



NUCSFNEE

1st National Conference on
Neglected and Underutilized Crop Species
for Food, Nutrition, Energy and Environment



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at **the NIPGR**

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First National Conference on
Neglected and Underutilized Crop Species
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BOOK OF ABSTRACTS

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Genetic and Genomic Resources: Proso millet, kodo millet and little millet

Diversifying crops and diets is important for food and nutritional security. Current agricultural systems and food habits encouraged research and development on major crops by neglecting traditionally important crops. Proso millet, kodo millet and little millet belonging to the group of crops called small millets. These are hardy crops with diverse adaptation and are considerably less affected by insect pests and diseases. They are nutritionally superior to the major food staples, thus play an important role in food, feed, fodder and nutritional security in the areas where these crops are grown. Genetic and genomic resources available in these crops are very limited when compared to major food staples. Globally over 29000, 5000 and 3000 accessions of proso millet, kodo millet and little millet, respectively have been conserved in genebanks. Genebank at ICRISAT conserves 849 proso millet, 665 kodo millet and 473 little millet accessions, and germplasm diversity representative subset called core collection have been established in these crops that provide access to diverse germplasm and their utilization in crop improvement. Genotyping 190 diverse germplasm accessions each of proso millet, kodo millet and little millet with genotyping-by-sequencing approach resulted in the development of genome-wide marker data set of 1882, 3461, and 2245 single-nucleotide polymorphisms, respectively. Evaluation of 200 accessions each of proso, kodo and little millets for agronomic and grain nutrient (iron, zinc, calcium and protein) traits resulted in the identification of germplasm sources for high grain yield, early maturity, greater seed weight and grain nutrients dense accessions. Multi-location evaluation of identified high yield grain nutrients dense accessions could potentially support in the release of high yielding nutrients dense cultivars and could contribute to crop diversification and better use of land, diet diversification, and reducing micronutrient and protein malnutrition.