Sadakathullah Appa College

*An Autonomous Institution, Re-Accredited by NAAC at an 'A^{++}' Grade, *ISO 9001:2015 Certified*

AQAR

(2022 – 2023)

CRITERION VI

6.4.3 Mobilization of Funds and Optimal Utilization of Resources

Funds Received from Various Agencies

Sub*mitted to*

THE NATIONAL ASSESSMENT AND ACCREDITATION
COUNCIL (NAAC)

Rahmath Nagar, Tirunelveli-627011. Ph : 0462-2540763, Fax: 0462-2540033

E-mail: principal@sadakath.ac.in, Website : www.sadakath.ac.in

Sadakathullah Appa College

*An Autonomous Institution, Re-Accredited by NAAC at an **A++ Grade** *ISO 9001 : 2015 Certified*

6.4.3 Mobilization of Funds and Optimal Utilization of Resources

The following are the strategies followed by the college for fund mobilization

Funds Received from Various Agencies during 2022-23

S. No.	Name of the Government & Non-Government Agencies	Individuals	Purpose of the grant	Funds/Grants received (INR - lakhs)
1.	Tamilnadu State Council for Science and Technology (TNSCST)	Dr. I. Antony Danish, Assistant Professor, PG and Research Department of Chemistry	Student Project Scheme	0.075
2.	TNSCST	Dr. K.Kavitha, Assistant Professor, PG and Research Department of Microbiology	Student Project Scheme	0.075
3.	TNSCST	Dr. R. Janet Rani, Assistant Professor, PG and Research Department of Microbiology	Student Project Scheme	0.075
4.	TNSCST	Dr. P.S.Bensi, Assistant Professor, Department of Applied Nutrition and Public Health	Student Project Scheme	0.075
5.	Unnat Bharat Abhiyan - UBA	Dr.M.Sheik Muhideen Badhusha, PG and Research Department of Chemistry	National Coordinating Institute UBA 2.0 (IIT, Delhi)	1.0
6.	Department of Collegiate Education	A. Shajahan, Research Department of Zoology	State Government Research Stipend Grant	0.6
7.	Department of Collegiate Education	M. Sanjeetha Subin, Research Department of Zoology	State Government Research Stipend Grant	0.6
8.	Department of Collegiate Education	M. Muthuselvi, Research Department of Chemistry	State Government Research Stipend Grant	0.6
9.	Department of Collegiate Education	A. Wilson Everbright, Research Department of History	State Government Research Stipend Grant	0.6

SADAKATHULLAH APPA COLLEGE AUTONOMOUS TIRUNELVELI-11

Principal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

50 years Golden Jubilee

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai - 600 025
Ph: 044-22301428, www.tanscst.nic.in

Dr.R SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S (USA),
Member Secretary

Lr.No TNSCST/SPS/BS/2022-2023 27.02.2023

To
The Principal
Sadakathullah Appa College,
Tirunelveli- 627 011

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2022-2023 – approval intimation–grant release- reg.

With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and Seminar Paper on Time.

1.	Dr.I. Antony Danish, Department of PG Department of Chemistry, Sadakathullah Appa College, Tirunelveli- 627 011	Synthesis of Heterocaryl substituted 4-Phenyl pyrimidines by Ultra - Sonication as Potential Anticancer Candidates Targeting GPR120 and their in-silico Analysis	M.Rizwana Fathima,	PS-358	The Principal	Rs.7500/-
2.	Dr.Kavitha K, Assistant Professor, Department of Microbiology, Sadakathullah Appa College, Tirunelveli-627 011	Effective degradation of feather wastes using keratinase producing microbes	P. Muthumani,	ES-679	The Principal	Rs.7500/-
3.	Dr.Janet Rani.R, Assistant Professor and Head, Department of Microbiology, Sadakathullah Appa College, Tirunelveli-627 011	Alternative media for fungi and its optimization	D.Aishwariya, S.Abirami,	BS-0736	The Principal	Rs.7500/-
4.	Dr.P.S Bensi, Assistant Professor, Department of Applied Nutrition and Public Health, Sadakathullah Appa College, Tirunelveli-627 011	Proximate and Nutritional profile of emerging functional food: Microgreens	Padmavathi.V,	AS-808	The Principal	Rs.7500/-
					Total	Rs.30000/-

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest

Kindly send the utilisation certificate (format enclosed) and seminar paper (Ref.T&C-no.5&6) on completion of the project.

Thanking you,

Yours faithfully,

27/2/23
Member Secretary.

Encl: a) Terms & Conditions (T&C)
b) Format of Utilisation Certificate (UC)
c) Cheque for Rs.30000/- Cheque No: 574982 dt.03.03.2023

Copy to: Individual Guides

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENT PROJECT SCHEME 2022- 2023

UTILZATION CERTIFICATE

1	Name of the Guide and address	:	Dr. I. ANTONY DANISH Assistant Professor, Sadakathullah Appa College (Autonomous) Rahmath Nagar, Tirunelveli – 627 011
2	Name of the Student	:	Miss. M. RIZWANA FATHIMA II M.Sc. Chemistry (Reg. No -21SCH05)
3	Title of the Project	:	Synthesis of Heteroaryl Substituted 4-Phenyl Pyrimidines by Ultrasonication as Potential Anticancer Candidates Targeting GPR120 and their *in-silico* Analysis
4	Project Code	:	PS-358

It is certified that a sum of Rs. 7500/- (Rupees Seven Thousand and Five Hundred) sanctioned by the Council for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned and sum of Rs. Zero remaining unutilized is refunded.

Signature of the Guide

Dr. I. ANTONY DANISH, M.Sc.,Ph.D.,
Assistant Professor of Chemistry
Sadakathullah Appa College [Autonomous]
Rahmath Nagar, Tirunelveli - 627 011.

Signature of the HOD

Dr. S. BRILLIANS REVIN
M.Sc., Ph.D., Post-Doc. (Brazil)
Head & Assistant Professor
Department of Chemistry (PG)
Sadakathullah Appa College (Autonomous)
Tirunelveli - 627 011, Tamil Nadu, India.

Signature of the Principal with seal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENT PROJECT SCHEME 2022- 2023

STATEMENT OF EXPENDITURE

Details of the Statement of Expenditure

Date of Amount Received	Amount Approved (Rs.)			Total Expenditure Incurred (Rs.)		
03.03.2023	1. TNSCST	=	7500.00	1. Chemicals	=	3273.92
	2. Contribution by the Project Supervisor (Guide)	=	375.92	2.Spectral Characterization	=	4602.00
	Total	=	**7875.92**	Total	=	**7875.92**

Signature of the Guide

Signature of the HOD

Signature of the Bursar

Signature of the Principal with seal

Dr. S. BRILLIANS REVIN
M.Sc., Ph.D., Post-Doc. (South Korea)
Head & Assistant Professor
Department of Chemistry (PG)
Sadakathullah Appa College (Autonomous)
Tirunelveli - 627 011, Tamil Nadu, India.

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

BUDGET

S.No.	Particulars	Amount (Rs.)
1	Chemicals	3273.92
2	Spectral Characterization	4602.00
	Total	**7875.92**

Signature of the Guide

Dr. I. ANTONY DANISH, M.Sc.,Ph.D.,
Assistant Professor of Chemistry
Sadakathullah Appa College [Autonomous]
Rahmath Nagar, Tirunelveli - 627 011.

17/05/23

Signature of the Bursar

BURSAR
SADAKATHULLAH APPA COLLEGE,
RAHMATH NAGAR, TIRUNELVELI - 627 011.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENTS RESEARCH PROJECT SCHEME – 2022-23

UTILIZATION CERTIFICATE

1. Name of the Guide and address: **Dr. K. Kavitha,** Assistant Professor, PG and Research Department of Microbiology, Sadakathullah Appa College, Rahmath Nagar, Tirunelveli – 627 011.

2. Name of the Students: **P. Muthumari,** II M.Sc. Microbiology, PG and Research Department of Microbiology, Sadakathullah Appa College, Rahmath Nagar, Tirunelveli – 627 011.

3. Title of the Project: **Effective degradation of feather wastes using keratinase producing microbes**

4. Project Code: **ES-679**

It is certified that a sum of Rs. 7,500/- (Seven thousand Five hundred rupees only) sanctioned by the council for carrying out the above mentioned student project has been utilized completely for the purpose for which it is sanctioned.

Date: 14.5.2023

Place: Tirunelveli

Signature of the Guide

Signature of the HOD

Dr.R.JANET RANI
M.Sc.,M.Phil.,Ph.D.,
Head and Assistant Professor
Department of Microbiology
Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli - 627011.
Tamilnadu, India.

Signature of the Principal with seal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENT PROJECT SCHEME 2022- 2023

STATEMENT OF EXPENDITURE

Details of the Statement of Expenditure

Date of Amount Received	Total Expenditure Incurred (Rs.)			
03.03.2023	1. TNSCST	7500.00	1. Chemicals	3,485.00
			2. Glasswares	1,965.00
	2. Contribution by the Project Supervisor (Guide)	302.00	3. Contigency	2,352.00
	Total	**7,802.00**	Total	**7,802.00**

Signature of the Guide

Signature of the HOD

Dr.R.JANET RANI
M.Sc.,M.Phil.,Ph.D.,
Head and Assistant Professor
Department of Microbiology
Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli - 627011,
Tamilnadu, India.

17/10/23

Signature of the Bursar

18/10/23

Signature of the Principal with seal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

Pro Forma Invoice 4

Date : 04/03/2023

From :

UNITED SCIENTIFIC SUPPLIESS
15-A, Kallasapuram East Street,
TIRUNELVELI JUNCTION - 627 001.
Ph:0462 - 2554028

GSTIN : 33AJTPS61[illegible]

Bill No.

To

The Principal
Sadakathullah Appa College
Tirunelveli
GSTIN :
State Tamilnadu
State Code : 33

Department of Microbiology

Your Order No.	Our Estimate No.	Our Packing List No.
Dated :		Dated :

S.No	Particulars	HSN	Qty	Rate	-%	NetRate	Tax	Amt	Tax	Amt	Amount
1	M001-100G Nutrient Agar	38210000	1	725.00		855.50	9.0	65.25	9.0	65.25	725.00
2	GRM666-100G Agar Agar, Type I	1302 31 00	1	995.00		1,174.10	9.0	89.55	9.0	89.55	995.00
3	K001-1KT Gram Stains - Kit	3822 00 90	1	1,300.00		1,456.00	6.0	78.00	6.0	78.00	1,300.00

Three Thousand Four Hundred Eighty Five Rupees Only

Sub Total	:	3,020.00
Add CGST	:	232.80
Add SGST	:	232.80
GST Tax Total	:	465.60
Net Total	:	3,485.00

17/05/23

E & O.E

Account Name: United Scientific Suppliess
Bank Name: The Federal Bank Limited
Account Number: 11395500000238,
IFSC: FDRL 0001139, MICR No. : 627049002
Branch: Tirunelveli - 627002

Chemicals sold as per invoice are not for medicinal use. Weighing materials and measures sold as per this invoice are not for trade use. Bills not settled within one month from date of receipt will carry interest at 18%. All disputes are subject to Tirunelveli Jurisdiction.

PRINCIPAL
SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

For UNITED SCIENTIFIC SUPPLIESS

Pro Forma Invoice

28

Bill No.

Date : 10/03/2023

From :

UNITED SCIENTIFIC SUPPLIESS

15-A, Kailasapuram East Street,
TIRUNELVELI JUNCTION - 627 001.
Ph:0462 - 2554028

GSTIN : 33AJTPS6141C1Z1

To

The Principal
Sadakathullah Appa College
Tirunelveli
GSTIN :
State Tamilnadu
State Code : 33

Department of Microbiology

Your Order No.	Our Estimate No.	Our Packing List No.
Dated :		Dated :

S.No	Particulars	HSN	Qty	Rate	-%	NetRate	Tax	Amt	Tax	Amt	Amount
1	Petri Dish 4 inch	7017	5	136.00		160.48	9.0	61.20	9.0	61.20	680.00
2	Conical flask 250 ml Borosilicate	70172000	5	120.00		141.60	9.0	54.00	9.0	54.00	600.00
3	Test Tube 15X125 mm Borosilicate	7017	55	7.00		8.26	9.0	34.65	9.0	34.65	385.00

One Thousand Nine Hundred Sixty Five Rupees Only

Sub Total	:	1,665.00
Add CGST	:	149.85
Add SGST	:	149.85
GST Tax Total	:	299.70
Net Total	:	1,965.00

17/05/23

E.&O.E.

Account Name: United Scientific Suppliess
Bank Name: The Federal Bank Limited
Account Number: 11395500000238,
IFSC: FDRL 0001139, MICR No. : 627049002
Branch: Tirunelveli - 627002

Chemicals sold as per invoice are not for medicinal use. Weighing materials and [illegible] this invoice are not for trade use. Bills not settled within one month from date of receipt will carry interest at 18%. All disputes are subject to Tirunelveli Jurisdiction.

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

For UNITED SCIENTIFIC SUPPLIESS

CASH BILL

2583068, 2583069
9894315426
9787648302

ANNAI
Since 2000
XEROX & DTP
SOUTH BAZZAR, PALAYAMKOTTAI

No. 196 Date : 25/11/23

To . Principal - Sadakathullah Appa College

Sl. No.	Particulars	Rs.	P.
	Xerox.	432	
	Board Printing	1120.	
	Binding	800	
	Total	2352.	

17/10/23

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENTS RESEARCH PROJECT SCHEME – 2022-23

UTILIZATION CERTIFICATE

1. Name of the Guide and address: **Dr. R. Janet Rani**, Head and Assistant Professor, PG and Research Department of Microbiology, Sadakathullah Appa College, Rahmath Nagar, Tirunelveli – 627 011.

2. Name of the Students: **D.Aishwariya & S.Abirami**, II M.Sc. Microbiology, PG and Research Department of Microbiology, Sadakathullah Appa College, Rahmath Nagar, Tirunelveli – 627 011.

3. Title of the Project: **Alternative media for fungi and its optimization**

4. Project Code: **BS-0736**

It is certified that a sum of Rs. 7,500/- (Seven thousand Five hundred rupees only) sanctioned by the council for carrying out the above mentioned student project has been utilized completely for the purpose for which it is sanctioned.

Date: 14.5.2023

Place: Tirunelveli

Signature of the Guide

Signature of the HOD

Dr.R.JANET RANI
M.Sc.,M.Phil.,Ph.D.,
Head and Assistant Professor
Department of Microbiology
Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli - 627011,
Tamilnadu, India.

18.5.23

Signature of the Principal with seal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI – 600 025

STUDENT PROJECT SCHEME 2022- 2023

STATEMENT OF EXPENDITURE

Details of the Statement of Expenditure

Date of Amount Received	Total Expenditure Incurred (Rs.)			
03.03.2023	1. TNSCST	7.500.00	1. Chemicals	3,548.00
	2. Contribution by the Project Supervisor (Guide)	1,248.00	2. Food (Nutrient) Analysis	5,200.00
	Total	**8,748.00**	Total	**8,748.00**

Signature of the Guide

Signature of the HOD

Dr.R.JANET RANI
M.Sc.,M.Phil.,Ph.D.,
Head and Assistant Professor
Department of Microbiology
Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli - 627011,
Tamilnadu, India.

17/05/23
Signature of the Bursar

18/05/23
Signature of the Principal with seal

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11

Pro Forma Invoice

Bill No. 11

Date : 07/03/2023

From :
UNITED SCIENTIFIC SUPPLIESS
15-A, Kailasapuram East Street,
TIRUNELVELI JUNCTION - 627 001.
Ph:0462 - 2554028
GSTIN : 33AJTPS614[illegible]

To
The Principal
Sadakathullah Appa College
Tirunelveli
GSTIN :
State Tamilnadu
State Code : 33

Your Order No.	Our Estimate No.	Our Packing List No. Dated :
11		

S.No	Particulars	HSN	Qty	Rate	%	NetRate	Tax	Amt	Tax	Amt	Amount
	Lactophenol cotton blue M.S 500ml	3822	1	550.00		616.00	6.0	33.00	6.0	33.00	550.00
	Sucrose 500 gm	17019990	1	375.00		442.50	9.0	33.75	9.0	33.75	375.00
	Lactose 500gm	17021110	1	590.00		696.20	9.0	53.10	9.0	53.10	590.00
	Sabouraud Dextrose Agar 100G	3821	2	760.00		896.80	9.0	136.80	9.0	136.80	1,520.00

Three Thousand Five Hundred Forty Eight Rupees Only

Sub Total	:	3,035.00
Add CGST	:	256.65
Add SGST	:	256.65
GST Tax Total	:	513.30
Net Total	:	3,548.00

17105123

E.&O.E.

Account Name: United Scientific Suppliess
Bank Name: The Federal Bank Limited
Account Number: 11395500000238,
IFSC: FDRL 0001139, MICR No. : 627049002
Branch: Tirunelveli - 627002

Chemicals sold as per invoice are not for medicinal use. Weighing mate[illegible] this invoice are not for trade[illegible] within one month from date of [illegible] interest at 18%. All disputes are subject to Tirunelveli Jurisdiction.

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
RAHIMIYA NAGAR TIRUNELVELI - 11.

For UNITED SCIENTIFIC SUPPLIESS

INVOICE

(ORIGINAL FOR RECIPIENT)

Enviro Care India Private Ltd.,
Service Department
Plot No.43, IInd Street, Harvey Nagar,
Arasaradi,
Madurai -625 016
GSTIN/UIN: 33AABCE4521A1ZI
State Name : Tamil Nadu, Code : 33
E-Mail : accounts@envirocareindia.com

Invoice No.	Dated
FOOD/18/23-24	**24-Apr-23**
Delivery Note	Mode/Terms of Payment
Reference No. & Date.	Other References
Buyer's Order No.	Dated
IWO	**20-Apr-23**
Dispatch Doc No.	Delivery Note Date
Dispatched through	Destination
Terms of Delivery	

Buyer (Bill to)

Dr. R.Janet Rani .Ms.Iswarya,Ms Abirami
Sadakathullah Appa College
Tirunelveli-627005
State Name : Tamil Nadu, Code : 33

Sl No.	Particulars	HSN/SAC	Quantity	Rate	per	Amount
1	**Food** *4 No X Rs 1300 Each*					**5,200.00**
	Total					**₹ 5,200.00**

Amount Chargeable (in words)
Rupees Five Thousand Two Hundred Only

E & O E

Remarks:
Being for the food sample analysis for the month of April -2023 as per bill no :Food /18-23-24 dt :24/4/2023

Company's PAN : **AABCE4521A**

17105123

for Enviro Care India Private Ltd.,

Authorised Signatory

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
RAHMATH NAGAR, TIRUNELVELI - 11.

This is a Computer Generated Invoice

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE CAMPUS, CHENNAI - 600 025

STUDENT PROJECT SCHEME 2022-2023
UTILISATION CERTIFICATE

(TWO COPIES)

1 Name of the guide and address : Dr. P.S. Bensi
Assistant Professor
Department of Applied Nutrition & Public health
Sadakathullah Appa College

2 Name of the student(s) : Padmavathi. V

3 Title of the project : Proximate and Nutritional Profile of Emerging Functional Food Microgreens

4 Project code : AS-608

It is certified that a sum of Rs. 7500 (Rupees seven thousand and five hundred only) sanctioned by the Council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. — remaining unutilized is refunded

Bensi 16/5/23
Signature of the Guide

16/05/23
Signature of the HOD
Head of the Department
Dept. of Nutrition and Dietetics
Sadakathullah Appa College
Tirunelveli - 627 011

Signature of the
REGISTRAR / PRINCIPAL / ~~DEAN~~
with seal

SADAKATHULLAH APPA COLLEGE
(Autonomous)
Rahmath Nagar, Tirunelveli – 627 011
Reaccredited by NAAC with an 'A' Grade & an ISO 9001: 2015 certified Institution

Project Proposal On

"Technology Development": Project-No: RP-03525G

Green and Sustainable Synthesis of ZnO@Chitosan Nanocomposites: Growth Enhancer and Fungicide for Plants"

Project Investigator:
Dr. Dr M Sheik Muhideen Badhusha
Dean of Research & Development
SADAKATHULLAH APPA COLLEGE

उन्नत भारत अभियान
UNNAT BHARAT ABHIYAN

UNNAT BHARAT ABHIYAN
INDIAN INSTITUTE OF TECHNOLOGY, DELHI
National Coordinating Institution
New Delhi,

उन्नत भारत अभियान
ग्रामीण विकास एवं प्रौद्योगिकी केंद्र
भारतीय प्रौद्योगिकी संस्थान, दिल्ली
हौजखास, नयी दिल्ली- 110016

उन्नत भारत अभियान
UNNAT BHARAT ABHIYAN

UNNAT BHARAT ABHIYAN
INDIAN INSTITUTE OF TECHNOLOGY, DELHI
National Coordinating Institution
Address: V-405, IIT Delhi Main Rd, Block 5, Hauz Khas, New Delhi, 110016
Tel: +91-11-2659 1121/1157, Fax: +91-11-2659 1121
Email: unnatbharatabhiyaniitd@gmail.com

Date: January 30, 2023

To

Dr. M. Sheik Muhideen Badhusha

Sadakathullah Appa College (Autonomous), Rahmath Nagar, Tirunelveli, Tamil Nadu

Subject: Financial Sanction of Technical Intervention project (No. RP-03525G) under UBA 2.0

Dear Sir

1. This is to intimate you that Technology Intervention proposals under the category of "**Technology Development**": Project-No: **RP-03525G** entitled, **"Green and Sustainable Synthesis of ZNO@Chitosan Nanocomposites: Growth Enhancer and Fungicide for Plants"** submitted by you under the ***Unnat Bharat Abhiyan 2.0 Program***, has been approved by **Sustainable Agriculture System** SEG and funded by the **National Coordinating Institute UBA 2.0 (IIT Delhi)** against **UTR No. – SBIN222364009588** vide dated **30-12-2022.**

2. You can use the grant for fulfilling the project objectives under the approved heads as per the proposal, using the established procedure of your institute and as per the UBA guidelines, within 6 months from the date of receiving of funds. Kindly note that the utilization of funds allowed under the head "General Contingency" should not be more than 10% of the total sanctioned fund.

   Note: TA/ Honorarium is strictly not permitted in this project.

3. Any product/service developed under the sanctioned project must have UBA logo on it.

4. Detailed information of faculty in-charge and students/volunteers, who will be coordinating/ working under the sanctioned project, shall be shared in the project report submitted by your institution.

5. The project implementation location/site shall be selected in consideration with gram panchayat officials/ members.

6. Please take care that the position holders/Panchayat officials shall not be benefitted in person. Also, ensure that the project shall not be controversial in terms of beneficiaries. Selection of beneficiaries shall include the Marginalized communities or EWS Category as well.

7. Few videos and images shall be shared to the SEG Coordinator (for updating the status of the project), also the report shall contain good quality pictures of the project site/product/service and feedback from the villagers/beneficiaries.

8. For the projects related to training camps, awareness, rally etc., the in-charge shall share the material/posters/modules to be used in the villages, for the knowledge of SEG Coordinator and further comments, if any.

You are required to submit the completion report/5-6 photographs/3 min videos of the project within two months after the completion of the project to the competent authority of NCI-IIT Delhi, UBA2.0 cell. Without the submission of the completion report, the opportunity for funding of a new project will not be facilitated.

Prof. Vivek Kumar

National SEG Coordinator

Unnat Bharat Abhiyan (UBA 2.0)

National Coordinating Institute

Indian Institute of Technology, Delhi

Unnat Bharat Abhiyan: [Technology Development Proposal]

Proposal by:
Sadakathullah Appa College, Rahmath Nagar, Palayamkottai, 627 011 (Id: C-41191) 2020-06-28 12:45:30

Title of the product / technology: Green and sustainable synthesis of Chitosan @ ZnO Nanocomposites: Growth enhancer and fungicide for plants

Subject expert group: Sustainable Agriculture System

Village where it is to be implemented: Ariyakulam

District and State of the Village where it is to be implemented: Tirunelveli, Tamilnadu

Collaborating Organisation: D. K. Nisha Pradeepa, Assistant Professor of Agricultural Entomology, Thangapazham Agricultural College, Vasudevanallul, Thankasi Dt, Tamilnadu

Contact of Collaborating Organisation: 8754088810, nisha.pradeepa@gmail.com

Objectives of Project: ? To avoid the excess use of mineral fertilizers and unsafe pesticides has led to pollution and serious health issues. ? To reduce loss of nutrients fromfertilizers and increase the complete intake of nutrients and enhance the faster growth of plants. ? To decrease theproductioncosts and other associated constraints, as well as availability andaffordability to farmers, are important factors likely to comeinto play in convincing the industry to invest in nanofertilizerproduction. ? To increase fertilizer efficiency and uptake ratio of the soil nutrients in crop production, and save fertilizer resource. ? To improve solubility and dispersion of insoluble nutrients in soil, reduce soil absorption and fixation and increase the bio-availability leads to increased Nutrient uptake efficiency.

Experience in the field: 10 years

Brief Plan of Activties:

1. Green synthesis of ZnO nanoparticles using various plants 2. Synthesis of Chitosan capped ZnO nanoparticles 3. Characterization of ZnO and Chitosan@ZnO nanoparticles by various spectral techniques (Uv-DRS, FT-IR, XRD, SEM and TEM) 4. Seed germination and root/shoot development 5. Analysis of growth parameters 6. Estimation of biochemical parameters (Chlorophyll (Chl) and carotenoid estimation, Estimation of total protein, Estimation of total carbohydrate, Estimation of total phenolics, MDA content, Membrane stability index, Root ion leakage) 7. Storage Food Mobilizing Enzyme 8. Plant Defense System 9. Antifungal activity of fungal phyto pathogens

Technical Intervention with proper assesment for viability of the outcome: Once the fertilizer has been prepared in order to confirm it will be analyzed by further techniques, such as • The UV-Vis spectra by using aThermo Scientific Evolution 220 spectrometer in a spectral rage of200–800 nm. • X-ray diffraction studies for ZnO samples will be analyzed on a RikaguMiniflex 600 X-ray diffractometer equipped with CuK? X-ray source(? = 1.5406 Å) in the 2-theta range 4–80o • The FT-IR spectra werecollected on a Thermo Scientific Nicolet iS5 FT-IR spectrometer in aspectral range of 600–4000 cm-1 • The size distribution and the average size of the ZnOnanoparticles will be estimated by a JEOL JEM 3010 transmissionelectron microscope using an electron source of energy.

Role of your Institute: To promote excellence research in various disciplines in the Sadakathullah Appa College by getting fund from the various funding agencies. ? Supporting research programmes and research environment for students, Researchers and faculties in the Institution. ? We could develop smart village with the support of government by UBA Scheme. ? Rural Internship program launched by institution for students internship in Unnat Bharat Abhiyan Cluster.

Cost of facility: one lakh (100000.00)

Project deliverables: Once the nano fertilizer is synthesized and confirmed by characterization it will be delivered to farmers in Ariyakulam village, Tirunelveli. For the convenience of farmers for using the nano fertilizer. Initially, • Nano Fertilizer, Pack Size: 1 Kg, For Agriculture Farming • Total 25 Kg of Nano fertilizer • Package mentioned with ingredients and quantity, including the storage conditions and handling conditions. • Properly packed and sealed with product description.

Availability of funds from other sources: No

Duration of work (in terms of work plan): 6

Impact of the Project in Villages: Nano-fertilizers have potential to increase crop productivity through slow or controlled delivery. • It will reduce ill effects due to overuse of conventional fertilizers. • Increase the productivity and improve the quality of the soil. • Stimulate the faster plant growth and balanced nutrients supply. • Reduce the environmental effect and gives the sustainnble agriculture. • Reduce the cost of production. • Provide smart monitoring using nanosensors by wireless communication devices. • The potential of nanomaterials encourages a new green revolution with reduced farming risks.

Breakage of Expenditure:

Benefit to villages

If this Nanocomposites is applied in use, considerable increase in crop production of plants and it also act as a very good fungicide to prevent for fungal infections

Benefit to the Institution

- To promote excellence research in various disciplines in the Sadakathullah Appa College by getting fund from the various funding agencies.
- Supporting research programmes and research environment for students, Researchers and faculties in the Institution.
- We could develop smart village with the support of government by UBA Scheme.
- Rural Internship program launched by institution for students internship in Unnat Bharat Abhiyan Cluster.

Impact of this work on learning of students/teachers : Design and developing nanotechnology is one of the rapidly important because it is used in various field like food, textile, biomedical, agriculture ...*etc*., In recent years, nanoparticles have been developed to be used in agriculture as nanopesticides and nanofertilizers. when various metal oxide nanoparticles are used as a nanofertilizers and nanopesticides. These metal oxide nanoparticles like ZnO, CuO and MgO NPs are effectively used in agriculture due to small particle size and high surface area.

Duration of the work : 1 YEAR

Final impact : Chitosan coated ZnO nanoparticles have been synthesized by green method. The synthesized chitosan@ ZnO NPs showed the prodigious potential for significant enhancement of seedling growth and seed germination activity of plants. This is because of small particle size and higher surface area and presence of biological moieties in green ZnO NP, which led to increases in their bioactivity. Based on this growth-promoting activity, it is concluded that chitosan@ ZnO NPs could be a better source for agricultural products such as nanofertilizers and nano-fungicies than their chemically synthesized fertilizers and fungicides. As the Chitosan@ZnO was more effective for seedling growth of plants than chemical ones.

SEG Coordinator : **Dr. M. Sheik Muhideen Badhusha**

Objectives:

1. To enhance the nutritive value of food to decrease the food security.To help to enhance the number of crops.
2. To kill some harmful micro-organisms or shrubs etc present in the crop to increase the quantity.
3. To develop a well-developed system of agriculture that will provide adequate food.
4. To develop an agriculture system which will be self-sufficient.
5. To increase the soil fertility which will definitely result in the pleasant environment.

In recent year the researchers focus on Nanofertilizer and nanomaterials for fungicides past efforts have been made to improve agricultural yield through exhaustive research in nanotechnology. The green revolution resulted in blind usage of pesticides and chemical fertilizers which caused loss of soil biodiversity and developed resistance against pathogens and pests as well.

Conventional chemical fertilizers suffer substantially from low nutrient uptake efficiencies and high losses. The development of nanofertilizers brings forward the novel solution for such economic losses. Nanofertilizers are capable of reducing nutrient loss and enhancing nutrient incorporation by crops and soil microorganisms. Commercialized nanofertilizers are mainly the micro-nutrients at nanoscale (e.g., Mn, Cu, Fe, Zn, Mo, N, B). It is noted that the use of other nanomaterials (instead of the typical conventional crop fertilizers), such as carbon nano-onions and chitosan NPs, could also increase crop growth and quality. It is anticipated that the novel nanofertilizers will motivateand transform current fertilizer production industries in the next decade.

Nanoparticles (NPs) are suggested to be used as a source of nutrients required for plant growth Available data suggest that NPs are more bioreactive than bulk counterpart due to their smaller size and greater surface area. These properties can also increase the NPs risks for environment health. Previous studies have shown both positive and negative effects of NPs on plants. Adverse effects of copper oxide NPs i.e., growth retardation, reduced biomass production, lower root length, shrinking of root tip, and high collapse of root epidermal and cortical cells of Arabidopsis thaliana, have been reported. The effect of NPs on plants depends on their properties, dose and method of application and plant species. Dissolution, aggregation and change in the surface properties of ZnO NPs in solid matrices might modify bioactivity of these particles. The main reactions of NP in soil-plant systems seems to be dissolution into ions, aggregation of individual NPs into the larger size units, the dissolution of aggregation in soils, interaction with root exudates or labile soil organic matter and adsorption on root surfaces[22].

ZnO NPs are one of the most widely used NPs. These NPs are used in personal care products e.g., sunscreens as well as in coatings and paints due to their ultra violet (UV) absorption efficiency and transparency[23]. On the other hand, the potential adverse effects of NPs on ecosystems as well as human health have increased. It showed the positive effects of NPs having ZnO at low concentration (1–25 mg kg^{-1}) on cucumber was grown in hydroponic and negative effects of them at higher concentration (250 mg kg^{-1}). According to previous research and more effects of elements on hydroponic systems the concentration of Zn in this study were chosen[24-26]. Cucumber plant was selected for this experiment due to high growth speed and good response to Zn concentration.

PROPOSAL(TECHNOLOGY DEVELOPMENT)

Proposal by : Sadakathullah Appa College, Tirunelveli, Tamilnadu

Subject expert group : Sustainable Agriculture System, Indian Agricultural Research Institute, New Delhi

Title of the product / technology : ***"Green and sustainable synthesis of ZnO@Chitosan Nanocomposites: Growth enhancer and fungicide for plants"***

Village where it is to be implemented: Ariyakulam, Tirunelveli, Tamilnadu

Why is this required : Now a days most of the formers used chemical fertilizers. Chemical fertilizers provide plants with nutrients for optimal growth and productivity; however, current production practices cannot fulfill the growing demand of food without reliance on the extensive use of fertilizers. Nanofertilizers are being studied as a way to increase nutrient efficiency and improve plant nutrition, compared with chemical fertilizers. A nanofertilizer is any product that is made with nanoparticles or uses nanotechnology to improve nutrient efficiency. As such, there is great interest in developing innovative nanofertilizers to increase nutrient use efficiency.

Total cost of the product/technology : One Lakh

Funds raised from gram panchayat or CSR or district/local administration?: No

Details of the funds raised from other agencies : Not applicable

Your role during the execution : Project developer with design and implementation within stipulated time and optimised budget,Supervisor,

Your role after installation : I will create awareness to the formers regarding the significant effect of Nanofertilizers compare to chemical fertilizers and fungicides.

Brief description :

Nanotechnology plays an important role in modern agriculture to address global challenges such as climate change, severity of plant diseases, and the limited availability of important plant nutrients. To gain higher crop production, continuous use of agrochemicals increases environmental contamination, cost of food production and undesirable side effects

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DEPARTMENT OF COLLEGIATE EDUCATION

From

Senior Accounts Officer
Directorate of Collegiate Education,
Chennai - 600 006.
Tamil Nadu State.

To

41 THE PRINCIPAL,
SADAKATHULLAH APPA COLLEGE,
RAHMATH NAGAR,
TIRUNELVELI 627011

Rc.No.31350/L/2020 Dated 08.04.2022

Sir / Madam,

Sub : Department of Collegiate Education – Stipend to Research Scholars (full time) payment to the scholars sanctioned during 2020 batch. For Fresh (1st year) forwarding of **NEFT** – Regarding.

Ref : Director's Proceedings Rc.No.31350/L/2020Dated : 24-02-2022

I am to state that as per the details given below, Ph.D Scholarship amount has been transferred to your bank account through **NEFT** on 29-03-2022 I request you to disburse the same as per the guidelines provided with this letter. I request you to acknowledge receipt of this letter immediately.

I also request you to inform immediately in case the amount has not been received in your bank account with relevant documents so as to verify and re-send the same.

S.NO	NAME OF THE CANDIDATE	NAME OF THE COLLEGE	SUBJECT	AMOUNT
1	SANJEETHA SUBIN M	SADAKATHULLAH APPA COLLEGE, RAHMATH NAGAR, TIRUNELVELI 627011	ZOOLOGY	60000
2	SHAJAHAN A	SADAKATHULLAH APPA COLLEGE, RAHMATH NAGAR,	ZOOLOGY	60000
3	MUTHUSELVI M	SADAKATHULLAH APPA COLLEGE, RAHMATH NAGAR,	CHEMISTRY	60000
4	WILSON EVERBRIGHT A	SADAKATHULLAH APPA COLLEGE, RAHMATH NAGAR,	HISTORY	60000

TO DRO 18/4/22

1258 18/4/22

STIPEND TO FULL – TIME Ph.D SCHOLARS SCHEME

STAMPED RECEIPT

RANK NUMBER: /2020

Received with thanks from the Director of Collegiate Education, Chennai – 600006 through the Principal Sadakathullah Appa College .....a sum of Rs. 60,000/- (Rupees Sixty Thousand Only) on account of stipend to Full-Time Research Scholars sanctioned in the Proceedings Rc. No. 31350/L/2020 dated 29.06.2022 of the Director of Collegiate Education, Chennai – 600006 for 2nd year 2020.

Scholar's Signature on Revenue Stamp : 

Scholar's Full Name : A. Shajahan

Rank No :

Subject : Zoology

Place : Tirunelveli.

Date : 18.08.2022

CERTIFICATE

Certified that the scholar is not in receipt of any other regular scholarship / Stipend / Financial Assistance etc., and that the stipend amount has been disbursed in full to the scholar concerned.

SADAKATHULLAH APPA COLLEGE AUTONOMOUS TIRUNELVELI-11

18/08/22

PRINCIPAL
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

Signature of the Principal with College Seal

Place : Tirunelveli

Date : 18.08.2022

NOTE : Please indicate at the top, the rank number assigned to the scholar for this stipend