INTISARI

Nilaparvata lugens (Hemiptera: Delphacidae) adalah hama penting pada tanaman padi yang biasanya dikendalikan dengan insektisida kimia. Tiametoksam, insektisida sistemik golongan neonikotinoid, diaplikasikan melalui perlakuan benih, tabur tanah, dan foliar untuk mengendalikan berbagai hama utama. Penelitian ini bertujuan mengevaluasi efek tiametoksam sebagai perlakuan benih terhadap hama non-target *N. lugens* dan pertumbuhan tanaman padi. *N. lugens* dipilih sebagai hama non-target karena tiametoksam umumnya digunakan untuk mengendalikan hama utama lainnya pada padi. Dosis yang diuji adalah 2 kali anjuran (6,75 ml/kg benih), 1.5, 1, dan 0.5 kali anjuran. Nimfa instar 3 dilepaskan ke dalam pot perlakuan dan kontrol, kemudian diamati mortalitas, intensitas serangan, serta dampak terhadap pertumbuhan tanaman. Hasil menunjukkan bahwa dosis 2 kali anjuran meningkatkan mortalitas *N. lugens* dibandingkan dengan kontrol hingga 14 hari setelah tanam (HST) dan menurun setelah 21 HST , serta mengurangi kerusakan akibat serangan hama. Tiametoksam dapat digunakan dalam mengendalikan WBC tanpa merugikan pertumbuhan dan perkembangan tanaman. Perlakuan tiametoksam tidak mempengaruhi viabilitas benih dan agronomi tanaman secara signifikan. Penelitian ini menunjukkan bahwa perlakuan benih dengan tiametoksam dapat menjadi dasar strategi pengelolaan hama terpadu dan analisis risiko penggunaan pestisida sintetik.

Kata kunci: Perlakuan benih, Tiametoksam, *Nilaparvata lugens*, Mortalitas, Pertumbuhan dan Perkembangan

Abstract

Nilaparvata lugens (Hemiptera: Delphacidae) is a major pest of rice plants, typically controlled using chemical insecticides. Thiamethoxam, a systemic insecticide in the neonicotinoid class, can be applied through seed treatment, soil application, and foliar spray to control various primary pests. This study aims to evaluate the effect of thiamethoxam as a seed treatment on the non-target pest *N. lugens* and rice plant growth. *N. lugens* is considered a non-target pest in this context because thiamethoxam is generally used to control other primary pests on rice. The doses tested were 2 times the recommended rate (6.75 ml/kg seeds), 1.5 times, the recommended rate, and 0.5 times the recommended rate. Third-instar nymphs were released into treated and control pots, and their mortality, attack intensity, and impact on plant growth were observed. The results showed that the 2 times recommended dose increased *N. lugens* mortality compared to the control up to 14 days after planting (DAP) and decreased after 21 DAP, reducing damage caused by the pest. Thiamethoxam can control brown planthopper without harming plant growth and development. Thiamethoxam treatment did not significantly affect seed viability and plant agronomy. This study indicates that seed treatment with thiamethoxam can be a basis for integrated pest management strategies and risk analysis of synthetic pesticide use.

Key words: Seed treatment, Thiamethoxam, Nilaparvata lugens, Mortality, Growth and Development