BOTANICHESKII ZHURNAL, 2022, Vol. 107, N 12, p. 1200–1215

COMMUNICATIONS

POLLEN GRAIN MORPHOLOGY OF SOME *ROSA* SPECIES (ROSACEAE) FROM THE COLLECTION OF SAINT-PETERSBURG BOTANICAL GARDEN

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DOI: 10.31857/S0006813622120043

Pollen morphology of several *Rosa* species from the collection of the Botanical Garden of Peter the Great in St. Petersburg, Russia, was studied using light, confocal laser scanning, scanning and transmission electron microscopy.

The pollen grains of *Rosa* are radially symmetrical, isopolar, 3-colporate, subspheroidal or elliptic, medium-sized (ranging in size from 28.5–33.5 × 25.4–30.0 μm (*R. roxburgii*) to 40.0–47.0 (57.0) μm (*R. dolichocarpa*) with striate and perforate-striate exine. Transmission electron microscopy reveals the exine structure. The exine is subdivided into the ectexine and the endexine. The ectexine consists of a well-developed tectum, 2 rows of columns, and a foot layer. At the interapertural sites, the endexinous lamellae are pressed to each other, and differ in contrast from the foot layer. The intine is fibrillar. The endoapertures (ores) are located in the middle of the colpi. They are circular or elliptic in outline with irregular margins. The application of CLSM and 3D reconstruction of separate grains allows to clarify the features of endoapertures. The H-shaped endoapertures are formed by the ora and the thinning of the exine near the colpi.

Some species showed a remarkable variation in pollen morphology, in particular in number, size of exine perforation, and morpology of the operculum. However, there is also a variable proportion of atypical grains (cycloaperturate, 6-aperturate and syncolpate). The number of atypical pollen grains differs between species as well as between plants of the same species. It can vary from single grains (most of the studied samples) to 92.5% in *R. glauca*.

All the species under study exhibited similar pollen morphology. This resemblance of morphological features makes pollen characters of limited value for the taxonomy of the genus. However, *R. majalis* is distinguishable from the rest of the studied species.

Keywords: Rosa, pollen grain, palynomorphology, introduction, Botanical Garden of Peter the Great

ACKNOWLEDGEMENTS

The work was carried out using the equipment of the Core Facility Centers "Cellular and molecular technologies for plants and fungi" of the Komarov Botanical Institute RAS (St. Petersburg) and "Molecular and cell technologies" of Saint-Petersburg State University in the framework of the institutional research projects of the Komarov Botanical Institute of Russian Academy of Sciences "Collections of living plants of the V.L. Komarov Botanical Institute (history, current state, prospects for use)" (122011900031-0) and "Structural and functional bases of development and adaptation of higher plants, AAA-A18-118031690084-9".

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