عنوان مقاله:

Phylogenetic Affinities of Wild and Cultivated Ornithogaloideae Based on ITS and trnL–F DNA Sequences by Extended Sampling from Iran

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خلاصه مقاله:

The taxonomic classification of subfamily Ornithogaloideae has been a subject of considerable controversy in recent decades. Ornithogalum is a relatively large genus in Ornithogaloideae including valuable ornamental and medicinal plants. These wild ornamentals, which are introduced into agriculture recently, are becoming increasingly popular as cut flowers, pot plants, and for gardening. This is the first molecular phylogenetic study that includes ۱۰ of the ۱۳ Ornithogalum species native to Iran. The aims of the present study were to use ITS and trnL-F sequences to explore phylogenetic relationships and to evaluate genetic resources of Ornithogaloideae naturally occurring in Iran, with an increased sampling of species to be compared to previous phylogenetic studies. In the present study, the combined tree resulted in the best-resolved phylogenetic relationships at the generic level. The results of Maximum Likelihood and Bayesian analysis of molecular data were compared to those from hierarchical cluster analysis of morphological characters. Based on the results, all specimens collected in Iran across all previously recognized taxonomic genera in Ornithogaloideae were placed in Ornithogalum sensu stricto and Loncomelos, which is in line with the morphological analysis. Divergent placements of multiple specimens of a single species in L. brachystachys, O. orthophyllum, and O. sintenisii are attributed to the possibility of past hybridization events, although incomplete lineage sorting and ITS paralogy cannot be overlooked. Increased understanding of naturally occurring variation among wild Ornithogalum populations of Iran and the phylogenetic relationships of wild and cultivated species of Ornithogaloideae could contribute to important opportunities to introduce new ornamentals and improve the agricultural performance of .ornamental varieties

کلمات کلیدی:

Molecular phylogenetics, Nuclear and Plastid DNA sequences, Ornithogalum, Loncomelos, Melomphis, Ornamental .plant