Pollen morphology of some Allium L. species (Alliaceae) from Iran

By

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With 4 plates and 3 tables

Abstract


Pollen grains of 30 Allium species, representing 15 of the currently recognized sections distributed in Iran, were examined by light and scanning electron microscopy. The pollen grains were eutectate, mono-anasulcate and heteropolar, 22 to 38 µm long (equatorial axis E) and 13 to 24 µm wide (polar axis P), the form was peroblate to suboblate (mean of P/E ratio 0.46 to 0.69) and in polar view boat-shaped. Sculpturing was rugulate to microrugulate and perforate, with transitions to striate condition in subg. Melanocrommyum and a few more species. Clear striate sculpturing occurred only in A. helicophyllum. Our data confirmed an elongated sulcus continuing to the proximal side and ending before the proximal pole to be apparently a synapomorphy of sect. Allium only. The relatively short sulcus of A. borszczowii can be accepted as palynological evidence that this species does not belong to sect. Allium. In our material, several section- or species-specific character combinations (of shape and relative length of pollen grains as well as sulcus lengths and diameter of tectum perforations) occurred, but these results need verification by study of much more material. Underlining this statement, we found disagreeing with data from literature variation pattern of muri shape and perforation density for A. cristophii, A. regelii, A. giganteum, A. xiphopetalum, and A. scabriscapum.

Keywords: Alliaceae, Allium, taxonomy, pollen morphology, Iran.

Introduction

Allium L. is a polymorphous and species-rich (more than 800 species worldwide) genus distributed over the whole northern hemisphere, with a main centre