



Davao del Sur State College
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Laboratory Manual in Insect Physiology and Toxicology





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PREFACE

This laboratory manual was developed as a practical learning resource for CP 603 – Insect Physiology and Toxicology. It complements classroom instruction by providing hands-on activities that strengthen students' understanding of insect anatomy, physiological processes, growth and development, and responses to toxic substances.

The exercises cover essential topics such as insect mass rearing, internal anatomy, feeding and digestion, circulation, respiration and excretion, growth and development, probit analysis, and insecticide dilution assays. Through these activities, students are expected to develop competence in handling and dissecting insect specimens, using laboratory materials and equipment, conducting physiological and toxicological experiments, recording observations, analyzing data, interpreting results, and preparing scientific reports.

This manual emphasizes careful observation, accuracy, critical thinking, laboratory safety, ethical handling of living organisms, proper waste disposal, and scientific integrity. Students are encouraged to perform each exercise responsibly and collaboratively while relating their laboratory findings to the concepts discussed during lectures. Procedures may be modified by the instructor according to the availability of specimens, materials, equipment, and prevailing laboratory conditions, provided that the intended learning outcomes are maintained.

It is hoped that this manual will provide students with a meaningful and engaging laboratory experience and deepen their appreciation of the physiological mechanisms that enable insects to survive, develop, reproduce, and respond to environmental and chemical factors. More importantly, may it prepare them to apply their knowledge and laboratory skills in crop protection, pest management, agricultural research, and related fields.

The author gratefully acknowledges the researchers, educators, colleagues, and students whose knowledge, recommendations, and experiences contributed to the preparation and improvement of this manual. Their valuable contributions have helped make this material a relevant and useful resource for teaching and learning.



TABLE OF CONTENTS

TITLE	PAGE
Title	i
Preface	ii
Table of Contents	iii
 Laboratory Exercise No. 1 – Mass Rearing of Insects	 1
Worksheet No. 1	7
Laboratory Exercise No. 2 – Internal Anatomy of Insects	9
Worksheet No. 2.1	11
Worksheet No. 2.2	12
Worksheet No. 2.3	13
Worksheet No. 2.4	14
Laboratory Exercise No. 3 – Feeding and Digestion	15
Worksheet No. 3.1	17
Worksheet No. 3.2	18
Laboratory Exercise No. 4 – Hemolymph and Circulation	18
Worksheet No. 4.1	22
Worksheet No. 4.2	23
Laboratory Exercise No. 5 – Respiration and Excretion	24
Worksheet No. 5.1	28
Worksheet No. 5.2	29
Laboratory Exercise No. 6 – Growth and Development	30
Worksheet No. 6.1	33
Worksheet No. 6.2	34
Worksheet No. 6.3	35
Laboratory Exercise No. 7 – Probit Analysis	36
Worksheet No. 7.1	41
Worksheet No. 7.2	42
Laboratory Exercise No. 8 – Insecticide Dilution Assay	50
Worksheet No. 8.1	52
 APPENDICES	
Grammarian Certification	53

