

GYNOECIUM AND OVULE STRUCTURE IN *SEDUM KAMTSCHATICUM* AND *SEDUM PALMERI* (CRASSULACEAE)

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The development and structure of gynoecium, ovule, megasporogenesis and the formation of the embryo sac in *Sedum kamtschaticum* and *S. palmeri* (Crassulaceae) was studied for the first time. Polymerous-apocarpous gynoecium consists of 5 carpels. At the base of the ovary, a 5-locular syncarpous fragment is formed, namely synascidiate and a closed symplicate zones. But a great part of the ovary is presented by plicate and aplicate zones (apocarpous features). Deviations in the structure of the gynoecium and the flower as a whole were noted: 4-merous in *S. palmeri* and 6-merous in *S. kamtschaticum*.

The ovule initiation is preceded by periclinal cell divisions in the subepidermal layer of the placenta. The ovule is crassinucellate, bitegmic, funicular and mesochalazal, with hypostase. Archegonium is often one-celled. The tetrad of megaspores is linear, and the embryo sac develops according to Polygonum-type.

The data obtained are consistent with molecular-genetic studies which have shown the studied species belong to different clades of the genus *Sedum*. This is evidenced by differences in the structure of the microsporangium wall layers (epidermis, endothecium, and tapetum) (Anisimova, 2020). Among the traits of the structure of the gynoecium and the ovule, the following differences should be noted: in *S. kamtschaticum*, 6-merous flowers were found along with 5-merous ones, the deposition of tannins occurs in the cells of both the outer and inner epidermis of each carpel, the number of ovules in the rows on the placenta is 3–5, the ovules are hemi-campylotropous, with a 6–7-layered nucellar beak; in *S. palmeri* – along with 5-merous flowers, 4-merous flowers are revealed, the deposition of tannins occurs only in the cells of the outer epidermis of each carpel, the number of ovules in the rows on the placenta is 10–12, the ovules are hypertropous, with a 2–3-layered nucellar beak.

Keywords: gynoecium, ovule, megasporogenesis, embryo sac, Crassulaceae, *Sedum*, *Sedum kamtschaticum*, *S. palmeri*

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