

عنوان مقاله:

Morphometric and zymogram patterns of peroxidase and superoxide dismutase enzymes analysis in populations of mosses in north of Iran

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خلاصه مقاله:

The Hyrcanian forests have a remarkable variety of moss species which research on their taxonomy is of great importance. Since *Forsstroemia remotifolia*, *Homalia besseri* and *Pseudoleskeella catenulata* are exclusive and native mosses species of Hyrcanian forests, so in the current study, fourteen populations from three provinces in the north of Iran including Golestan, Mazandaran and Guilan were collected at the same altitudes in autumn ۲۰۱۷. In order to reveal the relationships among these species and populations, a cluster analysis based on numerical taxonomy and zymogram patterns of peroxidases and superoxide dismutase with Euclidean distances was performed. Numerical taxonomy analysis showed plant length, marginal laminal cell length and middle laminal cell length are appropriate traits to distinguish the species of *F. remotifolia*, *H. besseri* and *P. catenulata* from each other as well as their populations. The zymogram analysis showed genetic variability among species and also within populations of *F. remotifolia*, *H. besseri* and *P. catenulata*. Accordingly, the isozyme banding pattern of peroxidases showed a total of ۶, ۷ and ۵ bands for *F. remotifolia*, *H. besseri* and *P. catenulata*, respectively. However, ۴ isozyme bands were detected for superoxide dismutase for all three species. Furthermore, the morphological analyses in some populations was not matched with the isoenzyme banding pattern of enzymes in the current study. In conclusion, the biosystematics studies (morphometry and zymogram patterns of peroxidase and superoxide dismutase) indicate the close relationship between *F. remotifolia* and *P. catenulata*.

کلمات کلیدی:

biosystematics, Hyrcanian forests, Numerical Taxonomy, Zymogram

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