

研究论文

## 球茎大麦在大麦育种上的应用研究

李浩兵, 张德玉, 仲裕泉, 黄友圣, 许如根, 吕超, 黄志仁

江苏省农业科学院遗传生理研究所, 江苏南京, 210014

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**摘要** 本文介绍栽培大麦(2x)与球茎大麦(4x)种间杂种的产生及其细胞学鉴定结果。二者杂交成胚率平均可达48.43%,胚育成苗率平均可达25.64%。杂种F1染色体数为21, 通过C-带鉴定表明, 7条为母本栽培大麦染色体、14条为父本球茎大麦染色体。F1花粉母细胞中染色体构型:单价体4-7个、三价体1-3个, 其余为二价体。杂种植株形态为父本球茎大麦型, 冬性强、发育慢、分蘖多。以杂种F1胚培苗花粉能育单株为父本, 以苏啤1号为母本进行回交, 得到7个回交一代株系BC1-1-BC1-7, 将BC1F2种子播种在大麦黄花叶病圃中进行抗病鉴定, 结果BC1-2F2的2个株系和BC1-5F2的2个株系高抗黄花叶病。对BC1-2F3的同功酶分析和C-带鉴定, 表明抗病株系中确有来自球茎大麦的遗传物质, 对抗病株系的抗性基因的遗传规律的研究表明, 抗性由一对显性基因控制, 并与栽培大麦中已知的抗性基因不等位, 可能为一种新的基因。

**关键词** [栽培大麦](#) [球茎大麦](#) [种间杂种](#) [种质](#)

分类号

## Use of *Hordeum bulbosum* in Barley Breeding

Li Haobing, Zhang Deyu, Zhong Yuquan, Huang Yousheng, Xu Rugeng, Lu Chao, Huang Zhiren

Institute of Agrobiological Genetics and Physiology, Jiangsu Academy of Agricultural Sciences, Nanjing 210014

**Abstract** The interspecific hybrid between *Hordeum vulgare* (2x) and *H. bulbosum* (4x) and its cytological analysis was reported in this paper. On average, 48.43% of the pollinated spikelets formed embryos, and 28.6% of immature embryos generated into seedlings in vitro. The root tip chromosome number of hybrid F1 was 21, C-banding showed that 7 chromosomes of F1 came from *H. vulgare* and 14 from *H. bulbosum*. In the pollen mother cell of F1, there were univalents 4-7, trivalents 1-3, the other were bivalents. The morphological character of hybrid plant is similar to that of paternal parent *H. bulbosum*. The resulting triploids were back crossed to the diploid barley "Supie No. 1", and seven BC1 plants were obtained. In disease nursery field, two lines of BC1-2F2 and two lines of BC1-5F2 showed high resistance to BaYMV. The analysis of specific isozyme marker and C-banding pattern for BC1-2F3 plants showed that the BaYMV resistant lines had genetic material from *H. bulbosum*; and the resistance was controlled by a pair of dominant gene which differs from the known resistant gene in barley cultivar.

**Key words** [H.vulgare](#) [H. bulbosum](#) [Interspecific hybrid](#) [Germplasm](#)

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通讯作者 李浩兵

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