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**Polyploid rice: new resources for future rice breeding**

**Popular Article**

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**Introduction**

Asian cultivated rice (*Oryza sativa* L.) is a diploid species with two sets of 12 chromosomes (2n= 24). Despite the fact that Asian cultivated rice may have experienced whole genome duplication more than 96 million years ago, this species is regarded as diploid, as it did not experience a recent polyploidization. A polyploid individual is an individual with more than two sets of chromosomes in somatic cells. Polyploidization is one of the important ways of plant evolution. Polyploid plants are characterized by large size, high nutrient and secondary metabolite content. They also show strong vitality and adaptability, drought and cold resistance and other advantages. Therefore, polyploid technology has been widely used in plant breeding, especially for the purpose of increasing the mass of vegetative organs or total biomass. In addition, polyploids can be used to breed varieties directly and can also serve as a bridge to overcome the barriers to distant hybridization and transfer foreign genes, thereby promoting gene exchange between species or populations. At present, the most widely cultivated rice is diploid. Compared with polyploid crops (such as wheat), rice has a smaller genome and lower DNA content. The genetic resources of cultivated diploid rice are limited. Therefore, further development of rice breeding is hindered. Polyploid rice was first discovered and

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