I

A FIELD STUDY, PREPARATION AND EVALUATION OF A STUDY GUIDE ON INSECT DIVERSITY AND INSECT PESTS IN A RICE FIELD: [FOR G.C.E.A/L BIOLOGY SYLLABUS]

A PROJECT REPORT PRESENTED BY

M.W.P.D. GUNAWARDANA

to the Board of Study in Science Education
POST GRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement
for the award of the degree of

MASTER OF SCIENCE IN SCIENCE EDUCATION

of the

UNIVERSITY OF PERADENIYA
SRI LANKA
2005

ABSTRACT

The objective of this study was to document the insect diversity and insect pest in a rice field in relation to the G.C.E. A/L Biology syllabus. The field study was carried out in a rice field in the Matale District and was conducted from December 2003 to April 2004, covering one cultivation cycle.

The study reports the methodology followed in studying rice field insect diversity and insect pests, the occurrence presence of rice insects and pests at different stages of growth of the rice plant and at different phases of the rice field. By field sampling at fortnightly intervals, insects were monitored through out the cultivation cycle. Insects on rice field vegetation were sampled using a sweep net, insects in water were sampled using a standard dipper, and soil insects were sampled using a soil corer. A total of 39 morpho species of insects belonging to 7 Orders and 31 Families were recorded during the cultivation cycle. Six major rice pest species were present in the rice field during the study. The number of insects collected during sampling different with the age of the rice plant. Abundance of insects was high during the nursery stage and there after increased from days 56 to days 98 that corresponded with flowering and grain ripening. The abundance of insects was also high during the dry phase of the rice field. Occurrence of rice pests at different stage of growth of the rice plant was also recorded.

Study Guide was prepared for the teachers and students and evaluated using a questionnaire using G.C.E.A/L students. The Study Guide is based on Practicals 10 and 40 of the Practical Guide and gives instructions on how to conduct a field study on rice insects, insect pests, and their damage. Using the questionnaire the subject knowledge on aspects stipulated in Units 2 and 8 of the G.C.E.A/L Biology syllabus was examined prior to and after the use of the Study Guide.

Students performed well after doing the field study in the rice field and after following the Study Guide.