

## Surface morphology and micro morphometric measurements using SEM-EDX on seeds of some *Fagus orientalis* Lipsky. population

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**Abstract:** In Turkey, *Fagus orientalis* Lipsky is one of the important broadleaves tree species. The species is distributed in Black Sea Regions of Turkey. However, relict oriental beech forests are distributed in the Eastern Mediterranean region of Turkey. Conservation of oriental beech genetic resources is an important issue for sustainable forestry and afforestation strategies. The seed is a very important material for outdoor plantation conditions, regeneration, rehabilitation and conversion to high forest practices for oriental beech stands. In order to reveal some characteristics of seeds, selected the three different oriental beech population from Sinop, Kastamonu-Cide and Kastamonu-Bozkurt respectively. In this study, it has been investigated the seed surface morphology characteristics and some micro morphometric characters using SEM (Scanning Electron Microscope) – EDX (Energy Dispersive X-ray Microanalysis) and SM (Stereo Microscopes). Particularly, it has been examined seed coat size, seed surface size, seed color, lengths and widths of seed wing, hilum and micropyle on these analysis. Additional it was detected of seed coat ornamentation and elemental analysis. The elemental analysis of C, O, N, Na, Mg, Si, K, P, N, Ca, S and Cl elements have also tried to obtain. According to the results 12 different element were detected in seed coat surface Bozkurt (%57 C, %21 O, % 11,8 Ca), Cide (%65 C, %22 O), Sinop (%53 C, %42 O). The elemental analysis Kastamonu-Bozkurt, Kastamonu-Cide and Sinop provenances of seed coat surface generally C and O elements were found whereas in the Bozkurt were detected Ca. As a result of all the data it can be said that these different *Fagus orientalis* L. seed population characterization and surface morphology analysis are similar.

**Keywords:** Seed coat, Surface morphology, SEM, EDX, Stereo microscopes, Oriental beech