

- [24] Szczerba Mark W, Britto Devt T, Kronzucker Herbert J. K<sup>+</sup> transport in plants: Physiology and molecular biology [J]. *J Plant Physiol*, 2009, 166(5): 447-466.
- [25] Spalding E P, Hirsch R E, Lewis D, et al. Potassium uptake supporting plant growth in the absence of AKT1 channel activity-Inhibition by ammonium and stimulation by sodium [J]. *J Gen Physiol*, 1999, 113(6): 909-918.
- [26] Very AA, Sentenac H. Molecular mechanisms and regulation of K<sup>+</sup> transport in higher plants [J]. *Annu Rev Plant Biol*, 2003, 54: 575-603.
- [27] 封克,孙小茗,汪晓丽.铵对不同作物根系钾高亲和转运系统的影响[J].植物营养与肥料学报,2007,13(5):877-881.
- [28] Davenport R J, Tester M. A weakly voltage-dependent, nonselective cation channel mediates toxic sodium influx in wheat [J]. *Plant Physiol*, 2000, 122(3): 823-834.
- [29] Chaillou S, Vessey J K, Morot-Gaudry J F, et al. Expression of characteristics of ammonium nutrition as affected by pH of the root medium [J]. *J Exp Bot*, 1991, 42(235): 189-196.
- [30] Bleivins D G, Bamett N M, Frost WB. Role of potassium and malate in nitrate uptake and translocation by wheat seedlings [J]. *Plant Physiol*, 1978, 62(5): 784-788.
- [31] Macleod L B. Effects of N, P and K and their interactions on the yield and kernel weight of barley in hydroponic culture [J]. *Agron J*, 1969, 61(1): 26-29.
- [32] Hu H, Wang G H. Nature of nitrogen and phosphorus uptake by a hybrid rice under the potassium fertilizer treatment [J]. *J Soil Sci*, 2003, 34(3): 202-204.
- [33] Ninnemann O, Jauniaux J C, Frommer W B. Identification of a high affinity NH<sub>4</sub><sup>+</sup> transporter from plants [J]. *EMBO J*, 1994, 13 (15): 3464-3471.
- [34] Feng K. Dynamics of interlayer NH<sub>4</sub><sup>+</sup> in flooded Chinese rice soils [M]. Germany: Shaker Publish, 1996.
- [35] Loue A. The interaction of potassium with other growth factors, particularly with other nutrients [A]//Proceedings of the 11th congress of the International Potash Institute, 1978: 407-433.
- [36] Guo X S, Zhu H B, Wang W J, et al. Effect of different rates of nitrogen potassium on yield and quality of cabbage [J]. *J Anhui Agric*, 2004, 31(1): 62-66.

## Study on Interactions between N and K Absorption in Rice

YAN Jinxiang<sup>1</sup>, LI Fuming<sup>2</sup>, XU Chunmei<sup>1</sup>, CHEN Song<sup>1</sup>, CHU Guang<sup>1</sup>, ZHANG Xiufu<sup>1</sup>, WANG Danying<sup>1\*</sup>

(<sup>1</sup> State Key Laboratory of Rice Biology/ China National Rice Research Institute, Hangzhou 310006, China; <sup>2</sup> Yangtze University, Jingzhou, Hubei 434025, China; 1st author: yanjinxiang@163.com; \*Corresponding author: wangdanying@caas.cn)

**Abstract:** N and K are the most in-demand essential nutrients in rice growth. There are interactions between N and K absorption in rice. This article discussed the uptake mechanism of N and K in rice, and further discussed the interaction between N and K by analysis the effect of N on K absorption, and K on N absorption.

**Key words:** rice; N absorption; K absorption; interaction

·综合信息·

## 江苏省 2016 年审定通过的水稻新品种

审定编号 (苏审稻)	品种名称	类型	选育单位	品种来源	全生育期 (d)	区试产量 (kg/667 m <sup>2</sup> )	生试产量 (kg/667 m <sup>2</sup> )	米质
201601	连梗 13 号	粳型常规稻	江苏胜田农业科技发展有限公司	连梗 6 号 /cg18	154.6	648.40	700.90	国标 3 级
201602	泗稻 15 号	粳型常规稻	江苏省农业科学院宿迁农科所	镇稻 88/05-730// 盐稻 8/ 泗稻 690	157.1	659.00	706.20	国标 2 级
201603	盐梗 16 号	粳型常规稻	江苏省盐城市盐都区农业科学研究所	盐梗 10 号 / 盐梗 220 18// 武运梗 21 号	157.7	662.30	714.10	国标 2 级
201604	宁梗 7 号	粳型常规稻	南京农业大学	武运梗 7 号 / 晚梗 9707	156.9	666.90	695.10	国标 3 级
201605	苏垦 118	粳型常规稻	江苏省农业科学院粮食作物研究所	扬梗 7 号 / 盐稻 9660	155.0	644.30	677.50	
201606	武运梗 32 号	粳型常规稻	江苏红旗种业股份有限公司、江苏(武运)水稻研究所	2842/ 进 4075	146.9	664.90	722.00	国标 2 级
201607	华梗 8 号	粳型常规稻	江苏省大华种业集团有限公司	410413/ 华梗 6 号 // 淮稻 11 号	147.9	650.60	724.60	国标 3 级
201608	盐梗 15 号	粳型常规稻	江苏省盐城市盐都区农业科学研究所	武 2517/ 盐梗 11 号	147.5	662.60	706.50	国标 3 级
201609	宁梗 8 号	粳型常规稻	南京农业大学农学院	W3668/ 宁梗 1 号	159.8	674.25	719.43	
201610	常农梗 10 号	粳型常规稻	江苏省常熟市农业科学研究所	镇稻 196/ 武 2105// 中晚梗 06/ 扬梗 3118	150.0	686.20	736.30	国标 2 级
201611	甬优 1140	籼梗交三系杂交稻	浙江省宁波市种子有限公司	甬梗 6 号 A × F7540	160.4	724.30	752.60	国标 2 级

(中稻宣)