



MMS5 e-Conference

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Effects of phytojuvenoid on the development of wing in the bamboo borer, *Omphisa fuscidentalis*

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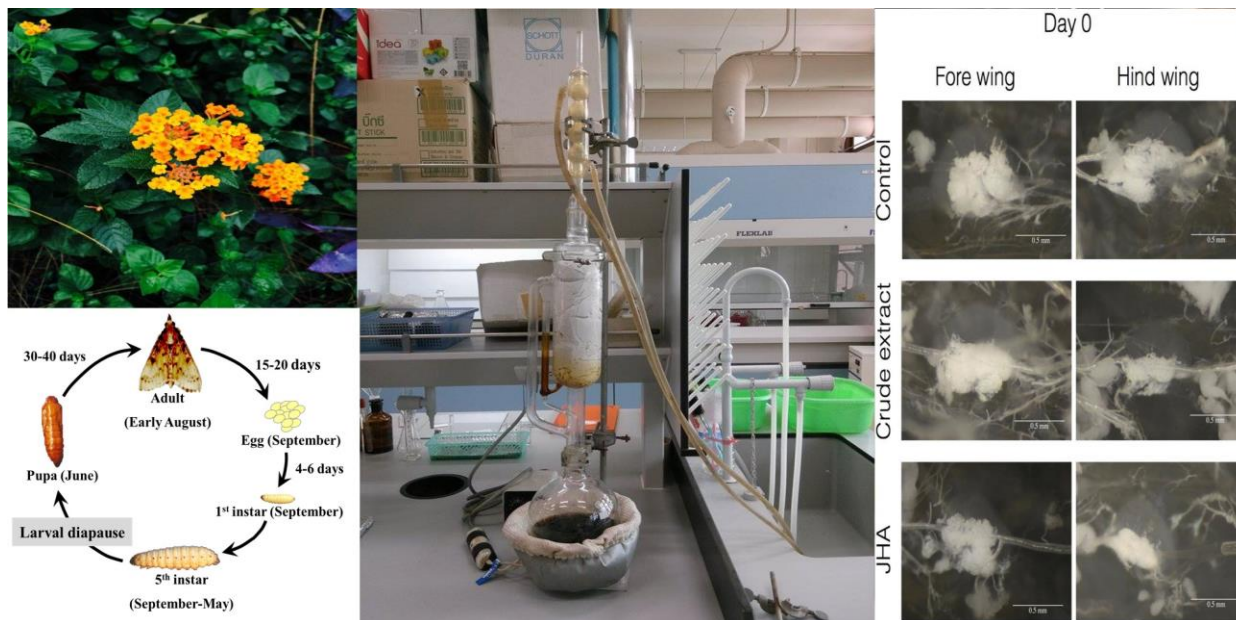
Abstract:

There have been evidences that *Lantana camera* shows phytojuvenoid activity (natural compounds that are exhibiting biochemical properties of juvenile hormone in the insects). In *O. fuscidentalis*, application of phytojuvenoid extracted from *L. camera* induced pupation on diapausing larvae and defect in wing morphology in the adults. In this research, the effects of phytojuvenoid extracted from *L. camera* on the development of wing were evaluated against *O. fuscidentalis* diapausing larvae. In addition, we will identify and characterize *vestigial (vg)* gene and then study the effects of phytojuvenoid and juvenile hormone analog (methoprene) on gene expression during insect development in the molecular level. Soxlet extraction of plant and methoprene at concentrations of 0.5 $\mu\text{g}/5\mu\text{L}$ were treated on the diapausing larvae by topical application method. Wing development were recorded until pupation. The results demonstrated both phytojuvenoid and methoprene induced pupation within 19 and 12 days, respectively. Wing disc development after hormonal treatments shared similar patterns in increasing in width and length of both forewing and hindwing and significantly different than those of control group ($P<0.05$). We also cloned and sequenced wing development related gene, *Omphisa fuscidentalis Vestigial (OfVg)*. The partial sequence of *OfVg* is comprised of 924 nucleotides in length encoding 308 amino acids. The effects of phytojuvenoid on the adult wing morphology and developmental profiles of *OfVg* mRNA in the bamboo borer will be further investigated.



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Graphical abstract



The research scope of the MRG 6280124 project