

## عنوان مقاله:

Pollen Ultrastructural Image Analysis among Ancient Native Olive Genotypes in the Central Eastern Tunisia

محل انتشار:

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### خلاصه مقاله:

The olive tree (Olea europaea L.) is considered as one of the oldest and the most important fruit crops of the Mediterranean basin, which is characterized by the existence of a considerable number of different olive cultivars. Therefore, the olive cultivar identification is crucial to safeguard the genetic patrimony of this species. Different morphological and molecular markers were used to discriminate among cultivars. The aim of the present work was to describe different pollen morphological and ultrastructural parameters (shape, size and exine pattern) as an additional tool for the identification of olive cultivars. Observations were carried on seventy centennial olive accessions grown in the Central Eastern part of Tunisia using Scanning Electron Microscopy (SEM) and Image analysis (ImageJ). Pollen were three-zonocolpate and elliptical-prolate or subprolate. Pollen morphological qualitative traits revealed specific differences among the studied genotypes including variation in whole grain shape and also exine pattern ornamentation as meshes profile and regularity and muri thickness. The quantitatively measured traits were significantly different among pollen from diverse genotypes. Polar and equatorial diameters varied from Y1.A. to Y9.AA μm and from IF.FY to YI.IF μm, respectively, while the pollen area ranged between YYF.ΔA and FFF. ΨΔ μmY. Frequency distributions of most measured pollen parameters depicted a normal distribution. The three principal components of the Principal Component Analysis (PCA) accounted for more than 97% of the total variation. The first Principal Component (PCI) was correlated to pollen size. The second (PCI) and the third (PCI) were correlated to exine texture and to pollen shape, respectively. Both morphometric features and exine pattern observations were potentially relevant tools to discriminate among the studied genotypes. Further combination between pollen ultrastructural analysis, morphological and molecular markers is fully desirable, in subsequent work, to improve both reliability and

.discriminative ability for cultivars classification

**کلمات کلیدی:** Exine pattern, Olea europaea L, Pollen micromorphology, Scanning electron. Microscopy

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