

## 生育类型与施氮水平对粳稻淀粉RVA谱特性的影响

李敏<sup>1,2</sup>, 张洪程<sup>1,\*</sup>, 李国业<sup>1</sup>, 马群<sup>1</sup>, 杨雄<sup>1</sup>, 魏海燕<sup>1\*</sup>

1扬州大学江苏省作物遗传生理重点实验室, 江苏扬州225009; 2贵州省水稻研究所, 贵州贵阳550006

## Effects of Growth-Period Type and Nitrogen Application Level on the RVA Profile Characteristics for *Japonica* Rice Genotypes

LI Min<sup>1,2</sup>, ZHANG Hong-Cheng<sup>1,\*</sup>, LI Guo-Ye<sup>1</sup>, MA Qun<sup>1</sup>, YANG Xiong<sup>1</sup>, WEI Hai-Yan<sup>1\*</sup>

1 Key Laboratory of Crop Genetics and Physiology of Jiangsu Province, Yangzhou University, Yangzhou 225009, China; 2 Rice Research Institute of Guizhou Province, Guiyang 550006, China

摘要

参考文献

相关文章

Download: PDF (316KB) HTML 1KB Export: BibTeX or EndNote (RIS) Supporting Info

**摘要** 以长江中下游地区3种生育类型中有代表性的46个常规粳稻品种为试材, 采用大田条件下的裂区试验, 研究了4种施氮水平下稻米RVA谱特征值的差异及其与蒸煮食味品质的关系。结果表明: (1)随着氮肥水平升高, 峰值黏度、崩解值逐渐下降, 消减值、糊化温度逐渐升高, 而热浆黏度、最终黏度和回复值变化无明显规律。(2)随着生育期的延长, 峰值黏度、崩解值逐渐下降, 回复值、消减值和糊化温度逐渐升高, 热浆黏度和最终黏度均先升后降。(3)随着生育期的延长, 氮肥水平对稻米RVA谱特性的影响分别由优化调控至调控钝感到调控失效。(4)相关分析表明, 胶稠度和食味值与峰值黏度、热浆黏度相关性均不显著, 而与最终黏度、崩解值、回复值、消减值、糊化温度相关性达显著或极显著水平, 利用食味值与崩解值、最终黏度、糊化温度所建立的回归方程能较好地预测稻米食味值, 使RVA对稻米食味的评价定量化。

**关键词:** 粳稻 生育期 氮肥水平 RVA

**Abstract:** A field experiment was conducted using 46 *japonica* rice varieties belonging to three growth-period types in the middle and lower reaches of the Yangtze River. The results were as follows: (1) Generally, with increasing nitrogen application rate, the peak viscosity and the breakdown value decreased, the setback value and the pasting temperature increased accordingly, while the hot viscosity, the final viscosity and the consistency value showed no apparent changes. (2) The peak viscosity and the breakdown value decreased sharply with delaying growth duration among different growth-types of rice cultivars, the setback value, the consistency value and the pasting temperature increased, while the hot viscosity and the final viscosity increased at first and then decreased. (3) As the growth-period prolonged, the influence of nitrogen application rate on the RVA profile changed from the positive to the insensitive and at last to the entirely invalid. (4) Correlation analysis proved that, final viscosity, breakdown, consistency, setback value and pasting temperature were significantly or very significantly correlated with gel viscosity and taste value. Using the regression equation containing breakdown, final viscosity, pasting temperature and taste value, the taste quality could be predicted quantitatively from RVA values.

**Keywords:** *Japonica* rice Growth-period Nitrogen application rate RVA

Received 2011-05-17; published 2011-12-01

Fund:

本研究由国家自然科学基金项目(30971732和30370827)资助。

Corresponding Authors: 张洪程, E-mail: hc Zhang@yzu.edu.cn, Tel: 0514-87979220

引用本文:

李敏, 张洪程, 李国业, 马群, 杨雄, 魏海燕. 生育类型与施氮水平对粳稻淀粉RVA谱特性的影响[J] 作物学报, 2012, V38(02): 293-300

LI Min, ZHANG Hong-Cheng, LI Guo-Ye, MA Qun, YANG Xiong, WEI Hai-Yan. Effects of Growth-Period Type and Nitrogen Application Level on the RVA Profile Characteristics for *Japonica* Rice Genotypes[J] Acta Agron Sin, 2012, V38(02): 293-300

链接本文:

<http://211.155.251.148:8080/zwx/CN/10.3724/SP.J.1006.2012.00293> 或 <http://211.155.251.148:8080/zwx/CN/Y2012/V38/I02/293>

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 李敏
- ▶ 张洪程
- ▶ 李国业
- ▶ 马群
- ▶ 杨雄
- ▶ 魏海燕