

Investigation of Genetic Variation among *Anemone narcissiflora* L. Population Using PCR-RAPD Molecular Marker

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Abstract : Species of *Anemone narcissiflora* is belonged to *Anemone* genus of Ranunculaceae family. This species has two subspecies named *narcissiflora* and *willdenowii* which the latest is recorded in Iran in 2010. Some samples of *A. narcissiflora* is gathered from kuhkamar-zonouz region of East -Azerbaijan province, Iran to study the genetic diversity of the species by using RAPD molecular markers, and estimation of genetic diversity were evaluated with the using 10mer RAPD primers by PCR-RAPD method. 39 polymorphic bands were produced from the six primers used in this technique that the maximum band is related to the RP1 primer, the lowest band is related to the RP7 and the average band for all primers were 6.5 polymorphic bands. Cluster analysis of samples in done by UPGMA method in NTSYSpc 2.02 software. Dendrogram resulting from migrating bands showed that the studied samples can be divided into two groups. The first group includes samples with 1-2 flowers and the second group consists of two sub-groups which the first subgroup consists of samples with 3-5 flowers, and the second subgroup consists of samples with 6-7 flowers. The results of the comparison and analysis of the data obtained from RAPD technique and similarity matrix represents the genetic variation between collected samples. This study shows that RAPD markers can determine the polymorphisms between different genotypes of *A. narcissiflora* and their hybrids. So RAPD technique can serve as a suitable molecular method to determine the genetic diversity of samples.

Keywords : *Anemone narcissiflora*, genetic diversity, RAPD-PCR

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