

Title of the Project **Exploration, utilization, conservation and documentation of Allium species in northeast India**

2. NAME AND ADDRESS OF THE PRINCIPAL INVESTIGATOR **Dr. Ashalata Devi**

Dept. of Environmental Science

3. NAME AND ADDRESS OF THE INSTITUTION **Tezpur University**

Napaam-784028, Tezpur, Assam

4. UGC APPROVAL LETTER NO. AND DATE **F. No. 41-1087/2012 (SR) & 26th July, 2012**

5. DATE OF IMPLEMENTATION **01.07.2012**

6. TENURE OF THE PROJECT **3 years**

7. TOTAL GRANT ALLOCATED **Rs. 10,89,300.00**

8. TOTAL GRANT RECEIVED **Rs. 8,75,040.00**

9. FINAL EXPENDITURE **Rs. 8,99,926.00**

10. TITLE OF THE PROJECT **Exploration, utilization, conservation and documentation of Allium species in northeast India**

11. OBJECTIVES OF THE PROJECT

1. Exploration, identification and habitat characterization of Allium species occurred in different habitat of northeast India.
2. Germplasm collection and protection of *Allium species* under the existing microclimatic conditions at nursery.
3. Study on ethnobotanical importance of the Allium species.
4. Study on phenology, and growth and regeneration potential of a few Allium species having food value and ornamental value.
5. Estimation and biochemical characterization of some important Allium species.

SUMMARY OF THE FINDINGS

A total of 15 *Allium* species namely, *Allium cepa*, *Allium chinense*, *Allium fasciculatum*, *Allium hookerii*, *Allium macranthum*, *Allium porrum*, *Allium prattii*, *Allium rubellum*, *Allium sativum*, *Allium scheenoprasum*, *Allium sikkimense*, *Allium stracheyi*, *Allium tuberosum*, *Allium victorialis* and *Allium wallichii* were recorded through extensive field survey in different parts of northeast India. Recorded *Allium* species are distributed in different habitat type and altitudinal gradient ranging from 400 to 5400 m amsl. All the recorded were used for various purposes by several tribes of northeast. Out of 15 species, 10 species have medicinal values which have been widely used for treatments of various health ailments. *Allium cepa*, *Allium chinense*, *Allium hookeri*, *Allium macranthum*, *Allium prattii*, *Allium porrum*, *Allium sativum*, *Allium schoenoprasum*, *Allium tuberosum*, and *Allium wallichii* have some medicinal properties. Leaves, bulbs, cloves and roots of these species are commonly used for treatments of some common health problems like cold and cough and skin rashes.

Allium cepa and *Allium sativum* is widely used as flavouring agent and for garnishing purpose. Bulbs and leaves of *Allium chinense* are commonly used as flavours in various food preparations such as soups, curries, etc. *Allium macranthum*, *Allium prattii*, *Allium rubellum* and *Allium wallichii* are occasionally taken as favouring agent in small quantity. Sun dried/furnaces dried leaf powder of *Allium* species has good shelf-life for off-season consumption and for sale in the market.

Allium prattii, *Allium fasciculatum*, *Allium sikkimense*, *Allium wallichii*, *Allium victorialis*, and *Allium macranthum* are used as ornamental flowering plant by various communities. *Allium prattii*, *Allium fasciculatum* and *Allium sikkimense* are used as ornamental flowering plant by Lepcha community of Sikkim. *Allium victorialis* is used as ornamental flowering plant by Meitei community of Manipur. Flowers of *Allium prattii* and *Allium wallichii* are also having ornamental value for Monpa community of Arunachal Pradesh.

Seven species of *Allium* are found to be available seasonally in different local market of the region. The price of the species differs seasonally and spatially along with the variation in parts of the plants available. Generally, *Allium* species is abundant during the summer rainy season

and declines in dry winter season. *Allium cepa* is the most sold *Allium* species followed by *Allium sativum* in northeast India.

Five *Allium* species namely, *Allium cepa*, *Allium chinense*, *Allium hookerii*, *Allium sativum*, and *Allium tuberosum* were grown and maintained as germplasm in the experimental shade house. A few of the important *Allium* species namely, *Allium chinense*, *Allium hookeri* and *Allium tuberosum* were selected for the study of phenology, and growth and their regeneration potential. All the 30 individuals planted for the study of growth and development were observed for various growth parameters in terms of plant height, leaf number, collar diameter and phenology. Observation of each plant was made regularly at weekly interval for a period of 4 months and recorded data were analyzed.

New leaves emerge from the rhizomatous root/bulb of *Allium chinense*, *Allium hookeri* and *Allium tuberosum* which give rise to a new plant. When plant matured the rhizomatous root/bulb branches out into multiple plants from the same individual.

Phytochemical constituent like, chlorophyll, amino acid, proline, total leaf soluble protein, NPK, Na, Ca, Fe, Zn, Ca, Pb and Cd of the selected three *Allium* species (*Allium hookeri*, *Allium chinense* and *Allium tuberosum*) were analyzed using leaf sample following standard methods.

**UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002**

STATEMENT OF EXPENDITURE IN RESPECT OF MAJOR RESEARCH PROJECT

1. Name of Principal Investigator Dr. Ashalata Devi
2. Deptt. of Principal Investigator Environmental Science
University/College Tezpur University
3. UGC approval Letter No. and Date F. No. 41-1087/2012 (SR) & 26th July, 2012
4. Title of the Research Project Exploration, utilization, conservation and documentation of
Allium species in northeast India
5. Effective date of starting the project 01.07.2012
6. a. Period of Expenditure: From 01-04-2015 to 31-03-16
b. Details of Expenditure

Sl. no.	Items	Amount Approved (Rs.)	Expenditure incurred (Rs.)
i.	Books & Journal	0.00	0.00
ii.	Equipments	0.00	0.00
iii.	Contingency	10000	10060
iv.	Travel/fieldwork	60000	45290
v.	Hiring Services	20000	23000
vi.	Chemicals & Glassware	24000	24007
vii.	Overhead	0.00	0.00
viii.	Any other items (please specify)	78240	126000
	Man power (Project fellowship)		
	Staff (date of appointment) <u>08-04-2013</u> (from <u>08-04-13</u> to <u>08-04-13</u>)		
	(Please give details of staff appointed in the prescribed format annexure IX as per XI plan guidelines of Major Research Project)		
	Total	Rs. 192240	Rs. 228357

1. It is certified that the appointment(s) have been made in accordance with the terms and conditions laid down by the Commission.
2. If as a result of check or audit objection some irregularly is noticed at later date, action will be taken to refund, adjust or regularize the objected amounts.
3. Payment @ revised rates shall be made with arrears on the availability of additional funds.


Finance Officer
Tezpur University

4. It is certified that the grant of Rs. 1,92,240 (Rupees One lakh ninety-two thousand two hundred and forty only) received from the University Grants Commission during 2015-16 under the scheme of support for Major Research Project entitled “Exploration, utilization, conservation and documentation of Allium species in northeast India” vide UGC letter No. F. F. No. 41-1087/2012 (SR) dated 26th July, 2012 and the unspent balance of Rs. 11,231.00 of the previous year out of which Rs. 2,28,357.00 has been utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the University Grants Commission . The excess expenditure of Rs. 24,886.00 will be met from the next year grant to be received from UGC.

SIGNATURE OF PRINCIPAL INVESTIGATOR

REGISTRAR/PRINCIPAL

(Seal)

Registrar

Tezpur University

SIGNATURE OF THE CO-INVESTIGATOR

For SURAJIT CHAKRABORTY & CO.
CHARTERED ACCOUNTANTS

CA, SURAJIT CHAKRABORTY
(Proprietor)

Membership No.- 305054



UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110 002

Utilization certificate

Certified that the grant of **Rs. 1,92,240** (Rupees One lakh ninety-two thousand two hundred and forty only) received from the University Grants Commission during the FY 2015-16 under the scheme of support for Major Research Project entitled "Exploration, utilization, conservation and documentation of Allium species in northeast India" vide UGC letter No. F. F. No. 41-1087/2012 (SR) dated 26th July, 2012 and the unspent balance of **Rs. 11,231.00** of the previous year out of which **Rs. 2,28,357 only** has been utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the University Grants Commission. The excess expenditure of **Rs. 24,886.00** will be met from the next year grant to be received from UGC.

SIGNATURE OF THE
PRINCIPAL INVESTIGATOR

REGISTRAR/PRINCIPAL

(Seal)
Registrar

Tezpur University

STATUTORY AUDITOR

(Seal) **Finance Officer**
Tezpur University

SIGNATURE OF THE CO-INVESTIGATOR

For SURAJIT CHAKRABORTY & CO.
CHARTERED ACCOUNTANTS

CA. SURAJIT CHAKRABORTY
(Proprietor)
Membership No.- 305054