

## **P8: Morphological and functional traits in *Pottia intermedia* aposporic regenerants**

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The capacity for apogamy in diplophase *P. intermedia* is stably inherited at the cellular level, is eliminated during meiospore formation. It was found, however, that the capacity for apogamy may be lost long before meiosis. Apogamy proved to be frequently absent in aposporous regenerants from the tissue of spore sac walls and sometimes in regenerants from tissues non-adjacent to sporogenous tissue. This developmental peculiarity has until now, been analyzed in only two populations of moss plants. The results of the investigation of five additional distinct populations of Lviv region (Ukraine) are presented.

In aposporous regenerants from three populations, the formation of apogamous structures was usually frequent while in regenerants from two others populations, apogamy was rare or not observed. High and low rates of formation of apogamous structures may represent end-points of a continuum. It is characteristic that normal sporophytes of one of the populations gave rise to regenerants which did not produce apogamous structures, while an abnormal sporophyte that arose as a result of development in absence of the morphogenetic influence of the epigonium, gave rise to a regenerant with extremely high apogamous activity. Dependence of apogamous activity on population origin and on a genetically-caused abnormality, indicates that there is underlying genetic control of the epigenetic capacity for apogamy in diplophase *Pottia*.

We have shown that cell proliferation in the leaf plate stops upon the initiation of an apogamous structure at the leaf tip. As in earlier investigations (Ripetsky, 1985), we observed that the loss of the capacity for apogamy in clones from spore sac walls was correlated with an increase of the number of cells per leaf. Among numerous leaf shoots of a non-apogamous regenerant derived from the spore sac wall, an abundantly apogamous shoot was discovered. This regenerated to give rise to a clone that stably maintained the capacity for apogamy and which showed a decrease in leaf cell number.

Regenerants from different parts of the sporophyte (seta, spore sac wall, columella) from one of the moss plants from the population with high apogamous activity, were found to be non-apogamous and the leaves of aposporous regenerants and of regenerants from the gametophyte were approximately the same size. Parthenogenesis, unknown in mosses under natural conditions, is suspected.

Ripetsky, R.T. 1985. Experimental apomixes in mosses and the problem of stability of the determined and differentiated states. *Ontog.*, 16: 229-241.

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