EFFECT OF INFECTION RATE OF *WOLBACHIA* ON THE REPRODUCTION IN *TETRANYCHUS KANZAWAI* KISHIDA (ACARI: TETRANYCHIDAE) IN CHINA

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ABSTRACT - The *Wolbachia* infection in three Chinese *Tetranychus kanzawai* Kishida (Acari: Tetranychidae) populations (Fuzhou, Nanchang, Pingdong) was investigated and the effect of *Wolbachia* infection rate on the reproduction of *T. kanzawai* was checked through crossing experiments. Two populations (Nanchang and Pingdong) were polymorphic for *Wolbachia* infection with an infection rate between 21-43% and the third one (Fuzhou) was uninfected. The phylogenetic tree of *Wolbachia wsp* gene sequences indicated that both Chinese *Wolbachia* strains were in the same Ori subgroup as two *Wolbachia* from the same host *T. kanzawai* in Japan. The crosses between natural Nanchang and Fuzhou populations, and natural Pingdong and Fuzhou populations showed no cytoplasmic incompatibility (CI) phenomenon, but the cross between Nanchang and Pingdong showed partial incompatibility. The 100% infected Nanchang population was prepared to cross with the natural Fuzhou population to test the effect on infection rate. Both crosses between artificially infected Nanchang population and Fuzhou population, and the cross between artificially infected Nanchang population and artificially uninfected Nanchangpopulation did not show evidence of cytoplasmic incompatibility. The observed cytoplasmic incompatibility is possibly more related to the *Wolbachia* strain or density or even host strain, rather than to the *Wolbachia* infection rate in a certain population or individual host.

Key words - Acari, Tetranychidae, *Wolbachia*, *Tetranychus kanzawai* Kishida, infection rate, cytoplasmic incompatibility, China.

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