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ABSTRACT BOOK

THE 3rd INTERNATIONAL CONFERENCE ON BIODIVERSITY, SCIENCE, AND TECHNOLOGY

The BCG Model for Sustainability and
Community Development



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S3-O8

Panicle rice mite (*Steneotarsonemus spinki* Smiley), case study in Vietnam

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Abstract

The panicle rice mite (*Steneotarsonemus spinki* Smiley; Acari: Tarsonemidae) (PRM) poses a significant threat to rice production in Vietnam, causing damage during critical yield-determining stages, including panicle initiation, flowering, and grain filling. To investigate its biology, PRM was reared under controlled laboratory conditions at 80 - 85% relative humidity and three temperatures: 25, 27.5, and 30°C. The life cycle duration of PRM was 6.0 days at 30°C, shorter than that at 27.5°C (9.2 days) and 25°C (11.2 days). At 30°C, the oviposition period ranged from 8 to 10 days, with peak egg-laying occurring between 3 and 5 days after female emergence. Fecundity averaged 69.1 eggs/female and the progeny sex ratio was 1:6.3 (male:female). Because PRM is a major pest, farmers frequently apply various pesticides at the three crop stages, including quinalphos, abamectin, pyridaben, matrine, profenofos, and propargite. Among these chemicals, propargite showed the highest efficacy but raised environmental concerns, highlighting the need for sustainable control alternatives. During field research, the predatory mite *Lasioseius* sp. was consistently observed as a natural enemy of PRM. Biological parameters of *Lasioseius* sp. were determined at 30°C. The results showed that the life cycle of the predatory mite was 6.2 days and fecundity averaged 25.3 eggs/female. Both larval and adult stages of the predator were able to consume all developmental stages of PRM. In non-choice test, the predator larvae consumed an average of 11.7 PRM eggs/day, while the adults consumed 32.0 PRM adults/day. These results showed that *Lasioseius* sp. has strong potential as a biological control agent for the management of PRM.

Keywords: alternative host; *Lasioseius* sp.; life cycle; paddy rice, *Steneotarsonemus spinki*, Thua Thien Hue province