Correspondence


HUI-LIN LU1,2, LI-TAO LI3, LI-CHEN YU3*, LI-MIN HE3, GE-CHENG OUYANG2*, GUANG-WEN LIANG1 & YONG-YUE LU1*

1 Laboratory of Insect Ecology, College of Agriculture, South China Agricultural University, Guangzhou, Guangdong 510642, China.
2 Guangdong Key Laboratory of Animal Conservation and Resource Utilization, Guangdong Public Laboratory of Wild Animal Conservation and Utilization, Guangdong Institute of Applied Biological Resources, Guangzhou, Guangdong 510260, China;
3 Changli Institute of Pomology, Hebei Academy of Agriculture and Forestry Sciences. Changli County, Qinhuangdao, Hebei 066600, China;
*correspondence to Yong-Yue Lu < luyongyue@scau.edu.cn >
*correspondence to Ge-Cheng Ouyang < 18922369378@189.cn >
*correspondence to Li-Chen Yu < ylc825@hotmail.com>  

The Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama (Hemiptera: Liviidae), is the vector of huanglongbing (HLB) or citrus greening, which is a devastating citrus disease associated with the phloem-limited bacterium *Candidatus Liberibacter*. It has expanded throughout most citrus-producing regions of Asia and the Americas (Bové 2006; Yang et al. 2006, Qureshi & Stansly 2010). Biological control agents against ACP include predators such as ladybeetles (Coleoptera: Coccinellidae), lacewings (Neuroptera: Chrysopidae), spiders (Araneae), hoverflies (Diptera: Syrphidae) (Michaud 2002, 2004; Pluke et al. 2005; Qureshi & Stansly 2008; Meng et al. 2013) and phytoseiid mites (Acari: Phytoseiidae) (Juan-Blasco et al. 2012; Fang et al. 2013, 2017), and parasitoids such as *Diaphorencyrtis aligarhensis* (Shafee, Alam and Agaral) (Hymenoptera: Encyrtidae) and *Tamarixia radiata* (Waterston) (Hymenoptera: Eulophidae) (Chien & Chu 1996; Michaud 2002, 2004). However, any single approach by itself could not provide enough reduction of ACP and HLB. This situation calls for a more proactive and augmentative approach to biologically control ACP.

*Pyemotes* mites (Prostigmata: Pyemotidae) are recorded as ectoparasites of Hymenoptera, Coleoptera and Lepidoptera species (Weiser & Hrdy 1962; Moser et al. 1978; Tomalski et al. 1988; Hoschele & Tanigoshi 1993; Yu & Liang 1996; Ma et al. 2009; Aksit et al. 2007). *Pyemotes zhonghuajia* Yu, Zhang & He is a dominant *Pyemotes* species found in north China (Yu et al. 2010). It was reported to be an efficient natural enemy against many boring pests and the female mite can kill the target pest by stinging and releasing mite toxins (Bruce et al. 1990; Ma et al. 2009; Guo et al. 2010). The goal of the present study is to test whether *P. zhonghuajia* mites could suppress ACP populations or not.

*Pyemotes zhonghuajia* populations for experiments were provided by Changli Institute of Pomology, Hebei Academy of Agriculture and Forestry Sciences, and were packed in paper boxes (3.4 cm in height with the upper and bottom diameter being 4.4 and 3.4 cm, respectively). There were 500±50 physogastric females in one box and one physogastric female could hatch 90±10 heads of *P.*