

## 太湖地区单季晚稻产量-氮肥施用量反应曲线的历史比较

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## Historical comparison on the response curves of rice yield-nitrogen application rate in Tai Lake Region

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**摘要** 本文对1982~1985年和2004~2006年在太湖地区进行的两次水稻产量-化肥氮施用量的田间试验网中获得的大量结果进行了对比分析。结果表明,与80年代初相比,当前的水稻产量-施氮量的反应曲线明显上移,在氮肥用量相同的情况下,化肥氮的表观利用率和增产效果明显增高,这可能与水稻栽培品种的产量潜力和吸收效率的提高,以及氮肥施用技术的改进有关。因此,在高产、高施氮量地区,培育产量潜力更高、吸收能力更强和对氮肥反应更大的品种,并结合栽培技术(包括氮肥施用技术)的改进,是进一步增加施氮量以提高产量、协调高产与环保的重要基础。

**关键词:** 水稻 氮肥 氮肥利用率 增产效果 历史比较

**Abstract:** The rice yield-nitrogen (N) application rate response curve obtained from the network of field experiments conducted in 2004-2006 is compared with that conducted in 1982-1985. Results show that in comparison with the response curve obtained in 1982-1985, the response curve obtained in 2004-2006 is at a markedly higher position at the Y-axis, the agronomic efficiency and the apparent plant recovery of fertilizer N are improved considerably. Presumably, these are primarily, in addition to the improvement in the application technique, resulted from the current use of rice cultivars with high yield potential and high uptake efficiency. The findings reveal that the breeding of new varieties with even higher yield potential and higher N uptake efficiency and higher response to N, combined with the improvement in cultivation technique (including N fertilizer application technique) are the basic approaches for the sustainable development of rice production in the region.

**Keywords:** rice; nitrogen fertilizer; plant recovery of fertilizer N; yield efficiency; historical comparison

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