INSECTICIDE RESISTANCE STUDIES ON BROWN PLANTHOPPER (Nilaparvata lugens) IN SELECTED ASIAN COUNTRIES

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In the Faculty of Plantation and Agrotechnology Universiti Teknologi MARA

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CANDIDATE’S DECLARATION

I declare that the work in this dissertation 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. This dissertation has not been submitted to any other academic or non-academic institution for any other degree or qualification.

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS</td>
<td>vii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>viii</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td>ix</td>
</tr>
</tbody>
</table>

## CHAPTER

### 1 INTRODUCTION

1.1 Background of Study                       | 1   |
1.2 Problem Statement                         | 2   |
1.3 Significant of Study                      | 3   |
1.4 Objectives of Study                       | 3   |

### 2 LITERATURE REVIEW

2.1 Brown Planthopper (*Nilaparvata lugens*)  | 4   |
   2.1.1 Scientific Classification            | 4   |
   2.1.2 Origin                               | 5   |
   2.1.3 Morphology                           | 6   |
   2.1.4 Damages Caused by Brown Planthopper  | 11  |
   2.1.5 Control Methods                      | 13  |
2.2 Insecticides Resistance                  | 15  |
   2.2.1 Definition                           | 15  |
   2.2.2 Insecticides Resistance              | 15  |
   2.2.3 Caused of Resistance                 | 17  |

### 3 RESULT AND DISCUSSION

3.1 Data Collection                           | 19  |
3.2 Review of BPH Resistance Based on Phase 1, 2 And 3. | 21  |
3.3 Insecticides Resistance Based on Countries | 25  |

### 4 CONCLUSIONS AND RECOMMENDATION

REFERENCES                                    | 26  |
APPENDIX                                      | 28  |
CURRICULUM VITAE                               | 31  |

ABSTRACT

INSECTICIDE RESISTANCE STUDIES ON BROWN PLANTHOPPER (Nilaparvata lugens) IN SELECTED ASIAN COUNTRIES

Brown Planthopper (BPH) (Nilaparvata lugens Stål) is the major insect pest of rice crops throughout Asia. In recent years, N. lugens outbreaks have been common in Asian countries because the pest has developed medium to high levels of resistance to major insecticides, including organochlorines, organophosphates, carbamates, insect growth regulators and neonicotinoids. The effect of BPH attack caused the paddy field to have the hopperburn phenomena. These review were covered the literature studies of insecticide resistance of BPH for 15 years from 2001 until 2015. The objectives of this review are to determine the insecticides resistance of BPH according to the types of insecticides and to compare the resistance of BPH on selected Asian countries such as Malaysia, Japan, Korea, Philippines, India, China, and other countries. From the review, the result showed there are three groups of insecticides that are commonly used by the farmers in Asia are neonicotinoids, carbamates and others various groups of insecticides. The highest reported insecticides towards resistance to BPH are neonicotinoids. Meanwhile, China is the highest country was reported for insecticide resistance to BPH compared with other selected Asian countries. High resistance towards neonicotinoids due to the continuous used by the farmers even though it is not effective for controlling BPH. From these reviews, suggesting monitoring on the insecticides used by farmers to avoid continuous resistance to BPH.