



## 供钾水平对棉花产量构成及其与产量相关性的影响

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### Effect of Potassium Fertilizer on Yield Components and Correlations between Yield Components and Yield in Cotton (*Gossypium hirsutum*)

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**摘要** 采用34个棉花材料, 于2007—2008年在田间条件下研究供钾水平对棉花产量及其构成因素和二者之间相关关系的影响。结果表明, 施钾可显著提高棉花产量, 在气候条件不利的2008年表现更为明显; 铃数受供钾水平的影响最大, 其次为铃重, 衣分受影响最小。偏相关分析和通径分析结果表明, 缺钾条件下衣分与产量的关系相对密切, 而供钾水平对铃重和铃数与产量相关关系的影响随年份而变化。各产量构成因素对产量的间接通径系数受年份和供钾水平的影响, 表明衣分、铃重和铃数之间存在比较复杂的相互制约或促进关系。

**关键词:** 钾 棉花 产量 产量构成因素 相关分析

**Abstract:** Field experiments were conducted to investigate the effect of potassium(K) fertilizer on cotton yield components and correlations between yield components and yield in 2007—2008 in Beijing at the Shangzhuang Experiment Station(40° 08'N, 116° 10'E) of China Agricultural University, with 34 cotton conventional cultivars/hybrids as materials. The results indicated that K fertilizer increased lint yield significantly, especially in 2008, characterized by lower temperature during seedling and square periods and excessive precipitation during almost whole growing season. Among yield components, the boll numbers per plant was affected most by K fertilizer, then the boll weight, and the lint percent was influenced least. Partial correlation analysis and path analysis showed that the correlation between yield and lint percent under low K levels was closer than that under high K levels. However, the effect of K level on the correlations of yield with boll number and boll weight changed with years, indicating that efficient selection in breeding probably requires appropriate environment. Furthermore, path coefficient analysis indicated that indirect effects of yield components upon yield changed with years and K levels, suggesting complex mutual relationships among lint percentage, boll weight and boll numbers.

**Keywords:** potassium cotton yield yield components correlation analysis

Received 2011-04-29;

Fund:

国家自然科学基金 (30100111, 30971078)

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引用本文:

王汉霞, 华含白, 李召虎, 段留生, 田晓莉. 供钾水平对棉花产量构成及其与产量相关性的影响[J] 棉花学报, 2011, V23(6): 581-586

WANG Han-Xia, HUA Han-Bai, LI Zhao-Hu, DUAN Liu-Sheng, TIAN Xiao-Li. Effect of Potassium Fertilizer on Yield Components and Correlations between Yield Components and Yield in Cotton (*Gossypium hirsutum*)[J] Cotton Science, 2011, V23(6): 581-586

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