RAPD Based Assessment of Genetic Diversity in 16 Cultivated accessions of Sorghum in Morocco

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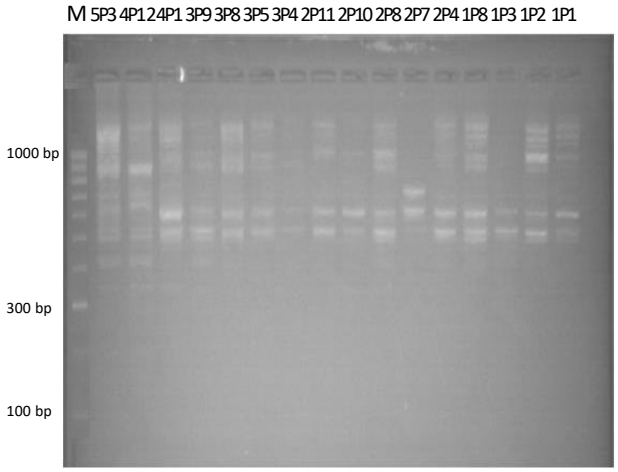
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Key Words: *Sorghum bicolor*, Accessions, RAPD markers, Genetic diversity.

I. Abstract

Sorghum (*Sorghum bicolor*) is one of the most wide spread cultivated grass species in the world. In this study, we analysed the diversity and genetic relationship among 16 accessions of local Moroccan sorghum (*Sorghum L Moench bicolor*) by using 40 random Amplified Polymorphic DNA (RAPD) markers. 315 alleles were detected ranging between 225 and 2995 bp, 189 (60%) were polymorphic and informative to differentiate the accessions. The number of alleles per locus varied, depending on the accession, from 3 to 11 with an average of 8.66 alleles per locus. The dendrogram, based on UPGMA analysis using similarity of Jaccard coefficient grouped the accessions according to their geographical origin. RAPD markers proved to be a reliable, rapid and practical technique of revealing phylogenetic diversity, which is, should prove valuable for sorghum breeding programs.

II. Image



Agarose gel electrophoresis of 16 sorghum accessions amplified products obtained by using RAPD H06 primer. M: 100-bp DNA ladder.

III. References

1. Agrama H.A. and Tuinstra M.R. 2003. Phylogenetic diversity and relationships among sorghum accessions using SSRs and RAPDs. African Journal of Biotechnology,2(10): 334-340.
2. Bahaa E. Abdel-Fatah, E.A. Ali, Aml A. Tag El-Din and Eatemad M. Hessein, 2013. Genetic Diversity among Egyptian Sorghum (Sorghum bicolor L. Moench) Landraces in Agro-morphological Traits and Molecular Markers. Asian Journal of Crop Science, 5: 106-124.
3. Djè J, Ater M, Lefèbvre C and Vekemans X. 1998. Patterns of morphological and allozyme variation in sorghum landraces of Northwestern Morocco. Gen. Res. Crop Evol. 45: 541-548.
4. Iqbal A, Sadia B, Khan A.I, Awan F.S, Kainth R.A and Sadaqat H.A. 2010. Biodiversity in the sorghum (Sorghum bicolor L. Moench) germplasm of Pakistan. Genet. Mol. 9 (2): 756-764.

IV. Biographie

Rajae Alloudane is a PhD student working in the Biotechnological Valorization of Microorganisms, Genomics and Bioinformatics laboratory at Abdelmalek Essaadi University of Tangier-Tetouan, Morocco. Her thesis project is the study of the genetic diversity of cultivated sorghum by molecular markers.

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Session : Biodiversity / (14-1) plant diversity

Category: Oral/ Poster presentation

Passport Number: JL9128123