

Marginal populations of Taurus cedar (*Cedrus libani* A. Rich)

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Abstract: Taurus Cedar, shows its largest and northern distribution in Turkey. The species, which is in the monopoly of Turkey, also has 344 ha in Lebanon and 150 ha in Syria as relict stands. It is estimated that only % 5 of its former existence has remained because of overexploitation for centuries.

A valuable portion of the genetic richness and diversity of forests is held by small populations living on the borders of natural species. These populations, in which species can survive under varying and extreme climatic conditions, defined as marginal / peripheral (MaP) populations. These small and isolated populations, with low gene flow and genetic diversity, are sensitive ecosystems and may be destroyed by the loss of appropriate adaptation properties by changing environmental conditions. The Taurus Cedar in Turkey generally shows a spreading along the line of Kaş and Eğirdir Barla Mountain and Köyceğiz-Künar Mountain and Kahramanmaraş-Engizek Mountain-Ahır Mountain between 800-2000 m altitudes. Apart from this general distribution in South Anatolia, there are two isolated stands in north around Niksar and Erbaa. Also there are isolated cedar remnant stands in the Afyon-Sultandağları-Deresinek Valley and Çaykışla Valley in the steppe transition zone in the Inner Northwest Anatolia. Apart from this isolated stands, cedar stands living in the natural border form the peripheral population of this species. The other distribution except in Turkey is just a single stand in Syria in 1250-1800 m altitude; and ten remnant stands spreading between 1100-1950 m. altitudes in Lebanon. These populations, which form MaP distributions of cedar, gain importance in terms of gene conservation, thanks to the possibility of owning adaptive genes/genotypes to global climate change conditions. The necessity for the conservation of genetic resources of Taurus Cedar was assessed at the international level in 1971 at the FAO Panel on Genetic Resources Experts and in 1977 it was considered among the first priority species to be taken into in-situ conservation. Köyceğiz-Künar Mountain forms the western natural border of Taurus cedar. The Cedar forest in the southward of south of Engizek Mountain, and the north of Ahırdağı and in Yavşan Mountain form the eastern border of natural distribution. The distribution as natural stands in 650 m altitude or individuals in 620 m altitudes between Antakya Hassa-Yoluklar and Söğüt Villages form the southern border in Turkey. 460 m - Finike is the natural distribution at the lowest altitude that it could reach individually. Rises to 2000 m in Taurus, and towards the inner parts on the Mount of Aydos in the north of the Bolkardağları to 2400 m with the effect of continentality. The cedar forests in -Feke and -Andırın areas have been identified as stand remnant, and pointed out to be protected. The first place cedar seen in the east beyond the distribution of cedar in the Beydağları; is around Bucak-Sobyra village, Karlık and Katran Mountains. In this study; it is aimed to draw attention to MaP populations in order to develop programs and policies for protection.

Keywords: Marginal/Peripheral population, Taurus cedar, Genetic diversity, Adaptation ability, Climate change