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Short Communication

Diversity of Himalayan Corn

BHAG SINGH

National Bureau of Plant Genetic Resources, New Delhi

In the last two decades or so, 1,571 maize collections were made from different parts of the country, particularly from the Eastern Himalyan region and subsequently classified into 15 races and 3 sub-races, each with characteristics complex of traits associated with it (Singh, 1977 a, b). Also, over 800 maize collections from various parts of the country were further added to the above diversity by the NBPGR since its inception in 1976. Of these, more recently, 617 collections were made from the Western Himalayan region, particularly from Jammu hills, Jaunsar and Bhabar region, Pauri Garhwal, Tarai Bhabar regions of Kumaon and plains of Uttar Pradesh and Haryana; while 280 maize collections were added from Eastern Himalayan region, particularly from Sikkim and Garo, Khasi and Jaintia hills in Meghalaya. A rich diversity was observed for the grain character viz. flint, semi-flint, dent, opaque, floury and pop, which were white, yellow, creamish, brown, purple, red, blackish and varied grades of colour mixtures.

EVALUATION AND IDENTIFICATION OF PROMISING TYPES

The collections were grown in an augumented design at the Issapur Experimental Farm of NBPGR in the *kharif* 1986. The check varieties used were : Vijay, Tarun, Hunis, Diara and Basi. Some of the notable characteristics were observed in the collections from Garo and Khasi Hills. An Indian race *Khasi Riewhadem*, which has the largest ears among the Indian races, is still being preserved by the Khasi tribes. This race is highly productive, has creamish/white/yellow bold flinty grains and is much preferred locally. Among others, landrace like *Merakhu Bolma* from Garo Hills, has creamish/yellow opaque grains; others showed irregular but pointed kernel at base with conical ears; collections belonging to the primitive race *Tirap-Nag-Sahypung* showed most of the characters desired for the high population densities, medium height, erect leaves, small tassels and numerous ears.

Of the collections from Western Himalayas, representing bold, yellow to bright-yellow kernel and with medium to late maturity (distinct from Jaunpuri and Jalandhari groups) types, HP 73 and HP 106, gave high yields comparable with the released hybrids or composites. This showed high yield potential of local germplasm from the Western Himalayas. Another collection HP 119 proved to withstand drought. Some collections were found to belong to 'Bold Flint group' and thus considered to be of immense use in the improvement of maize

varieties. Some of these collections possessed eight kernel rows with yellow to bright yellow bold kernels and medium maturity. Another group of collections from Western Himalayas showed early maturity, medium ear length, slender with strong taper from base to tip, regular rows with multiplication of rows at the base. Majority of these collections belong to the race *Maidani Makka* and its sub-race 'Ganga'.

Some of the accessions which showed tolerance to leaf blight (*Helminthosporium turcicum*) at the Bureau's Regional Station, Shillong were BDJ/NKG-1, BDJ/NKG-8, BDJ/NKG-78 and BDJ/NKG-213 from Western Himalayas and the accessions BD-66, BD-120, BD-122, etc, were from the Eastern Himalayas. A total of 231 entries, particularly from tribal areas of Jaunsar and Bhabar and remote areas of Almora, were screened for reaction to *Helminthosporium turcium* after artificial inoculation at the Bureau's Regional Station, Bhowali and P 36 (Jaunsar) and P 414 (Almora district) showed tolerance. A wide range of variation was observed in plant, ear characters, plant height (140 to 310 cm), leaf length (32.0 to 105.0 cm), leaf width (3.3-11.0 cm), ear length (9.5 to 26.0 cm) and ear diameter (2.6 to 5.2 cm).

An 'Inventory on Indian Maize Germplasm' for part of the germplasm collections evaluated, has been prepared and a set of these collections has been kept for long term storage in the National Repository of NBPGR. The other set, as working collections for maintenance and supply, has been stored in the Germplasm Evaluation Division, NBPGR, New Delhi.

REFERENCES

Bhag Singh. 1977a. Races of Maize in India, Indian Council of Agricultural Research, New Delhi. pp. 106.

Bhag Singh. 1977b. Evaluation of primitive cultivars from North-Eastern Himalayan region in relation to lineages. Indian J. Genet. 37(1) : 103–13.