

**GRAPHICAL ABSTRACT**

**Detection and Characterisation of Endosymbiont *Wolbachia* (Rickettsiales: Anaplasmataceae) in *Elaeidobius kamerunicus* (Coleoptera: Curculionioidea), Pollinating Agent of Oil Palm, and Its Relationships between Populations**

Mohd Nur Azad Rushidi, Muhammad Luqman Hakim Azhari, Salmah Yaakop and Izfa Riza Hazmi \*

Detection and Characterisation of Endosymbiont *Wolbachia* (Rickettsiales: Anaplasmataceae) in *Elaeidobius kamerunicus* (Coleoptera: Curculionioidea), Pollinating Agent of Oil Palm, and Its Relationships between Populations

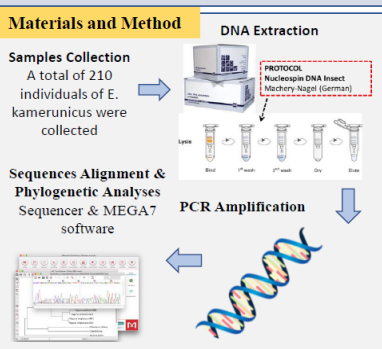


**Research Background**

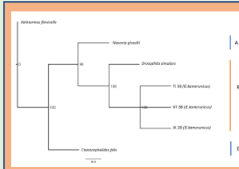
*Wolbachia* is a maternally-inherited  $\alpha$ -proteobacteria that is most frequently found in arthropods and filarids.

Reports of poor pollination and low fruit sets from Sarawak and Peninsular Malaysia (Teo 2015).

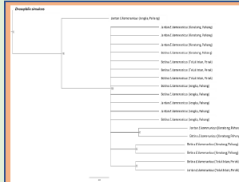
In Malaysia, there is data paucity on *Wolbachia* in insects of economic importance.



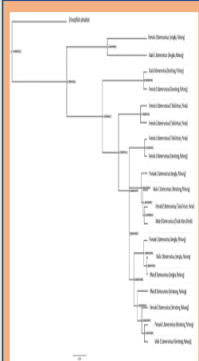
**Results** Only 25 samples were detected with *Wolbachia* infection, represented by 10 males and 15 females (12%).



The *Wolbachia* clade inside *E. kamerunicus* was observed to be together with species of *Wolbachia* inside *D. simulans* with a bootstrap support value of 100% bootstrap value.



The bootstrap value of individual relations inside the clade and individuals from Jengka, Pahang that was isolated was 100%.



The individual *E. kamerunicus* is seen in the same clade with *Nasonia giraulti*. The evolution distance between individual clade of *E. kamerunicus* and *Encarsia formosa* is 0.0000000017. Meanwhile, the value between individual *E. kamerunicus* is 0.0000000015 (JK 3B) and 0.0000000017 (KT 3B).

**Conclusion**

The ability of *Wolbachia* to infect oil palm-pollinating weevils has generated interest in its usage to cause femininity and fecundity in *E. kamerunicus*. More research is needed to improve the body of knowledge on the benefits of the symbiosis between *Wolbachia* and *E. kamerunicus*. Such vital information will assist in enhancing sustainable oil palm production, thus boosting the production of one of the leading natural commodities of Malaysia.