

D309 *Wolbachia* in Camellia Spiny Whitefly, *Aleurocanthus camelliae* and its two parasitoid wasps (Hymenoptera: Aphelinidae)

○ Eko Andrianto¹ · Shunya Kuranouchi² · Jessica Adelaide Kapojos² · Atsushi Kasai² (¹UGSAS, Gifu University · ²Shizuoka University)

Wolbachia is the alphaproteobacterial endosymbiont of insects that mostly maternally inherited causing many reproductive alternations of insect hosts such as sex ratio distortion, male-killing, and parthenogenetic induction. In this study, we have revealed the high prevalence of *Wolbachia* infection in *Aleurocanthus camelliae*. The diversity of *Wolbachia* in *A. camelliae* was determined by targeting *wsp* and *ftsZ* genes. The results showed that it was clustered into two groups (A and B) and belong to supergroup B. Multilocus sequence typing (MLST) was performed and revealed novel strains with sequence type (ST) that unrecorded yet in the database. Old samples collected during the first invasion (2009-2011) of *A. camelliae* showed several strains of *Wolbachia* that were typically clustered into strains of parasitoid wasps, *Encarsia* and *Eretmocerus*. Unrecorded parasitoid wasp belongs to genus *Eretmocerus* parasitize *A. camelliae* in Kyoto and Shizuoka Prefecture were discovered. We discuss the diversity and horizontal transmission of *Wolbachia* among whitefly and its parasitoid wasps.

D310 The end of colony: termite workers steal nitrogen source under king-absent condition

○ 小西 堯生¹ · 田崎 英祐¹ · 松浦 健二¹ (¹京大院 · 農 · 昆虫生態)

Eusocial insect society is maintained via altruistic behaviors within the colony, where various resources are transferred among reproductive castes (kings/queens) and non-reproductive castes (workers). In monogamous termites, it is thought that a colony will soon come to an end when its primary king (PK) is lost. The detail mechanisms of colony collapse remain an enigma, while this is crucial for understanding how termites maintain their huge and complex societies. Here, we show that the presence of PK plays an important role in the transfer of nitrogen source within the colony in the subterranean termite *Reticulitermes speratus*. The amount of uric acid, which is a valuable nitrogen source, accumulated in workers significantly increased under PK-absent condition. In addition, our results also suggested uric acid metabolism is associated with selfish reproduction by workers. This study provides important new insights into the mechanisms of colony collapse in social insects.