



Pollen ontogenesis in *Oenothera*: a comparison of genotypically normal anthers with the male-sterile mutant *sterilis*

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RESUMEN

A 12-stage “normal table” of anther development in *Oenothera*, is presented. The stages are characterized by developmental steps in the reproductive cells and the tapetum, including waves of amylogenesis and lipogenesis as well as the production of the sporoderm layers. This is compared to a corresponding table for the male-sterile (mst) mutant *sterilis* (ster). Differences between the development of fertile and mst anthers appear after the liberation of the microspores from the tetrads. Male sterility results from a malfunction of the tapetum in the production of ektexine sporopollenin precursors, which aggregate in the tapetal cells. The consequence is the absence of ektexine from the microspores. The endexine is then dissolved, presumably by an enzyme. This process leads to naked microspores whose unprotected cytoplasm is attacked by hydrolytic enzymes present in the thecal fluid. At anthesis the anthers contain only undefined remnants of microspores and tapetum.

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