



### 氮素水平对杂交棉氮素吸收、生物量积累及产量的影响

刘 涛<sup>1</sup>, 魏亦农<sup>1, 2\*</sup>, 雷 雨<sup>3</sup>, 李俊华<sup>2</sup>, 雷 军<sup>1</sup>, 孙卫恒<sup>2</sup>

1. 石河子大学 / 新疆生产建设兵团绿洲生态农业重点实验室, 新疆 石河子 832000; 2. 石河子大学农学院, 新疆 石河子 832000; 3. 新疆天合种业有限责任公司, 新疆 乌鲁木齐 830026

### Effect of Nitrogen Applied Levels on Nitrogen Uptake, Biomass Accumulation and Yield in Hybrid Cotton Plant

LIU Tao<sup>1</sup>, WEI Yi-nong<sup>1, 2\*</sup>, LEI Yu<sup>3</sup>, LI Jun-hua<sup>2</sup>, LEI Jun<sup>1</sup>, SUN Wei-heng<sup>2</sup>

1. Key Laboratory of Oasis Ecological Agriculture, Xinjiang Production and Construction Corps, Shihezi University, Shihezi, Xinjiang 832000, China; 2. College of Agronomy, Shihezi University, Shihezi, Xinjiang 832000, China; 3. Xinjiang Tianhe Seed Incorporated Development CO., Ltd, Urumqi, Xinjiang 830026, China

摘要

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**摘要** 在滴灌条件下, 采用单因素随机区组设计, 研究了不同氮素水平(0、135、270、405、540 kg·hm<sup>-2</sup>)对杂交棉生物量、氮素吸收及产量的影响。结果表明: 杂交棉生物量、吸氮量和产量随氮素水平的增加而增加, 至施氮量为405 kg·hm<sup>-2</sup>时达最高值, 分别较不施氮水平提高了49.93%, 75.43%和82.24%; 氮素水平对杂交棉蕾、花、铃生物量积累和氮素吸收的影响大于茎和叶; 氮素的增加还显著提高了杂交棉的生物量积累速率、氮素吸收速率以及单株铃数和铃重。本试验中270 kg·hm<sup>-2</sup>的施氮量可初步满足杂交棉获得高产的需要, 施氮量过大不利于产量的提高。本研究条件下杂交棉获得最高产量的氮肥适宜用量为386.5~388.4 kg·hm<sup>-2</sup>。

**关键词:** 氮素水平 杂交棉 生物量 氮素吸收 产量

**Abstract:** A field experiment was carried out to study the effect of nitrogen applied levels on biomass accumulation, nitrogen uptake and yield in hybrid cotton plant under drip irrigation condition with one factor randomized block and five levels of nitrogen application (0, 135, 270, 405, 540 kg·hm<sup>-2</sup>). The result showed that the biomass, nitrogen content and yield of hybrid cotton were increased with nitrogen application increasing, they reached their highest value at 405 kg·hm<sup>-2</sup> nitrogen applied level, and were increased by 49.93%, 75.43% and 82.24%. The effect of nitrogen application on biomass accumulation and nitrogen uptake in buds, flowers and bolls was more than it in stems and leaves. The biomass accumulation and nitrogen uptake speed, boll number and weight were increased significantly through increasing nitrogen application. Hybrid cotton could obtain high yield at 270 kg·hm<sup>-2</sup> nitrogen applied level in this experiment. But, if nitrogen application was too much, yield would not be increased any more. In this study, the suitable nitrogen application rate which hybrid cotton reached the highest yield was at 386.5~388.4 kg·hm<sup>-2</sup>.

**Keywords:** nitrogen applied levels hybrid cotton biomass nitrogen uptake yield

收稿日期: 2010-04-02;

基金资助:

石河子大学高层次人才科研启动资金专项 (RCZX200727)

作者简介: 刘 涛 (1978-), 女, 硕士, liutao20029@sina.com;

引用本文:

刘 涛, 魏亦农, 雷 雨, 李俊华, 雷 军, 孙卫恒. 氮素水平对杂交棉氮素吸收、生物量积累及产量的影响[J]. 棉花学报, 2010, 22(6): 574-579.

LIU Tao, WEI Yi-Nong, LEI Yu, LI Jun-Hua, LEI Jun, SUN Wei-Heng-. Effect of Nitrogen Applied Levels on Nitrogen Uptake, Biomass Accumulation and Yield in Hybrid Cotton Plant[J]. Cotton Science, 2010, 22(6): 574-579.

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http://journal.cricaas.com.cn:8082/mhxb/CN/1002-7807 (2010) 06-0574-06 或 http://journal.cricaas.com.cn:8082/mhxb/CN/Y2010/V22/I6/574

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