

PUBLICATIONS

MORPHOLOGICAL AND CHEMICAL CHARACTERIZATION OF TURKISH SALEP ORCHIDS

Ünal Karık¹, Kemal Hüsnü Can Başer²

¹ *Aegean Agricultural Research Institute, İzmir-Türkiye*

unal.karik@tarimorman.gov.tr (Responsible Author) ORCID: 0000-0001-6707-191X

² *Near East University, Director of The Institute of Graduate Studies, Nicosia-Turkish Republic of North Cyprus* kemalhusnucan.baser@neu.edu.tr ORCID: 0000-0003-2710-0231

Orchidaceae is one of the most diverse families of flowering plants, comprising approximately 880 genera and 26,000 species, and is considered the second-largest family after Asteraceae. It is a cosmopolitan family that grows naturally throughout the world, from tropical rainforests to terrestrial climates, and from sea level up to an elevation of 5,000 meters. Among these, the number of terrestrial orchid species is estimated to be around 20,000. In Turkey, 26 genera and 191 orchid taxa are found in the wild, 28 of which are endemic. All orchid taxa found in Turkey are terrestrial orchids. In this study, some orchid species found in the Aegean Region were grown in culture, and their morphological characteristics such as leaves, stems, and flowers as well as key quality parameters were examined. The results of the study revealed intraspecific morphological variations among 19 different orchid species. In particular, it was determined that stem length, number of leaves, and flower color varied among plants within the same species. In terms of quality analysis, the following parameters were examined in the dry tubers: starch (%), glucomannan (%), glucomannan-to-starch ratio (%), dry matter (%), whiteness index (WI), and pH values. Depending on the species, the starch content ranged from 18.64% to 54.72%, the glucomannan content ranged from 16.34% to 52.65%, the glucomannan/starch ratio from 88% to 96%, the dry matter content from 88.36% to 92.79%, the whiteness index (WI) from 76.62 to 82.10, and the pH value from 7.25 to 7.91. The results indicated statistically significant variation in the quality characteristics of the salep orchid species evaluated. Following the assessment of their cultivation potential, two species were identified as promising candidates for field production and subsequently incorporated into breeding programs. These breeding efforts resulted in the registration of both species as new varieties in 2026.