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Phyto-Diversity and Its Conservation Strategies in Permafrost Conditions at Extreme Altitude of Trans Himalaya in Leh-Ladakh (India)

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The Ladakh located in Trans Himalaya, is one such geographical entity having unique culture and the customary practice of indigenous knowledge to sustain man and animal life in harsh cold climatic condition. The vegetation of the cold desert supports temperate, sub-alpine and alpine vegetation comprises of herbs, shrubs and few species of trees which are of economically importance mainly in the form of food, fodder, medicine, fuel and ornamental purpose. To collect the germplasm of wild edibles and to record the uses of traditional vegetables and healthcare remedies practiced by the local inhabitants and Amchis (local herbal doctor), the survey was carried out in the three valleys of Ladakh viz., Nubra, Indus and Suru. Since the dawn of history, in the barren land of Ladakh, where otherwise the existence of life has been questionable; the indigenous people have been using wild plants as only source of their food, fodder and medicines. Of the known wild edibles plant species and varieties including, *Atriplex hortensis*, *Capparis spinosa*, *Nepta floccose*, *Allium carolinianum*, *Rheum spiciforme*, *Rhodiola tibetica*, *Rhodiola imbricate*, *Arnebia euchroma*, *Carum carvi*, *Teraxicum officinale*, *Lepidium latifolium*, *Potentill anserine*, *Hippophae rhamnoides* etc., constitute a small number of the imperative and nutritious un-trapped plants consumed in different areas across Ladakh. The present study was undertaken to evaluate the potential germplasm of indigenous vegetables through agro-morphological characterization, genetic diversity studies in order to study cultivation and conservation strategies for PGR including rare endangered wild relative plants species at Permafrost facility situated at extreme high altitude, Changla (17,600 ft amsl) in Leh-Ladakh (J&K).

Keywords: Conservation Strategies, Extreme Altitude, Permafrost Conditions, Phyto-Diversity, Trans Himalaya

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Improved Facilities and Methodologies for Regenerating Unadapted and Wild Groundnut Germplasm at ICRISAT Genebank

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Germplasm seed accessions require frequent regeneration for continued conservation and utilization. Regeneration of diverse crop germplasm accessions is a challenging task for large genebanks. The problem is severe especially with the wild relatives because of adaptation problems, lack of facilities and seasonal constraints where genebanks are located. Special facilities were created at ICRISAT Genebank for regenerating all the seed producing wild species of genus *Arachis* and unadapted *Arachis hypogaea* accessions. A total of 304 accessions represented by 41 wild species and 290 accessions of six botanical varieties of cultivated groundnut were successfully regenerated using these facilities. Much of the problems encountered during field regeneration especially with the wild species were overcome. Regeneration was possible round the year with minimum operational interference. The seedling establishment, plant growth and pod yields per cycle were significantly higher in these facilities. Establishing such facilities by genebanks could be advantages in efficient regeneration of problem accessions on a long-run for conservation and continued availability of diverse germplasm for utilization in crop improvement programs.

Keywords: Germplasm, Regeneration, *Arachis*, Wild species