UNIVERSITI TEKNOLOGI MARA

A SURVEY OF INSECT PEST AND BENEFICIAL ARTHROPOD SPECIES IN ORGANIC AND INORGANICALLY GROWN PADDY IN WEST JOHOR

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Final year project report submitted in partial fulfilment of the requirements for the degree of
Bachelor of Science (Hons.) Plantation Technology and Management

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APPROVAL SHEET

This Final Year Project Report entitled "**A Survey of Insect Pest and Beneficial Arthropod Species in Organic and Inorganically Grown Paddy in West Johor**" was submitted by **Harushani Bin Parzi**, in partial fulfilment of the requirement for the Degree of Bachelor of Science (Hons.) Plantation Technology and Management, in the Faculty of Plantation and Agrotechnology, and was approved by

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CANDIDATE'S DECLARATION

I declare that the work in this Final Year Project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. The final year project report has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event that my Final Year Project is found to violate the conditions mention above, I voluntarily waive the right of conferment of my bachelor degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

The study was conducted at non-granary growing paddy area in Johor and Malacca for a season May to August 2014. Insect sampling was done by using sweep net, yellow sticky trap and water pan trap for two plot of fragrant variety planted by semi-organic and inorganic practices. From the study, 31 arthropod species was identified. From that 16 species is categorized as insect pests while 9 species is the beneficial insects that act as natural enemies toward pest species. Another 6 species is categorized as others since they are not pest and not cause any harmful to paddy. *Nephotettix virescens, Nilaparvata lugens, Hydrellia philippina,* and *Recilia dorsalis*, in that order of abundance, are considered as the major pests of paddy in the studied locations. Species from order Odonata (damselflies) and Araneae (spiders) are the two most important predatory group (natural enemies) possibly controlling the insect pest population. Analysis of variance at for mean different shows that there is no significant of arthropod abundance between semi-organic and inorganic planting practice, and for each of the 2 major groupings- pests, and natural enemies. Pests that identified have significant different among three growth stages are Green leafhopper- *Nephotettix virescens,* Brown planthopper- *Nilaparvata lugens,* Rice leafhopper- *Cnaphalocrocis medinalis, Herpetogramma aeglealis, Spodoptera exigua* (larvae), *Xanthopimpla flavolineata*-Cameron, and *Recilia dorsalis.* Demsflies- *Aciagrion borneense*, Long-jaw spider- *Tetragnatha maxillosa thorell*, and *Paederus fuscipes* Curtis are the natural enemies species that have significant different among three growth stage. Findings indicate that pesticides application in inorganic cultivation have adverse effect toward beneficial species population. Semi-organic inputs should be encouraged if it does not drastically affect yield. Thus it will enhance the reducing of chemical usage that contributes to sustainability of agriculture.

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