

## عنوان مقاله:

THE POTENTIAL VALUE OF PHYTOCHEMICAL AND MICROMORPHOLOGICAL CHARACTERS IN TAXONOMIC  
(TREATMENT OF GENUS VITEX L. (LAMIACEAE

## محل انتشار:

مجله گیاه شناسی ایران، دوره 12، شماره 1 (سال: 1387)

تعداد صفحات اصل مقاله: 21

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## خلاصه مقاله:

Vitex L. (Lamiaceae) in Iran was reviewed using morphological and phytochemical characters. *Verbena officinalis* (Verbenaceae) was also studied for comparison. The pollen grains, were examined using SEM and LM Furthermore, the petiolar anatomy, trichome structure and morphology of different plant parts were studied. The essential oils of aerial plant parts were extracted and identified. Pollen grains among the studied species of *Vitex* are tricolpate, isopolar, circular in the polar view, while in *Verbena officinalis* they are tricolporate and triangular. The exine ornamentation provides characteristic features useful for delimitation of the species in our group. The SEM micrographs of fruits, leaves and stems show uni- and tetra-cellular glandular and simple multi-cellular trichomes. The petiolar anatomy of the first to the third lower nodes showed different patterns in the shapes and arrangement of the vascular bundles. Form phytochemical point of view  $\alpha$ -pinene, sabinene and limonene are the characteristic compounds in *Vitex* spp. and are present in examined species in high concentrations. In most species monoterpenoids are the major constituents of the oil. There are differences in mono- and sesquiterpenoid compounds of the oils among species. Examining the morphological and micro-morphological characters of leaf, stem, corolla and calyx in combination with the phytochemical characters revealed the occurrence of four species in the flora of Iran including *V. agnus-castus*, *V. negundo*, *V. trifolia* and *V. pseudo-negundo*. Among these species high morphological, anatomical and phytochemical variations were observed in *V. pseudo-negundo*. Moreover, the affinity of *Vitex* within .Lamiaceae genera is supported

## کلمات کلیدی:

Vitex, Anatomy, Lamiaceae, pollen, Phytochemistry, Morphology

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