

National Mission on Himalayan Studies

PERFORMA FOR THE HALF YEARLY PROGRESS REPORT

(Period from 01/04/2017 to 30/9/2017)

Project Title: Collection, evaluation and conservation of native crops germplasm form Uttarakhand hills and pre-breeding through community participation

Sanction No. and date: NMHS/MG-2016/003/8501-7 dated: 31-03-2016

Institution Name: G.B. Pant University of Agriculture & Technology, Pantnagar, U.S. Nagar, Uttarakhand-263145

Personal Details:

Name and Address of the PI:

Dr. Anand Singh Jeena, Professor & Nodal Officer,
Pantnagar Centre for Plant Genetic Resources,
Directorate of Experiment Station, G.B. Pant University of Agriculture &
Technology, Pantnagar, U.S. Nagar, Uttarakhand-263145

Name and Address of the Co PI:- NA

Partner details:

Sl.No	Name/ Address	Work assigned to partners	Fund allocated to partner during the period
1.	Himalayan Gram Vikas Samiti, Awalaghat Road, Dasaithal Gangolihat (Pithoragarh	1. Motivation of farmers and organization of trainings for creating awareness on germplasm collection <i>in situ</i> conservation and seed production. 2. Collaboration for survey and collection of land races of native crops from different districts of Uttarakhand. 3. In-situ conservation of identified strains (germplasm) by the community groups at the farmer's field.	175300

Project Objectives –

1. Survey, collection and purification of germplasm / land races of native crops (millets, pulses and vegetables) of Uttarakhand
2. Evaluation and characterization of strains for identification of specific distinguishable traits by morphological characters and biochemical and molecular techniques
3. In-situ conservation of identified strains (germplasm) by the community groups at the farmers' field and ex-situ conservation at Pantnagar Centre for Plant Genetic Resources (PCPGR), respectively for future use.

4. Development of model mechanism for in-situ conservation linked with seed production (millets and pulses) and seedling production (vegetables) of identified unique germplasm for income generation.

Completion in the last six months in % (According to each Deliverables):-

Sl. No.	Quantifiable Deliverables (as per sanction letter)	Output/ achievements	Performance in terms of Monitoring indicators	Remarks
1.	Appointment of SRFs and Project Staff, Workers etc	Staff appointed by Main centre as well as partner NGO.	100%	
2.	Meeting with SHGs with the help of NGO and Awareness Lectures	One village level meetings of farmers was conducted at Kothera, Block: Gangolihaat, Pithoragarh on 3/6/2017 A total of 33 villagers (29 females and 4 male) attended the Village level meeting to discuss on the importance of conservation of local germplasm and their utilization in future	33%	
3	Training of groups (SHGs) on in-situ conservation of germplasm	On day training on "Seed production of Framers' varieties" was conducted at the H.Q of HGVS at Gangolihaat. The training was attended by 29 participant from different villages of Gangolihaat, Berinag and Munshyari blocks including 20 females participants Five potential Farmers have been identified and provided assistance in Seed plot establishment for In -situ conservation of identified strains (germplasm) by the community groups at their field	33%	
4.	Survey and exploration of the plant germplasm in the hilly district of Uttarakhand with community participation and collection	Regular survey and Collection of germplasm were conducted by Staff of partner NGO. A Total 90 accessions were collected during the period.	50%	
5.	Purification of germplasm at PCPGR experimental fields and glasshouse (growing different crops at PCPGR)	65 collected accessions of Finger millet were purified during Kharif 2017	50%	
6.	Seed multiplication of purified strains	89 barnyard accession were multiplied	100%	

7.	Morphological characterisation of germplasm lines as per the descriptor (Recording and analysis of morphological data)	Morphological characterization of 65 accessions of finger millet was carried out and preliminary evaluation data were recorded.	50%																																	
8.	Evaluation of germplasm for nutritive values	89 barnyard accession were evaluated for their nutritive values particularly micronutrient contents (Zn, Fe, Cu, Mn)	50%																																	
9.	Identification of suitable biochemical and/ or molecular markers for differentiation among the germplasm through literature search	Suitable biochemical and/ or molecular markers were searched in literature.	75%	Will be continued as per requirement																																
10	Designing primers for crop wise identified markers and standardisation of biochemical and molecular marker protocols	Literatures had been searched and 30 primers had been designed for molecular characterisation.	50%																																	
11.	Biochemical and or molecular analysis of the germplasm for characterisation of unique lines.	Will be done after finding unique lines.	-																																	
12.	Ex-situ conservation of germplasm at PCPGR in mid-term storage facility with complete passport data of lines	<ul style="list-style-type: none"> • 89 barnyard accessions have been stored at PCPGR. • 90 new collection had been added to existing accessions collections <table border="1"> <tr> <td>Soybean</td> <td>16</td> <td>Moth bean</td> <td>4</td> </tr> <tr> <td>Finger millet</td> <td>15</td> <td>Barley</td> <td>3</td> </tr> <tr> <td>Mustard</td> <td>10</td> <td>Cowpea</td> <td>2</td> </tr> <tr> <td>Rice</td> <td>8</td> <td>Pea</td> <td>2</td> </tr> <tr> <td>Horse gram</td> <td>6</td> <td>Pigen pea</td> <td>2</td> </tr> <tr> <td>Black gram</td> <td>6</td> <td>Til</td> <td>2</td> </tr> <tr> <td>Lentil</td> <td>5</td> <td>Bajra</td> <td>1</td> </tr> <tr> <td>Barnyard</td> <td>7</td> <td>Maize</td> <td>1</td> </tr> </table>	Soybean	16	Moth bean	4	Finger millet	15	Barley	3	Mustard	10	Cowpea	2	Rice	8	Pea	2	Horse gram	6	Pigen pea	2	Black gram	6	Til	2	Lentil	5	Bajra	1	Barnyard	7	Maize	1	50%	
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Summary of progress

- The project entitled “Collection, evaluation and conservation of native crops germplasm from Uttarakhand hills and pre-breeding through community participation” was sanctioned by GBPIHED under NMHS, was implemented in the University from June 17, 2016 with the objective to explore and preserve the genetic wealth of Uttarakhand with respect to millets, pulses, vegetables and spices. During the first six month of the II year, a village level meeting of farmers was conducted at Village

Kothera, (Block: Gangolihat), Pithoragarh in which 33 villagers (mostly females) participated to discuss on the importance of conservation of local germplasm and their utilization in near future. Further one day training on “Seed Production of Framers’ varieties” was conducted at the H.Q of HGVS at Gangolihaat which was attended by 29 participants from different villages of Gangolihaat, Berinag and Munshyari block of Pithoragarh. For establishing Seed plot at farmers’ field, five potential farmers have been identified in order to in–situ conservation of identified strains (germplasm) by the community groups. Surveys were conducted during SHGs meetings for exploration of the plant germplasm. Finger millet accessions (65) were evaluated and purified at PCPGR. Seed of 89 barnyard accessions were multiplied and accessions were also evaluated for their nutritive values particularly micronutrient contents (Zn, Fe, Cu, Mn) and stored at PCPGR. In order to carry out molecular characterization of germplasm 30 primers had been designed for Finger millet and Barnyard millet. A collection of 90 new accessions had been added to existing collections.

Name of the PI: Dr. Anand Singh Jeena, Professor & Nodal Officer

Signature :

Date:

Supporting data files/ maps/ tables/ figures of the results to be attached



Meeting of SHG members and awareness lecture on Importance and Conservation of germplasm with Local at Village: Kothera



Training on Seed Production of Farmers' Varieties at HGVS, Gangolihat



Evaluation trial of Barnyard millet at PCPGR, Pantnagar