Abnormal Structure of Embryo Sac in Autotetraploid Rice [PDF]

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摘 要：The structures of mature embryo sacs in 13 genetic stock lines of autotetraploid rice (Oryza sativa L.), including indica, japonica and javanica, were studied by using the whole-mount stain-clearing laser scanning confocal microscopy (WCLSM). Among the 13 autotetraploid rice, the majority of ovaries possess normal polygonum-type embryo sacs, while a few ovaries were characterized by abnormal embryo sacs. The abnormalities of embryo sacs could be classified into six categories, i. e. no female germ unit, abnormal polar nuclei, embryo sac degeneration, no egg apparatus, small embryo sac and ‘double set’ of embryo sacs. The frequency of abnormal embryo sac in japonica (26.6%) was higher than that in indica (19.34%). In addition, the major abnormalities in each autotetraploid line varied, suggesting that the abnormalities may be related to the genotypes of the varieties.

关键词：autotetraploid rice; structure; anatomy; embryo sac; seed setting rate
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