



Authentication of *Euphorbia peplus* L. family Euphorbiaceae growing in Egypt using Finger Printing

Gamal I.A. Mohamed¹; Ahmed Mohamed Zaher²; Ahmed A. Ali²; Hanaa Mohamed Saeyd² and Sabrin R. Mohamed²

Abstract:

Abstract RAPD-PCR was performed using six random primers to identify the genetic diversity among six plant samples belong to two genera (*Euphorbia* and *Ricinus*). The dendrogram, based on genetic distance, depict the relationship among the investigated plant samples, separate clearly the six samples. The closest relationship was observed between *E. geniculata* and *E. aphylla*; and *E. pulcherrima* and *E. peplus*, while this relationship was quite separated between these four samples and the other two samples *E. cactus* and *R. communis*. Fragments generated by the six primers show a polymorphism ratio of 88.9%. Bands 3500 and 750 bp generated by primer OP-Z13, and also bands 2000, 1500, 1400, 1200, 1000, 720 and 550 bp generated by primer OP-A09 existing only in the plant samples of *E. geniculata* and *E. aphylla*, which suggest that these bands can be used as a positive molecular marker to identify these plant samples. Bands 2500, 1720, 1650, 1300, 950 and 250 bp generated by primer OP-A09, and band 1200 bp generated by primer OP-A20 and band 350 bp generated by primer OP-Z19 and band 250 bp generated by primer OP-Z17 were common in all plant samples of family Euphorbiaceae. Moreover, band 430 bp generated by primer OP-Z17 was characterized for *Ricinus communis* and absent in other plants of genus *Euphorbia*. Also, band 2700 bp generated by primer OP-A20 and band 210 bp generated by primer OP-Z19 existing only in *Euphorbia peplus*. This study highlights the usefulness of RAPD assay for determining genetic variation in different plant genera and for estimating genetic distances between different plant samples. Moreover, knowledge of genetic distance among genera and species, and genetic diversity/structure within genera could be useful for conservation of genetic resources. Data presented here are the first report in Egypt of genetic variation inside genera *Euphorbia* and *Ricinus* described at the molecular level. We consider this work as a first step in molecular characterization of genera *Euphorbia* and *Ricinus*, thus, it is recommended to extend the panel of samples and primers in the future.

Keywords:

Key words: Fingerprinting, RAPD-PCR, Genetic marker, *Euphorbia*, *Ricinus*.

Published In:

Assiut J. Agric. Sci., , NULL , NULL