

## عنوان مقاله:

Micromorphology and anatomy of achene in *Thalictrum* in Iran

## محل انتشار:

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## خلاصه مقاله:

A comprehensive micromorphological and anatomical study was carried out on achene of 5 species and 1 variety from *Thalictrum* using scanning electron microscopy and hand cross sections to evaluate achene characteristics for use in the examination of systematic relationships. Considerable differences were found in achene micromorphology and anatomy both among the species and variety. Exocarp was ribbed and the shape of exocarp cells was either papillate, reticulate, ruminant and reticulate-papillate. Also the number of fibre cells, collenchymas, sclerenchymas, parenchyma and vascular bundle were important characteristics for distinguishing the taxa. A phenogram from statistical analysis based on 9 quantitative anatomical traits showed that varieties of *Th. minus* have different anatomical characters and are similar to *Th. tacabicum*. Also Our data convincingly support a close relationship between *Th. isopyroides* and *Th. foetidum* more than other species. On the other hand *Th. sultanabadense* with lesser vascular bundles and curved achene showed less similarity with other species. This study is congruent with the earlier groupings of the *Thalictrum* species based on morphology and also agrees in part with molecular studies. The results of this study showed that the anatomical features of the achene due to the provision of diagnostic traits can be useful for identifying and isolating species of this complex genus.

## کلمات کلیدی:

achene sculpturings, Anatomy, cluster analysis, Ranunculaceae, SEM

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1537147>

