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臺灣銹蠓 (雙翅目：蠓科) 飼育技術之探討

Studies on Breeding Techniques of Forcipomyia (Lasiohelea) taiwana (Shiraki) (Diptera: Ceratopogonidae)

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中文摘要

於不同之供試底質中，首度發現瓊脂材質的環境條件最適合臺灣銹蠓 (Forcipomyia (Lasiohelea) taiwana) 幼蟲之發育生長。以瓊脂為飼育底質之臺灣銹蠓幼蟲發育生長所需時間僅為 9.4 日，幼蟲期幼蟲存活率及幼蟲發育至成蟲存活率分別高達 96% 及 93%，蛹之存活率亦高達 97%。而在成蟲對不同底質之產卵偏好性試驗結果亦顯示，雌成蟲於瓊脂底質上之產卵數較多，可見以瓊脂為底質在飼育臺灣銹蠓方面是個非常好的材料。利用五種不同藻類飼育臺灣銹蠓幼蟲結果顯示：以魚腥藻 (Anabaena sp.) 為食之臺灣銹蠓幼蟲期為 10.0 日；以柵藻 (Scenedesmus sp.) 及小球藻 (Chlorella sp.) 為食者，其幼蟲期分別為 8.4 日及 8.9 日；而以側生藻 (Fischerella sp.) 及顫藻 (Oscillatoria sp.) 為食者，其幼蟲期則較長，依次為 13.1 日與 18.2 日，蛹期亦有顯著延長之現象。以柵藻及魚腥藻為食之幼蟲存活率分別達 94% 及 91%，蛹之存活率則依次為 78% 及 89%。由本試驗結果發現以供試五種藻類飼育臺灣銹蠓，皆可完成幼蟲及蛹之發育生長。若同時考量幼蟲及蛹發育生長所需時間及存活率時，則柵藻為供試藻類中之最佳者。而就雌成蟲對供試藻類之產卵偏好性而言，臺灣銹蠓較偏好於魚腥藻及側生藻上產卵。

關鍵字：臺灣銹蠓; 小黑蚊; 藻類; 底質

Abstract

Different substrates were tested for their suitability to grow Forcipomyia (Lasiohelea) taiwana (Shiraki) larvae. It was first found that an agar-based substrate was the most suitable for the biting midge. The developmental time for larvae reared on an agar-based substrate was only 9.4 days. The survival rate of larvae, larvae developing to adults and pupae was 96%, 93% and 97%, respectively. Experiments on the ovipositional preferences of female adults of F. taiwana showed that female adults deposited the largest number of eggs on the agar-based substrate, indicating that the agar-based substrate is an excellent material for breeding midge larvae. The developmental time for F. taiwana larvae feeding on five different algae was as follows: Anabaena sp., 10.0 days; Scenedesmus sp., 8.4 days; Chlorella sp., 8.9 days; Fischerella sp., 13.1 days; and Oscillatoria sp., 18.2 days, respectively. For those larvae that were fed Fischerella sp., and Oscillatoria sp., the pupal durations were the longest. The survival rate for larvae feeding on Scenedesmus sp. and Anabaena sp. was 94% and 91%, respectively, and the survival rate for the pupae was 78% and 89%, respectively. It was found that F. taiwana bred on any of these five different algae could all complete the larval and pupal development. Based on the developmental time and the survival rate for this biting midge, Scenedesmus sp. was the best one of the algae tested. However, in terms of the oviposition, the female midges laid the most eggs on Anabaena sp. and Fischerella sp. among five kinds of algae.

Key words：Forcipomyia (Lasiohelea) taiwana; Biting midge; Algae; Substrate