

Conservation of local maize varieties of Chitlang in NARC Genebank, Khumaltar, Lalitpur

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Owing to its diverse climatic zones and ecosystems, Nepal is rich in diversity of agronomic crops, horticultural crops and forages. However, due to introduction of new crops and varieties, germplasms of indigenous agro-biodiversity are at risk of being threatened, endangered or extinct. There is a global concern to conserve local and indigenous germplasms *in situ* or *ex situ* to keep aesthetic values of natural ecosystems and to make them available for use in future.

In this connection, three local varieties of maize (*Zea mays* L.) and one local variety of horse gram (*Macrotyloma uniflorum* (Lam.) Verdc.) were collected from Kuchbu of Chitlang (1700 m altitude), ward no. 9 of Thaha Municipality, Makwanpur, by courtesy of local farmer Mrs. Goma Balami (Figs. 1, 2) and submitted to the National Agriculture Genetic Resources Center (Genebank) of Nepal Agricultural Research Council (NARC), Khumaltar, Lalitpur on March 9, 2023 for conservation (Figs. 3, 4). Three varieties of maize are Rato Makai (meaning red-colored in Nepali), Kalo Makai (meaning black-colored in Nepali) and Ghiu Makai (meaning as soft as Ghee in Nepali). They were planted in separate fields in 2079 Baisakh (2023 April) and harvested in 2079 Bhadra (2023 August). The maize is cultivated in Chitlang for food and feed purpose. According to Mrs. Balami, she cultivated those varieties due to different tastes and qualities. Recently, Fall Army Worm (*Spodoptera frugiperda* (J.E. Smith)), also known as American Army Worm, has been observed in maize fields of Chitlang (Fig. 5). The variety of horse gram is Khairo Gahat (meaning brown-colored in Nepali). It was cultivated in 2079 Baisakh and harvested in 2079 Kartik (2023 October).

A discussion was also held on possibility of establishing an On farm conservation in Chitlang in collaboration with NARC Genebank. MBUST will also continue to participate in germplasm conservation activities in collaboration with related organizations.



Fig. 1. Mrs. Goma Balami, carrying corm of local Taro (Seto Pindalu in Nepali) in Kuchbu, Chitlang, grown by herself.



Fig. 2. Samples of Kalo Makai, Rato Makai, Ghiu Makai and Khairo Gahat.



Fig. 3. Dr. Bal Krishna Joshi, Chief of NARC Genebank (left) and Dr. Bhushan Shrestha, Agriculture Researcher of MBUST (right) at NARC Genebank, Khumaltar, Lalitpur.



Fig. 4. With Senior Scientists of NARC Genebank, Khumaltar, Lalitpur.



Fig. 5. Infestation of maize plant by Fall Army Worm in Chitlang by courtesy of Mrs. Goma Balami (kindly confirmed by Dr. Samudra Lal Joshi, Senior Entomologist of Nepal).

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