

研究论文

寄主植物对B型烟粉虱 (*Bemisia tabaci*) 和温室粉虱 (*Trialeurodes vaporariorum*) 个体发育和种群繁殖的影响

罗晨, 向玉勇, 郭晓军, 张帆*, 张芝利

北京市农林科学院植物保护环境保护研究所, 北京 100097

收稿日期 2005-12-31 修回日期 2007-1-10 网络版发布日期: 2007-3-5

摘要 烟粉虱 *Bemisia tabaci* (*Gennadius*) 和温室粉虱 *Trialeurodes vaporariorum* (Westwood) 在我国北方常混合发生, 为了解两种粉虱所造成的危害和自身种群的增长变化, 制定科学的综合防治措施, 在(27±1)℃条件下研究了两种粉虱在棉花 *Gossypium hirsutum* L. (泗棉3号)、黄瓜 *Cucumis sativas* L. (北京202)、茄子 *Solanum melongena* L. (北京七叶茄) 和番茄 *Lycopersicon esculentum* Mill. (佳粉十号) 上各虫态大小、存活率、发育历期、成虫寿命、平均产卵量等生物学参数。在同一种寄主植物上, 温室粉虱的1, 2龄若虫的体长和体宽均显著大于烟粉虱, 3龄以后两种粉虱的体型则变异较大。两种粉虱从卵到成虫羽化, 在棉花上的发育历期无显著差异, 在黄瓜、茄子和番茄上, 温室粉虱的发育历期 (19.7、19.4、20.8d) 显著长于烟粉虱 (17.3、17.6、18.3d)。在黄瓜和番茄上, 烟粉虱的平均寿命 (31.2、32.1) 显著长于温室粉虱的平均寿命 (26、24.9d); 在棉花、黄瓜和番茄上, 烟粉虱的单雌产卵量 (122.2、220.2、266.5粒) 显著高于温室粉虱 (97.1、186.6、197.1粒)。烟粉虱在棉花、黄瓜、茄子和番茄上的总存活率分别为67.9%、77.8%、67.8% 和 59.0%, 温室粉虱依次为 62.2%、67.2%、64.4% 和 66.1%。综合比较4种寄主植物, 烟粉虱比温室粉虱具有个体发育时间短、种群繁殖速度快、生殖竞争能力强等特点。

关键词 粉虱 (*Bemisia tabaci*和*Trialeurodes vaporariorum*); 寄主植物; 发育历期; 寿命; 产卵量; 存活率

分类号 [Q968](#)

Comparative on development and reproduction between *Bemisia tabaci* biotype B and *Trialeurodes vaporariorum* on four species of host-plants

LUO Chen, XIANG Yu-Yong, GUO Xiao-Jun, ZHANG Fan*, ZHANG Zhi-Li

Institute of Plant and Environment Protection, Beijing Academy of Agriculture and Forestry Sciences, Beijing 100097, China

Abstract Body size, development, longevity, fecundity and survivorship of *Bemisia tabaci* (*Gennadius*) biotype B and *Trialeurodes vaporariorum* (Westwood) on cotton (*Gossypium hirsutum* L., var. Simian 3'), cucumber (*Cucumis sativas* L., var. Beijing 202'), eggplant (*Solanum melongena* L., var. Beijing 7-leaf'), and tomato (*Lycopersicon esculentum* Mill., var. Jiafen 10') were studied at 27 (±1) °C, RH 75% and a photoperiod of 14: 10 (L: D) h in the laboratory. We found that first and second instars of *B. tabaci* were significantly larger than the correspondent stages of *T. vaporariorum* on the same host plants. The sizes of third instars and pupae of the two species varied among host plants. The developmental times of *T. vaporariorum* from egg to adult were 19.7, 19.4, and 20.8 d on cucumber, eggplant, and tomato, respectively, which were significantly longer than those of *B. tabaci*, 17.3, 17.6, and 18.6 d, on the same host plants, respectively. The adult females of *B. tabaci* lived 31.2 d on cucumber and 32.1 d on tomato, which were longer than those of *T. vaporariorum* on the same host plants (26.0 d on cucumber and 24.9 d on tomato). The fecundities of *B. tabaci* on cotton, cucumber and tomato were 122.2eggs, 220.2eggs, and 266.5eggs per female, respectively, which were significantly greater than 97.1eggs, 186.6eggs, and 197.1eggs per *T. vaporariorum* female on the same host plants, respectively. Overall survival rates of *B. tabaci* from egg to adult on cotton, cucumber, eggplant, and tomato were 67.9%, 77.8%, 67.8%, and 59.0%, respectively, whereas those of *T. vaporariorum* were

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [\[PDF全文\]\(194KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“粉虱 \(*Bemisia*\)”的相关文章](#)
- ▶ [本文作者相关文章](#)

- [罗晨](#)
- [向玉勇](#)
- [郭晓军](#)
- [张帆](#)
- [张芝利](#)

re 62.2%, 67.2%, 64.4%, and 66.1% on the same host plants, respectively. We concluded that *B. tabaci* is generally superior to *T. vaporariorum* in many biological parameters, and it more likely outbreaks on the same host plants under the same environmental conditions as *T. vaporariorum*.

Key words Whitefly (*Bemisia tabaci* (Gennadius)+*Trialeurodes vaporariorum* (Westwood)) _ host plants _ development _ longevity _ fecundity _ survivorship

DOI

通讯作者 张帆 zf6131@263.net