

研究论文

谷子(*Setaria italica*)Ch4n×法氏狗尾草(*S.faberii*)杂种幼胚培养及杂种F₁的鉴定

罗新谈, 郭扶兴, 周俊彦, 马惠, 吴权明, 朱光琴, 马云彤

中国科学院西北植物研究所 陕西杨陵 陕西省农业科学院粮食作物研究所

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摘要 1989年,进行了谷子(*Setaria italica*)Ch4n×法氏狗尾草(*S.faberii*)的远缘杂交和杂种胚培养。共接种已授粉子房264个,得到22株苗,仅11株成活。试管苗经继代培养和繁殖,得到了大量的小植株,移栽成活并发育到成熟。经形态学和细胞学鉴定,其中有两个株系是杂种,杂种F₁的染色体数为2n=4x=36,花粉母细胞在减数分裂中期 I 染色体配对不正常,染色体构型为(18-2) I +(13-0) II +(0-9) III +(0-3) IV,后期染色体分离不正常,形成不正常的四分体和微型小孢子,花粉败育。F₁高度不育,其形态特征介于双亲之间,植株在许多性状上都与父本法氏狗尾草相似,而与母本相差较远。

关键词 [谷子Ch4n](#), [法氏狗尾草](#), [杂种胚培养](#), [杂种](#)

分类号

Immature Embryo Culture of a Cross between *Setaria italica*(Ch4n) and *S.faberii* and Studies on the Morphological and Cytological Characteristics of the F₁ Plant

Luo Xin-tan, Guo fu-xing, Zhou Jun-yan, Ma Hui, Wu Qun-ming, Zhu Guang-qin, Ma Yun-tong

Northwest Institute of Botany, Academia Sinica, Yangling Shanxi, 712100

Abstract Immature embryo culture of a wide cross, *Setaria italica* (Ch 4n)/*S. faberii*, was carried out in 1989. 22 seedlings were obtained from 264 pollinated ovaries cultured on modified MS medium with or without growth regulators, but only 11 survived after the second subculture. They were propagated into numerous plantlets and then transplanted to soil. Most of them grew up to flowering. Results of cytological examination of the pollen mother cells at meiosis and observation of the morphological characters of the adult revealed that only 2 lines were hybrids whose chromosome numbers were 2n=4x=36, and whose chromosome pairing at the metaphase I of meiosis were irregular. The chromosome configuration was (2--18) I +(0--13) II =(0--9) III +(0--3) IV and the chromosome disjunction at the anaphase I of meiosis were also irregular. Abnormal tetrads and mini-spores were formed and the pollens were abortive. The hybrid F₁ plant was sterile and its morphological characters were somewhat intermediate between those of the parents, although nearer to the male parent.

Key words [Setaria italica](#) [S.faberii](#) [Immature embryo culture](#) [Hybrid](#)

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通讯作者 罗新谈

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