



## **Generation Challenge Programme**

# **Annual Research Meeting 12–16 September 2007**

## **Poster Abstracts**

© The Generation Challenge Programme of the Consultative Group on  
International Agricultural Research.

Fair use: you are free to quote from, or reproduce, sections of this publication  
without further permission, provided the Generation Challenge Programme  
(GCP) of the Consultative Group on International Agricultural Research  
(CGIAR) is acknowledged as the source. We would also appreciate receiving a  
copy of the publication.

### 1.3 Diversity analysis of 3365 sorghums in the GCP composite germplasm set based on allelic variation at 41 SSR loci

*C. Tom Hash\**, *Claire Billot*, *Ramu Punna*, *Jean-Francois Rami*, *Laetitia Gardes*, *Rolf T. Folkertsma*, *Ronan Rivallan*, *Hari D. Upadhyaya*, *Monique Deu*, *Yu Li*, *Tianyu Wang*, and *Ping Lu*

*\*ICRISAT*

The GCP Global Composite Germplasm Collection of 3372 wild and cultivated sorghums includes 280 elite breeding lines and improved cultivars, 250 Chinese germplasm lines to be provided by CAAS, 64 wild accessions, and >3000 landrace accessions selected from previously defined core collections, for resistance/tolerance to production constraints, and/or for variation in other traits. A set of 48 sorghum SSR markers distributed across all ten linkage groups was chosen following preliminary analysis of 48 diverse genotypes with 104 available SSRs complemented by additional SSRs from CIRAD and ICRISAT. Diversity analysis was performed on 3367 accessions genotyped with 41 SSRs by CIRAD and ICRISAT. Breeding lines and wild accessions clustered separately from landraces, which exhibited structure explainable by geographic origin. Landrace population substructure was further characterized within racial groups (five basic races and ten hybrid races). Race bicolor showed little evidence of population structure, congruent with it being the original domesticate. Race kafir (largely from Southern Africa) was distinct. Accessions of the durra, caudatum and guinea races each formed four distinct geographic subgroups. The guinea race margaritifera group formed its own cluster, suggesting independent domestication. Intermediate races behaved similarly. A reference subset of 384 accessions was then defined for allele mining.

Notes:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....