

INTISARI

Helopeltis bradyi merupakan salah satu hama penting pada pertanaman teh dan kakao di Indonesia. Serangan *Helopeltis* pada teh dan kakao menyebabkan penurunan hasil yang tidak sedikit. Sistem penciuman bau pada *Helopeltis* berperan penting bagi hama ini untuk menemukan inangnya. Salah satu gen penting dalam sistem penciuman serangga hama *Helopeltis bradyi* adalah Olfactory co-receptor (Orco). Penelitian ini dilakukan untuk mengetahui ekspresi gen Orco pada berbagai jaringan tubuh *Helopeltis*. Antena nimfa, antena betina, antena jantan, thoraks betina, thoraks jantan, abdomen betina, dan abdomen jantan digunakan sebagai sampel dalam penelitian ini. Pengujian ekspresi secara kualitatif gen Orco pada semua sampel jaringan dilakukan dengan basis *Polymerase Chain Reaction* (PCR), dengan gen *Cytochrome oxidase* sub unit 1 (Cox-1) sebagai pembanding. Hasil PCR divisualisasikan menggunakan elektroforesis dan diamati ekspresi gen Orco pada setiap jaringan serangga, kemudian dilakukan analisis hubungan filogenetik gen Orco *Helopeltis*. Hasil penelitian menunjukkan bahwa gen Orco terekspresi di seluruh sampel jaringan yang digunakan namun terekspresi lebih banyak pada jaringan antena nimfa, antena betina dan antena jantan serta gen Orco *Helopeltis* memiliki tingkat kekerabatan paling dekat dengan *Nesidiocoris tenuis*.

Kata kunci: *Helopeltis bradyi*, gen Orco, Cox-1, antena, thoraks, abdomen.

ABSTRACT

Helopeltis bradyi is one of the important pests in tea and cocoa plantation in Indonesia. *Helopeltis* attacked on tea and cocoa caused a significant decreased in yield. The olfactory system of *Helopeltis* played an important role for host finding. One of the important genes in the olfactory system in *Helopeltis bradyi* is Olfactory co-receptor (Orco). This research was conducted to determine the expression of the Orco gene in various *Helopeltis* body tissue. The nymph antenna, female antenna, male antenna, female thorax, male thorax, female abdomen, and male abdomen were used as samples in this study. Qualitative testing of the Orco gene expression on all tissue samples was carried out based on Polymerase Chain Reaction (PCR), with the Cytochrome oxidase sub unit 1 (Cox-1) gene as a comparison. The PCR results were visualized using electrophoresis and then observed the expression of the Orco gene in each insect tissue, then analyzed the phylogenetic relationship of the Orco *Helopeltis* gene. The results showed that the Orco gene were expressed in all tissue samples but more expressed in the tissue of nymph antenna, female antenna and male antenna, and the Orco *Helopeltis*. gene had closest relationship with *Nesidiocoris tenuis*.

Keywords: *Helopeltis bradyi*, gene Orco, Cox-1, antenna, thorax, abdomen.