in the relevant Act/Rules/Standing instructions (mention the act/Rules) and have been duly audited by designated auditors. The figures depicted above tally with the audited figures mentioned in financial statements/accounts.
- ii. There exist internal controls for safeguarding public funds/assets, watching outcomes and achievements of physical targets against the financial inputs, ensuring quality in asset creation etc. & the periodic evaluation of internal controls is exercised to ensure their effectiveness.
- iii. To the best of our knowledge and belief, no transactions have been entered that are in violation of relevant Act/Rules/standing instructions and scheme guidelines.
- iv. The responsibilities among the key functionaries for execution of the scheme have been assigned in clear terms and are not general in nature.
- v. The benefits were extended to the intended beneficiaries and only such areas/districts were covered where the scheme was intended to operate.
- vi. The expenditure on various components of the scheme was in the proportions authorized as per the scheme guidelines and terms and conditions of the grants-in-aid.
- vii. It has been ensured that the physical and financial performance under **BBSRC Funded Collaborative Project** (name of the scheme) has been according to the requirements, as prescribed in the guidelines issued by Govt. of India and the performance/targets achieved statement for the year to which the utilization of the fund resulted in outcomes given at Annexure-I duly enclosed.
- viii. The utilization of the fund resulted in outcomes given at Annexure-II duly enclosed (to be formulated by the Ministry/Department concerned as per their requirements/specifications)
- ix. Details of various schemes executed by the agency through grants-in-aid received from the same Ministry or from other Ministries is enclosed at Annexure-II (to be formulated by the Ministry/Department concerned as per their requirements/specifications)

Date:

Place:

Signature

Name.....

Chief Finance Officer
Tezpur University
(Head of the Finance)

Signature

Name.....

Registrar
Head of the Organization
Tezpur University

Signature

Name.....

Principal Investigator

(Strike out inapplicable terms)

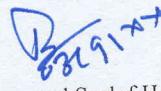
**REQUEST FOR ANNUAL INSTALMENT WITH UP-TO-
DATE STATEMENT OF EXPENDITURE**
(Year Means Financial Year i.e. 1st April 2018 to 31st March 2019)

- | | |
|--|--|
| 1. Sanction Letter No. _____ | 6. Grant Received in each year: |
| 2. Total Project Cost Rs. <u>300127.00</u> | a. 1 st year Rs. <u>300127.00</u> |
| 3. Sanctioned/ Revised project cost
(If applicable) Rs. <u>NA</u> | b. 2 nd year Rs. <u>Nil</u> |
| 4. Date of Commencement of
of Project <u>12/12/2016</u> | c. 3 rd Year Rs. <u>Nil</u> |
| 5. Statement of Expenditure | d. Interest, Rs. <u>Nil</u>
if any |
| | e. Total Rs. <u>300127.00</u> |

EXPENDITURE INCURRED (Recurring)						
Sl. NO.	HEADS OF EXPENDITURE AS PER SANCTION ORDER	AMOUNT ALLOCATED/ SANCTIONED	1 st YEAR FROM DATE OF START (12/12/2016) TO MARCH 31/ 2017	2 nd YEAR FROM APRIL 01 /04/2017 TO MARCH 31/2018	3 rd YEAR FROM APRIL 01 /04/2018 TO MARCH 31 /2019	TOTAL EXPEN DIURE
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
1.	Consumables, Travel, Salary, Contingency	300127	28848	183017	76382	288247
	Total	300127	28848	183017	76382	288247

Funds released so far: Rs. 300127.00
Date of start of project: 12/12/2016
Date of Completion: _____


Signature of PI


Signature and Seal of Head
Of Organisation

Signature & Seal
of Chartered Accountant

* or till date of completion

Registrar
Tezpur University

Note:

- Expenditure under the sanctioned heads, at any point of time, should not exceed funds allocated under that head, without prior approval of DST i.e. Figures in Column (vii) should not exceed corresponding figures in Column (iii)
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GFR 12-A

FORM OF UTILIZATION CERTIFICATE

UTILIZATION CERTIFICATE FOR THE YEAR 2017 -2018 in respect of Recurring

GRANTS-IN-AID/SALARIES/CREATION OF CAPITAL ASSETS

1. Name of the Scheme: **BBSRC Funded Collaborative Project: Enhancing Food Security in Rural India.**
2. Whether recurring or non recurring grants: **Recurring**
3. Grants position of the beginning of the Financial year
 - i) Cash in Hand/Bank: Rs.271279.00
 - ii) Unadjusted advances: Nil
 - iii) Total: Rs.271279.00
4. Details of grants received, expenditure incurred and closing balances :(Actuals)

Unspent Balances of Grants received years {figure as at sl. No. 3(iii)}	Interest Earned thereon	Interest deposited back to the Government	Grant received during the year			Total available funds(1+2-3+4)	Expenditure incurred	Closing Balances (5-6)
			Sanction no. (i)	Date (ii)	Amount (iii)			
1	2	3	4			5	6	7
271279.00	0	0				271279.00	183017.00	88262.00
					Nil			

Component wise utilization of grants :

Grant-in-aid-General	Grant-in-aid-salary	Grant-in-aid-creation of capital assets	Total
1. Consumables – Rs.22019 2. Travel – Rs.11028 3. Field testing, demo/training expenses (if applicable) –Nil 4. Contingencies/other costs – Rs.77970 5. Institutional overheads - Nil 6. Any other item– Nil	Rs.72000	1. Permanent Equipment- Nil 2. Construction of work shed /structures 3. Fabrication of prototype equipment	Rs.183017.00

Details of grants position at the end of the year

- (i) Cash in Hand/Bank:Rs.88262.00
- (ii) Unadjusted Advances: Nil
- (iii) Total: Rs.88262.00

GFR 12-A

Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose which it was sanctioned:

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Date:

Place:

Signature

Name.....

Chief Finance Officer
(Head of the Finance)
Tezpur University

Signature

Name.....

Registrar
Head of the Organization
Tezpur University

Signature

Name.....

Principal Investigator

(Strike out inapplicable terms)

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| 3. Sanctioned/ Revised project cost (If applicable) Rs. <u>NA</u> | b. 2 nd year Rs. <u>Nil</u> |
| 4. Date of Commencement of Project <u>12/12/2016</u> | c. 3 rd Year Rs. <u>Nil</u> |
| 5. Statement of Expenditure | d. Interest, Rs. <u>Nil</u> if any |
| | e. Total Rs. <u>300127.00</u> |

EXPENDITURE INCURRED (Recurring)					
Sl. NO.	HEADS OF EXPENDITURE AS PER SANCTION ORDER	AMOUNT ALLOCATED/ SANCTIONED	1 st YEAR FROM DATE OF START (12/12/2016) TO MARCH 31/ 2017	2 nd YEAR FROM APRIL 01/ /04/2017 TO MARCH 31 /2018	TOTAL EXPENDITURE
(i)	(ii)	(iii)	(iv)	(v)	(viii)
1.	Consumables, Travel, Salary, Contingency	300127	28848	183017	211865
	Total	300127	28848	183017	211865

Funds released so far: Rs. 300127.00
 Date of start of project: 12/12/2016
 Date of Completion: _____

Signature of PI

Signature and Seal of Head
Of Organisation

Signature & Seal
of Chartered Accountant

* or till date of completion

Tezpur University

Note:

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 - iii) Total: Nil
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			Sanction no. (i)	Date (ii)	Amount (iii)			
1	2	3	4			5	6	7
0	0	0				300127.00	28848.00	271279.00
					300127.00			

Component wise utilization of grants :

Grant-in-aid-General	Grant-in-aid-salary	Grant-in-aid-creation of capital assets	Total
1. Consumables – Rs.Nil 2. Travel – Rs.10348 3. Field testing, demo/training expenses (if applicable) –Rs.18500 4. Contingencies/other costs - Nil 5. Institutional overheads - Nil 6. Any other item– Nil	Nil	1. Permanent Equipment- Nil 2. Construction of work shed /structures 3. Fabrication of prototype equipment	Rs.28848.00

Details of grants position at the end of the year

- (i) Cash in Hand/Bank: Rs.271279.00
- (ii) Unadjusted Advances: Nil
- (iii) Total: Rs.271279.00

GFR 12-A

Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose which it was sanctioned:

- i. The main accounts and other subsidiary accounts and registers (including assets registers) are maintained as prescribed in the relevant Act/Rules/Standing instructions (mention the act/Rules) and have been duly audited by designated auditors. The figures depicted above tally with the audited figures mentioned in financial statements/accounts.
- ii. There exist internal controls for safeguarding public funds/assets, watching outcomes and achievements of physical targets against the financial inputs, ensuring quality in asset creation etc. & the periodic evaluation of internal controls is exercised to ensure their effectiveness.
- iii. To the best of our knowledge and belief, no transactions have been entered that are in violation of relevant Act/Rules/standing instructions and scheme guidelines.
- iv. The responsibilities among the key functionaries for execution of the scheme have been assigned in clear terms and are not general in nature.
- v. The benefits were extended to the intended beneficiaries and only such areas/districts were covered where the scheme was intended to operate.
- vi. The expenditure on various components of the scheme was in the proportions authorized as per the scheme guidelines and terms and conditions of the grants-in-aid.
- vii. It has been ensured that the physical and financial performance under **BBSRC Funded Collaborative Project** (name of the scheme) has been according to the requirements, as prescribed in the guidelines issued by Govt. of India and the performance/targets achieved statement for the year to which the utilization of the fund resulted in outcomes given at Annexure-I duly enclosed.
- viii. The utilization of the fund resulted in outcomes given at Annexure-II duly enclosed (to be formulated by the Ministry/Department concerned as per their requirements/specifications)
- ix. Details of various schemes executed by the agency through grants-in-aid received from the same Ministry or from other Ministries is enclosed at Annexure-II (to be formulated by the Ministry/Department concerned as per their requirements/specifications)

Date:

Place:

Signature

Name.....

F Finance Officer
Chief Finance Officer
(Head of the Finance)

Signature

Name.....

Registrar
Head of the Organization
Jezpur University

Signature

Name.....

Principal Investigator

(Strike out inapplicable terms)

REQUEST FOR ANNUAL INSTALMENT WITH UP-TO-DATE STATEMENT OF EXPENDITURE
(Year Means Financial Year i.e. 1st April 2016 to 31st March 2017)

- | | |
|--|--|
| 1. Sanction Letter No. _____ | 6. Grant Received in each year: |
| 2. Total Project Cost Rs. <u>300127.00</u> | a. 1 st year Rs. <u>300127.00</u> |
| 3. Sanctioned/ Revised project cost
(If applicable) Rs. <u>NA</u> | b. 2 nd year Rs. <u>Nil</u> |
| 4. Date of Commencement of
of Project <u>12/12/2016</u> | c. 3 rd Year Rs. <u>Nil</u> |
| 5. Statement of Expenditure | d. Interest, Rs. <u>Nil</u>
if any |
| | e. Total Rs. <u>300127.00</u> |

EXPENDITURE INCURRED (Recurring)				
Sl. NO.	HEADS OF EXPENDITURE ASPER SANCTION ORDER	AMOUNT ALLOCATED/ SANCTIONED	1 st YEAR FROM DATE OF START (12/12/2016) TO MARCH 31/ 2017	TOTAL EXPENDITURE
(i)	(ii)	(iii)	(iv)	(viii)
1.	Consumables, Travel, Salary, Contingency	300127	28848	28848
	Total	300127	28848	28848

Funds released so far: Rs. 300127.00
Date of start of project: 12/12/2016
Date of Completion: _____


Signature of PI


Signature and Seal of Head
Of Organisation
Tezpur University

Signature & Seal
of Chartered Accountant

* or till date of completion

Note:

- Expenditure under the sanctioned heads, at any point of time, should not exceed funds allocated under that head, without prior approval of DST i.e. Figures in Column (vii) should not exceed corresponding figures in Column (iii)
- Utilisation Certificate for each financial year ending 31st March has to be enclosed, along with request for carry-forward permission to next year.