



## 土壤供钾不足对棉花光合及物质积累的影响

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### Effects of Potassium Shortage in Soil on Photosynthesis Characteristics and Materials Accumulation of Cotton

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摘要 以抗虫棉33B为试验材料, 通过去除地表20 cm耕层营造土壤缺K的方法, 探讨了钾营养胁迫对棉花植株光合性能及物质积累的影响。钾营养胁迫对棉花植株叶面积指数、主茎功能叶片有效光合速率、棉花中后期生育进程中主茎叶片叶绿素积累以及棉株干物质积累均有明显的抑制作用, 其中随着生育进程的推进, 钾胁迫对于叶面积指数和棉株干物质积累的抑制作用趋于明显。以最大拟合优度为标准, 利用EXCEL对观测点数据进行拟合得到的趋势线方程显示, 钾胁迫没有改变叶面积指数、主茎功能叶光合速率和棉株干物质积累的动态规律, 但是却一定程度上改变了主茎功能叶片叶绿素积累的动态规律。

关键词: 钾胁迫 棉花 光合特性 物质积累

Abstract: This research is conducted by the methods of wiping off 20 cm soil of tilth. It explored the effects of potassium nutrition stress on photosynthesis characteristics and materials accumulation of Bt cotton 33B. The results are as following: potassium stress can significantly inhibit leaf area index(LAI), the effective Pn of the functional leaves of main stem, the accumulation of chlorophyll in the funtional leaves during the mid- and late-stage, and the dry materials of whole plant. With the development of cotton, the inhibition of potassium stress becomes more obvious. With the greatest fitting goodness as the standard, the trend equitions from fitting the curve to data points by EXCEL indicate that potassium stress hardly changes the dynamics of leaf area index(LAI), the effective Pn of the functional leaves of main stem and the dry materials of whole plant, however, to some extent, change the dynamics of the accumulation of chlorophyll in the funtional leaves.

Keywords: potassium stress cotton photosynthesis characteristics materials accumulation

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