

عنوان مقاله:

Systematics of Carpinus: Molecular Phylogeny and Morphology

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خلاصه مقاله:

Carpinus is a genus of the family Betulaceae that comprises ۴۲ species worldwide. Moreover, more than a third of total Caspian forests are occupied by *C. betulus* and it has an important role in slope stabilizing. *C. orientalis*, commonly known as oriental hornbeam, is a small tree or often shrub, rarely over ۱۰ m tall, and a major pioneer species on slopes in shallow humus-poor or rocky soils. This species is distributed from southeastern Europe to the north of Iran, from west to easternmost of the Hyrcanian forest. Due to their peculiar and beautiful fruit cluster, some hornbeams are used as important ornamental plants. Taxonomy of this genus has always been problematic in Iran and the number of species ranges from ۲ to ۴ in different taxonomic literature. In the current study, we applied morphometric (PCA and cluster analyses) and molecular (ITS region) approaches to delineate the species boundary of the genus in Iran. Thirty-six quantitative and qualitative characters were used for morphological analyses. The PCA plot of morphological data divided the studied population into three groups. However, the cluster analysis revealed two major groups. Moreover, Iranian species of the genus *Carpinus* formed two distinct clades in the molecular analyses. The results of the present study showed that there are two *Carpinus* species in Iran, including *C. betulus* and *C. orientalis* with two subspecies and *C. schuschaensis* is introduced as a synonym for *C. orientalis* subsp. *macrocarpa*. In addition, the intraspecific morphological diversity has blurred species boundaries.

کلمات کلیدی:

ITS region, Carpinus, Hyrcanian forests, Iran morphology

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