

论文

中黄35超高产群体的生理参数

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摘要:

为探索新疆绿洲农田生态条件下大豆超高产($\geq 5\ 625\ \text{kg}\ \text{hm}^{-2}$)栽培的产量形成机理, 在2006和2007年超高产栽培试验中测定了中黄35的群体生理指标和生态参数, 分析了品种群体结构。结果表明, 中黄35和新大豆1号(对照)的最大叶面积指数(LAI_{max})分别为4.31和3.64, LAI>3的天数分别持续50 d和36 d; 全生育期的总光合势(LAD)分别为2 766 375 m² d和2 385 645 m² d; 中黄35生育前期(出苗后第16~58天群体的光合生产率为3.3~5.2 g m⁻² d⁻¹, 而后期(出苗后第72~114天)则为2.52~5.0 g m⁻² d⁻¹, 对照分别为3.8~6.0和0.6~3.5 g m⁻² d⁻¹; 中黄35的生物产量、籽粒产量和经济系数为13 943.2 kg hm⁻²、5 521.5 kg hm⁻²和39.6%, 对照则为13 108.1 kg hm⁻²、4 666.5 kg hm⁻²和35.63%。和对照相比, 中黄35最大叶面积指数持续时间长, 全生育期的总光合势高, 后期群体的光合生产率高, 经济系数高是达到超高产目标的基础。中黄35在新疆绿洲农田栽培, 具有良好的适应性。

关键词: 中黄35 超高产 生理参数

Physiological Parameters of Super-High Yielding Soybean Cultivar Zhonghuang 35

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Abstract:

The objective of this study was to explore the mechanism of high yield via analyzing related parameters. Soybean cultivars, Zhonghuang 35 and Xindadou 1 (CK) were grown in a randomized block design with three replications in 2006 and 2007. The physiological and ecological parameters associated with yield were determined. The results showed that for Zhonghuang 35 and Xindadou 1, the highest leaf area index reached 4.31 and 3.64, respectively, the green duration of leaf weight (LAI > 3) was 50 d and 36 d, total leaf area duration (LAD) at growing season was 2 766 375 and 2 385 645 m² d hm⁻², and the harvest index (ratio of seed weight to total plant dry weight) was 37.9% and 33.7%, respectively. Compared with Xindadou 1, the duration of maximum LAI of Zhonghuang 35 was long, the total LAD at growing season and the photosynthetic rate at the late stage were high. The theoretical yields of the two cultivars were 5 521.5 kg ha⁻¹ and 4 666.5 kg ha⁻¹. Zhonghuang 35 showed good adaptability to the farmland ecology of the Xinjiang oasis, and gave a seed yield of 5 577 kg ha⁻¹.

Keywords: Zhonghuang35 Super high-yield Physiological parameter

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