

综合评述

## 植物多倍体研究的回顾与展望

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**摘要** 多倍化是促进植物进化的重要力量. 多倍体主要是通过未减数配子融合, 体细胞染色体加倍以及多精受精三种方式起源的. 其中, 不减数配子是多倍体形成的主要机制. 三倍体可能在四倍体的进化中起了重要作用. 过去认为多倍体只能是进化的死胡同, 现在发现很多多倍体类群都是多元起源的而不是单元起源的. 当多倍体形成后, 基因组中的重复基因大部分保持原有的功能, 也有相当比例的基因发生基因沉默. 多倍体通常表现出不存在于二倍体祖先的表型, 并且超出了其祖先的分布范围, 因为在多倍体中发生了很多基因表达的变化. 主要从多倍体的起源、影响多倍体发生的因素及多倍体基因组的进化等方面回顾并展望多倍体的研究.

**关键词** [多倍体](#) [多倍化](#) [进化](#)

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## The Review and Prospect of Plant Polyploid Research

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**Abstract** Polyploidy is an important force of plant evolution. The major cytological mechanisms of polyploid formation are union of unreduced gametes, somatic doubling and polyspermy. And union of unreduced gametes is the most important mechanism. Triploids may play an important role in tetraploids formation. Earlier perception is that polyploids are the evolutionary dead-ends. But an important recent discovery is that most taxonomically recognized polyploid species are of multiple origin, instead of mono-origin. In genomes, most duplicate genes retain original functions, but there are many duplicate genes become silence. Polyploids often show novel phenotypes that are not present in their diploid progenitors or exceed the range of the contributing species, this is because that polyploidy causes changes of gene expression. This article will review and prospect the polyploid research from these aspects: the origin of polyploid, the factors that affect polyploid occur, and the genomes changes of polyploid.

**Key words** [Polyploid](#); [Polyploidy](#); [Evolution](#)

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