

专论与综述

## 植物同源四倍体生殖特性及DNA遗传结构的变异

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摘要

由于染色体加倍过程中的加倍因素和非加倍因素的影响, 同源四倍体的DNA遗传结构较其起源二倍体产生了变异, 进而导致其表现型发生相应的变异。和其起源二倍体相比, 同源四倍体的表现型变异表现在以下几个方面: 雌雄配子育性降低; 花粉(2n)的体积明显增大; 部分胚囊内卵细胞、助细胞及反足细胞数目有所增减; 自交繁殖过程中, 花粉的萌发及生长速度较慢、花粉管的形态部分畸形、部分极核受精过程及受精细胞(与精核结合的极核或卵)的进一步发育状况异常; 大多数育性或结实率会有不同程度的降低, 但降低的程度有因自交繁殖世代的推移而逐渐减小的趋势; 就一些植物种类而言, 同源四倍体有较好的远缘杂交亲和性。

关键词 [同源四倍体](#) [生殖](#) [同工酶](#) [分子标记](#)

分类号 [Q943](#)

## Variation of Both DNA Genetic Structure and Reproduction Traits of Plant Autotetraploid

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### Abstract

<P>Due to the effect of chromosome doubling, the DNA genetic structures of autotetraploid vary from its original diploid, and thus autotetraploid phenotype changes correspondingly. Compared with original diploid, the phenotype changes of autotetraploid were as follows. The part of its male and female gametes was of abortion. Its pollen (diplo-haplont) was significantly bigger. The number of egg cells or synergids or antipodal cells in its embryo sacs increases or reduces. While self-crossing procreation of it, pollen tubes and the fertilization processes of polar nucleus and the fertilized cells development were partly abnormal. Its reproductive capacity (or seed setting rate) dropped to some extents, which can be gradually improved with generations. For some plant species, it has a better cross-compatibility in distant hybridizations.</P>

Key words [autotetraploid](#) [procreation](#) [isozymes](#) [molecular marker](#)

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