

研究报告

2003年稻纵卷叶螟大发生的水汽条件分析

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收稿日期 2005-11-5 修回日期 2006-7-17 网络版发布日期 接受日期

摘要 为了弄清大气水汽环境对稻纵卷叶螟大发生的影响,在ArcGIS支持下,对2003年6月16日、7月21日和9月1日全国每667 m²稻纵卷叶螟平均蛾量的地理分布进行空间分析,并选取对害虫迁入影响最大的850、925和1000 hPa等压面上的大气相对湿度场和水汽通量场进行模拟和客观分析.结果表明,高空的水汽输送状况和相对湿度分布对稻纵卷叶螟的迁入具有很强的指示意义.在稻纵卷叶螟发生区域,从地面到850 hPa,各层次空气相对湿度均达到50%以上.在稻纵卷叶螟迁飞过程中,迁入地空气相对湿度不断增大,源地的空气相对湿度不断减小.850 hPa等压面是水汽输送的主要层次,也是稻纵卷叶螟迁飞的主要通道,该层的水汽输送方向与稻纵卷叶螟迁飞方向基本一致.

关键词 [稻纵卷叶螟](#) [空气相对湿度](#) [水汽通量](#) [迁飞](#)

分类号

Atmospheric water vapor conditions of *Cnaphalocrocis medinalis* outbreak in 2003

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Abstract

To reveal the influence of atmospheric water vapor conditions on the outbreak of *Cnaphalocrocis medinalis* in 2003, the geographic distributions of the pest per 667 m² of China on June 16th, July 21st, and September 1st, 2003 were analyzed under the support of ArcGIS, and the air relative humidity and water vapor flux fields on 850, 925 and 1 000 hPa that had the greatest influence on the pest immigration were selected to do simulation and objective analysis. The results showed that the transferring status of water vapor and the distribution of relative humidity on the upper air had significant indicative meanings for the immigration. In the regions of *C. medinalis* outbreak, the air relative humidity on each layer from the ground to 850 hPa was higher than 50%. The shorter the distance to the landing region of *C. medinalis*, the higher the humidity was, while the shorter the distance to the taking off region, the lower this humidity was. 850 hPa was the main layer of water vapor transferring during *C. medinalis* migration, and the key pathway of the migration. On this height, the direction of water vapor transferring was basically concurrent with that of *C. medinalis* migration.

Key words [Cnaphalocrocis medinalis](#) [Air relative humidity](#) [Water vapor flux](#) [Migration](#)

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