AFLP-based Genetic Linkage and Crossover Analysis in $F_{10}$ Inbred Lines of Cowpea (Vigna unguiculata (L.) Walp.)

I. K. Asante* and C. Fatokun

1 Department of Botany, P. O. Box LG55, University of Ghana, Legon-Accra, Ghana
2 International Institute of Tropical Agriculture, University of Ibadan, Ibadan, Nigeria
* Corresponding author; E-mail: ikasante@ug.edu.gh

Abstract

Genetic linkage map was constructed within the cultivated gene pool of cowpea from $F_{10}$ recombinant inbred population of 94 individuals. The recombinant population was derived from a cross between the breeding lines Kanannado and 88DM-345 which were developed in Nigeria. Kanannado is day sensitive while 88DM-345 is day neutral. Twenty-three AFLP primer combinations were tested on the inbred lines and the parentals generating 141 marker loci. A total of 96 AFLP marker loci identified 11 linkage groups spanning 2551.6 cM with an average distance of 231.9 cM. Average marker density was 26.58 per marker loci. Linkage groups ranged from 17.2 to 1137.8 cM and included 3–35 marker loci, respectively. A total of 4330 crossing-over with an average of 2.0 per cM was observed. The average number of crossing-over per individual over the genome was 4.5 per chromosome per individual.