

研究报告

运用电子记录技术检测白背飞虱田间种群致害性

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摘要

运用电子记录技术和蜜露量测定法,对浙江富阳和安徽长丰的白背飞虱田间种群进行了致害性检测.结果表明,在2、4和6 h 3种记录时间处理下,在感虫对照水稻品种Taichung Native 1 (TN1)和高抗白背飞虱水稻品种Rathu Heenati (RHT)上,韧皮部取食时间的TN1/RHT 比值相对稳定,将2 h确定为电子记录检测白背飞虱田间种群致害性的较短记录时间.富阳的白背飞虱田间种群在N22(Wbph1)、ARC10239 (ARC,Wbph2)、ADR52 (Wbph3)、N'Diang Marie (ND,Wbph5)上分泌的蜜露量之间没有显著差异,且均显著低于在TN1上的;在ARC和ADR52上的韧皮部取食时间也没有显著差异,同时显著地短于在TN1上的.长丰的白背飞虱种群在N22和ARC上的蜜露量没有显著差异,在ADR52和ND上的蜜露量也不存在显著差异,但在前2个品种上的蜜露量显著高于后2个品种,在ADR52上的韧皮部取食时间(22.3 min·2 h⁻¹)也显著地短于在ARC上的(49.8 min·2 h⁻¹).浙江富阳的白背飞虱田间种群没有发生致害性的变化,而安徽长丰的白背飞虱田间种群则对N22和ARC产生了一定的适应性,有致害性变化的趋势.电子记录技术为快速、准确检测白背飞虱种群致害性及监测其变化提供了一种新的手段.

关键词 [白背飞虱,电子记录,取食行为,致害性,水稻](#)

分类号

Virulence of *Sogatella furcifera* field populations to rice varieties:A determination with electronic monitoring system

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Abstract

With electronic monitoring system (EMS) and honeydew measurement, this paper determined the virulence of *Sogatella furcifera* field populations in Fuyang County of Zhejiang Province and Changfeng County of Anhui Province. The results showed that in the three EMS recording periods (2, 4 and 6 h), the ratios of phloem ingestion duration to susceptible rice variety TN1 (check) and highly resistant variety RHT were relatively stable. Two hours duration was defined as the shortest period to detect the virulence of *S. furcifera* field population by EMS. The amounts of honeydew excreted by *S. furcifera* field population on rice varieties N22, ARC, ADR52 and ND in Fuyang County, which carried the dominant resistance gene Wbph1, Wbph2, Wbph3 and Wbph5, respectively, were not significantly different from each other, but significantly lower than that on TN1. The durations of phloem ingestion on ARC and ADR52 were not significantly different, but significantly shorter than that on TN1. For the field population in Changfeng County, the amounts of honeydew excreted by *S. furcifera* did not differ significantly on N22 and ARC or on ADR52 and ND, but the honeydew on the former two rice varieties was significantly more than that on the latter two. The duration of phloem ingestion on ADR52

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(22.3 min·2 h⁻¹) was significantly shorter than that on ARC(49.8 min·2 h⁻¹).Therefore,the virulence of *S.furcifera* field population in Fuyang County had no changes,whereas in Changfeng County,the population showed a definite adaptation to N22 and ARC,displaying the trend of virulence shift.Electronic monitoring system provided a new means for rapidly and accurately detecting the virulence and monitoring its change of *S.furcifera* field population.

Key words

[Sogatella furcifera](#) [Electronic monitoring](#) [Feeding behavior](#) [Virulence](#) [Rice](#)

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