

研究论文

# 陆地棉不同色素腺体基因对比克氏棉子叶色素腺体延缓形成性状的遗传效应

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**摘要** 用(亚洲棉×比克氏棉)F<sub>1</sub>双二倍体作母本与陆地棉的不同色素腺体基因型进行杂交, 获得5个具有不同色素腺体基因的 [(亚洲棉×比克氏棉)F<sub>1</sub>双二倍体×陆地棉] F<sub>1</sub>种间三元杂种。不同色素腺体基因对种间三元杂种植株和花器形态性状无明显效应, 但对其色素腺体表现和棉酚含量具有较大的影响。用陆地棉单节显性系1(G12G12g13g13)配制的种间三元杂种完全表现有比克氏棉的子叶色素腺体延缓形成特性; 而用双隐性或显性无色素腺体陆地棉配制的种间三元杂种, 虽其种子无色素腺体, 但植株为少色素腺体类型。用有色素腺体陆地棉和陆地棉单节显性系2(g12g12G13G13)配制的种间三元杂种, 其种子和植株均为有色素腺体类型。因此, 用G12G12g13g13作为陆地棉亲本与比克氏棉及其后代进行杂交和回交, 可以提高该性状的选择效果。

**关键词** [比克氏棉](#) [陆地棉](#) [色素腺体](#) [棉酚](#)

分类号

## The Genetic Effects of the Pigment Gland Genes of Upland Cotton (*Gossypium. hirsutum* L.) on the Glandless Seeds-Glanded Plant Trait from *G. bickii*

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**Abstract** Five different types of tri-specific hybrids were obtained by crossing the allotetraploid of (*G. arboreum* × *G. bickii*) F<sub>1</sub> with different pigment gland genotypes of *G. hirsutum*. There were no significant differences among the different tri-specific hybrids on the morphological characters, except for the gland expression and gossypol contents. The tri-specific hybrid derived from a pigment gland genotype of G12G12g13g13 has the glandless seeds and glanded plant trait of *G. bickii* completely, and those produced by crossing with recessive or dominant glandless cotton of *G. hirsutum* were glandless seeds as well, but the density and size of the glands on the plant were reduced heavily. The tri-specific hybrids derived from the typical glanded cotton (G12G12G13G13或g12g12G13G13) of *G. hirsutum* were glanded seeds and plant, although the density and size of the glands on the seeds were reduced significantly, comparing with their cultivated parents. A crossing or backcrossing program is proposed to obtain a germplasm with glandless seed alone, in which the upland cotton germplasm with G12G12g13g13 was used as cultivated parent in interspecific hybridization.

**Key words** [G.bickii](#) [G.hirsutum](#) [Pigment gland](#) [Gossypol](#)

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