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【Scientific note】

果樹膠蟲生物習性及藥劑防治【科學短訊】

謝豐國、黃振聲

*通訊作者E-mail:

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Abstract

摘要

本省膠蟲之寄主植物累計27科66種，膠蟲年生二代，成熟雌蟲在體內先形成卵，再以卵胎生(Ovoviviparity)方式產出後代。試驗證實風力係膠蟲移動性初齡若蟲散佈的主要因子之一。溫室試驗顯示，供試藥劑Dimethoate, Actellic, Anthio, Sumithion及Sevin等殺蟲劑，對膠蟲若蟲與成蟲之防治藥效差異甚；初齡若蟲施藥後的防治率為87.3-98%，而對成蟲之防治率僅及28.9-80.2%。Dimethoate對初齡若蟲之藥效持久力約為10日，且對26至46日齡若蟲之防治率無甚差別，均達96.1%以上。田間藥劑試驗顯示，以Dimethoate和Azodrin 10-100倍稀釋液直接塗刷於膠蟲寄生部位，經六週後防治率可達100%。以Dimethoate, Sumithion, Anthio或Azodrin添加Summer oil,每隔兩週對膠蟲初期成蟲噴灑一次，須連續施藥4次，防止率才可達94.7%以上。對初齡若蟲防治試驗則發現，以Di-methoate噴灑一次，防治率即可達87.3%；而以Actellic或Sumith-ion每週噴灑一次，連續噴三次，防治率則可達97%及98%。

Key words:

關鍵詞:

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**THE INDIAN LAC INSECT IN TAIWAN, ONCE A BENEFICIAL INSECT,
NOW A NUISANCE.**

F.K. Hsieh and J.S. Hwang
Plant Protection Center, Taiwan, Wufeng
Taiwan 431, R.O.C.

ABSTRACT

Sixty six species plants were found to have damaged by the lac insect, *Kerria lacca* Kerr in Taiwan. Damage rates of two most seriously injured fruit trees, longan and lichee were 26.6 and 9.1%, respectively. Two generations were found to occur each year. Overwintering was performed by the adult. Eggs were formed in the female adult yet ovoviviparity was evidenced. The first instar stuck to the tree branch at the end of its stadium and thereby parasitized the host for good. Secretions of wax and shellac began in the first instar and continued to increase till the adult stage. The female possessed 3 nymphal stadia but the male had only 2 with additional prepupal and pupal stages. The female remained on the branch all its life whereas the male emerged to either winged or wingless forms. The insects tended to shelter themselves underneath the branches to avoid the solar radiation and rainfall. Dispersal were carried out by self-movement of the crawling first instar, wind, birds, and other animals. Susceptibility of the insect among various varieties of longan and lichee showed no significant difference. Several natural enemies were identified and the symbiosis between the lac insect and the ant usually occurred. Experiments in the green house showed that emulsive spraying over the tree was more effective against the insect than granular treatment of the root zone or painting chemicals on tree trucks or branches. A complete control was obtained in a few weeks following a single spray of the nymphal stadia with dimethoate, azodrin, anthio, or dimethoate + summer oil. However, the best control reached only 69.4% (anthio) when the spray was directed towards the late adult stage 4 times at a 2-week interval.

Note: The full paper of this abstract is in press on plant prof. Bull. 22.

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謝豐國

黃振聲

台灣植物保護中心昆蟲組

本省膠蟲之寄主植物累計27科66種，膠蟲年生二代，成熟雌蟲在體內先形成卵，再以卵胎生(Ovoviviparity)方式產出後代。試驗證實風力係膠蟲移動性初齡若蟲散佈的主要因子之一。溫室試驗顯示，供試藥劑Dimethoate, Actellic, Anthio, Sumithion及Sevin等殺蟲劑，對膠蟲若蟲與成蟲之防治藥效差異甚大；初齡若蟲施藥後的防治率為87.3~98%，而對成蟲之防治率僅及28.9~80.2%。Dimethoate對初齡若蟲之藥效持久力約為10日，且對26至46日齡若蟲之防治率無甚差別，均達96.1%以上。田間藥劑試驗顯示，以Dimethoate和Azodrin 10~100倍稀釋液直接塗刷於膠蟲寄生部位，經六週後防治率可達100%。以Dimethoate, Sumithion, Anthio或Azodrin添加Summer oil,每隔兩週對膠蟲初期成蟲噴灑一次，須連續施藥4次，防止率才可達94.7%以上。對初齡若蟲防治試驗則發現，以Dimethoate噴灑一次，防治率即可達87.3%；而以Actellic或Sumithion每週噴灑一次，連續噴三次，防治率則可達97%及98%。