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Czech J. Genet. Plant Breed.

Chen H.Y., Hu S.W.:

**Cytological
investigation of anther
development in DGMS
line Shaan-GMS in
Brassica napus L.**

Czech J. Genet. Plant Breed., 49 (2013):
16-23

The cytological mechanism of male sterility of Shaan-GMS, a natural mutant dominant genic male sterile (DGMS) line in *Brassica napus* L., is not well studied. Cytological observation was made on different-size buds of DGMS line 0A30A derived from Shaan-GMS line. The pollen mother cells (PMCs) of DGMS line 0A30A were degenerating at the beginning of meiosis and could not pass the anaphase I stage, with no dyads or tetrads formed, suggesting that the DNA damage checkpoint and spindle assembly checkpoint were activated in sterile anthers. During the meiosis process of sterile anthers in the sterile plants,

several kinds of abnormal meiotic cells could be observed: nuclei condensed PMCs, cells with micronuclei, collapsed cells, plasmolysis cells, cells connected with nucleoplasmic bridge, and microspore analogue developed from PMCs without meiosis but enclosed by the exine wall. The results suggested Shaan-GMS to be a new type of DGMS line in *B. napus*.

Keywords:

anther abortion; *Brassica napus* L.; cytological observation; DGMS

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