Germplasm Utilization

- Only a small proportion (<2%) of assembled germplasm has been used in breeding new cultivars.
- Greater use of germplasm is needed to develop high yielding cultivars with a broad genetic base for sustainable crop improvement.

Reasons for low use of germplasm

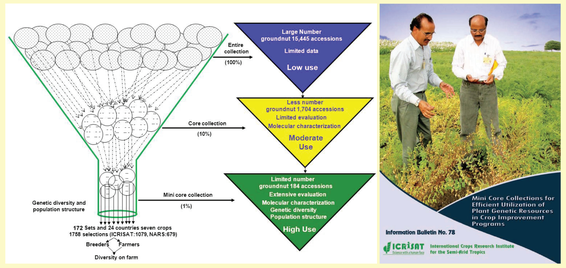
- Large size of collections.
- Lack of reliable data on traits of economic importance, which shows high genotype × environment interaction.
- Restricted access to the germplasm collections.
- Inadequate linkages between genebank and users.

Enhancing germplasm utilization

- To overcome the size-related problems of utilizing collections, developed core (10% of entire collection) and mini core (10% of core or 1% of entire collection) collections.
- Organized field days facilitating selection of promising germplasm by researchers.
- Extensive multi-disciplinary evaluation of germplasm, particularly mini core collections at ICRISAT and by NARS resulted in identification of several new promising sources for use in crop improvement programs. Supplied 266 mini core sets to researchers in 36 countries.
- 110 germplasm accessions were released as 146 cultivars in 51 countries and NARS partners have released over 800 varieties in 79 countries using germplasm and breeding lines from ICRISAT.

Core and mini core collections

Crop	Entire collection	Accessions used in core development	Core collection	Mini core collection
Sorghum	37,943	22,473	2,247	242
Pearl millet	22,211	20,766	2,094	238
Chickpea	20,140	16,991	1,956	211
Pigeonpea	13,632	12,153	1,290	146
Groundnut	15,419	14,310	1,704	184
Finger millet	5,949	5,940	622	80
Foxtail millet	1,535	1,474	155	35



Mini core collection as a means of accessing genetic resources by researchers.

Sorghum field days at ICRISAT, India.

Field days

Pearl millet field day at ICRISAT, India.

Selection of germplasm by NARS scientists during chickpea field day at ICRISAT, India.

Chickpea field day at ICRISAT, India.

Pigeonpea field day at ICRISAT, India.

Groundnut germplasm field days at ICRISAT, India.

Sorghum sweet stalk, a good source for ethanol.

Leaf variants are useful in academic studies.

ICRISAT
Science with a human face

International Crops Research Institute for the Semi-Arid Tropics

ICRISAT's scientific information:
EXPLOREit.icrisat.org

CGIAR
ICRISAT is a member of the CGIAR System Organization

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