

研究论文

海岛棉不同果枝品种间杂交纤维品质性状的遗传及F1和F2群体优势分析

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摘要 以MINQUE(1)统计方法, 利用AD模型对9个海岛棉品种(系)及其20个F1组合5个纤维品质性状的3年资料进行遗传分析。结果表明, 海岛棉F1代纤维品质性状多以加性效应为主; 2.5%跨长、整齐度和比强度还存在极显著的显性效应; 5个品质性状的显性效应与环境的互作以及比强度、伸长率和麦克隆值的加性效应与环境的互作均达显著或极显著水平; 2.5%跨长的普通狭义遗传率达45%以上。A杂交铃和新海8号是海岛棉品质性状较好的亲本。用AD模型对海岛棉F1和F2品质性状的杂种优势分析表明, 海岛棉品种间杂交的F1和F2品质性状的遗传一般表现为负向超高亲优势。

关键词 [海岛棉](#) [品质性状](#) [遗传分析](#) [群体优势](#)

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Genetic Analysis of Fiber Traits and Population Heterosis for F1 and F2 between Different Fruit-Branch Type Cultivars in Island Cotton

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Abstract Five fiber traits of 9 parents and their 20 F1 crosses of Island Cotton for three years were analyzed for their additive and dominance effects by MINQUE(1) approaches. The results indicated that F1 fiber traits were mainly controlled by the additive effects in Island Cotton; 2.5% span-length, uniformity and fiber strength were showed highly significant dominant effects; the dominant effects interactions by years were significant for five fiber traits, so were additive effects interaction by years of fiber strength, elongation and micronaire value. Broad and narrow sense heritability estimates were significant at 0.01 level for 5 fiber traits. The ordinary narrow sense heritability estimate of 2.5% span-length was above 45%. A Zajiya oling and Xinhai 8 were better parents for fiber quality breeding in Island Cotton. The heterosis of fiber traits were analyzed by the genetic model of additive-dominance by MINQUE(1) approaches for predicting the genotypic value and heterosis for F1 and F2. General speaking, the fiber traits were significantly negative for the better-parental heterosis of crosses among cultivars in Island Cotton.

Key words [Island cotton](#) [F1 fiber traits](#) [Genetic analysis](#); [Population heterosis](#)

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