

Abstract

Citrus fruit borer is one of the economically important on *Citrus* genus plants and are considered a pest in highland. These insects reduced both quantity and quality of citrus fruits significantly as high as 30%. Currently, farming must be environmental-friendly. The farmers must follow the principles of pest management and use pesticide substitute. The objectives were to study efficiency of active substances and select the suitable attractant to produce citrus fruit borer moth trap. Type of solvent for extraction from exocarp and mesocarp of *Citrus* genus plants; lemon, kumquat and pomelo was researched. Water and ethanol were studied. It was found that natural substance extracted from mesocarp of pomelo attracted high citrus fruit borer moths catches at 1.25. Substances extracted from exocarp and mesocarp of *Citrus* genus plants; lemon, kumquat and pomelo and commercial synthetic compounds were analyzed by HS-SPME/GC-MS. The result showed that the compound may be able to attract citrus fruit borer moth were Limonene, Pinene, cis-3-Hexenyl acetate, and cis-3-Hexen-1-ol to selected and tested the attracting effect for citrus fruit borer moths. The efficacy test of citrus fruit borer moth of natural extract and synthetic chemical in the field. It was found that cis-3-Hexen-1-ol attracted high citrus fruit borer moths at 1.75. Next, the basic production formula was studied. Mixture of mesocarp of pomelo extract and cis-3-Hexen-1-ol (5 drops : 10 drops ratio 1:2) attracted higher citrus fruit borer moths at 2.00, 2.50, and 2.00 respectively of three tests (27.08 % of the total number moth attracted by the tests). When trap models which adapted by using cubic basket plastic boxes with the basic production formula yielded the best citrus fruit borer moth at 58.63 % of the total number moth attracted by the tests. At this stage, it may be conclude that theses two compounds could be developed and showed attraction activity for controlling citrus fruit borer moth on highland.

Keywords: Attractant, Citrus fruit borer moth, Citrus genus plant, Highland, Environmental-friendly