

Comparative Assessment of ISSR and RAPD Markers among Egyptian Jojoba Shrubs

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Abstract : Classical methods of identification, based on agronomical characterization, are not always the most accurate way due to the instability of these characteristics under the influence of the different environments. In order to estimate the genetic diversity, molecular markers provided excellent tools. In this study, Genetic variation of nine Egyptian jojoba shrubs was tested using ISSR (inter simple sequences repeats), RAPD (random amplified polymorphic DNA) markers and based on the morphological characterization. The average of the percentage of polymorphism (%P) ranged between 58.17% and 74.07% for ISSR and RAPD markers, respectively. The range of genetic similarity percents among shrubs based on ISSR and RAPD markers were from 82.9 to 97.9% and from 85.5 to 97.8%, respectively. The average of PIC (polymorphism information content) values were 0.19 (ISSR) and 0.24 (RAPD). In the present study, RAPD markers were more efficient than the ISSR markers. Where the RAPD technique exhibited higher marker index (MI) average (1.26) compared to ISSR one (1.11). There was an insignificant correlation between the ISSR and RAPD data (0.076, $P > 0.05$). The dendrogram constructed by the combined RAPD and ISSR data gave a relatively different clustering pattern.

Keywords : correlation, molecular markers, polymorphism, marker index

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