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**to the Lord**

*to my dearest parents*

**Krishnamohon and Jamuna**

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significance in the region. Furthermore, it was revealed that 28 of these fruit species possess multiple applications, highlighting their versatility and potential. These fruits have long been extensively utilized as preventive tonics for addressing a variety of ailments, including skin and gastrointestinal issues, as well as other health-related concerns. The chapter provides valuable insights into the abundance and utility of wild edible fruits in two community forest of Manipur.

Chapter 4 provides a detailed investigation of the seed germination, survival, and growth of selected seven wild edible fruit plant species: *Elaeocarpus floribundus*, *Microcos paniculata*, *Phyllanthus emblica*, *Rhus semialata*, *Solanum betaceum*, *Vangueria spinosa*, and *Ziziphus mauritiana*. The study focuses on examining the micro-climatic conditions within shade netting experimental houses of varying percentages of shades. The findings reveal notable variations in light intensity, with higher values observed during September and October. The air temperature remains relatively stable throughout the study period, while humidity levels exhibit moderate variations. Soil temperature remains consistent with no significant changes. The experiment highlights that seeds of selected wild edible fruits demonstrate a higher preference for an open field setting in terms of germination. The survivability and growth attributes of these fruits vary among different plant species when exposed to different shaded environments. The variation in light intensity, influenced by different shade nets, emerges as a key factor affecting growth and physiological responses, including photosynthesis rate and pigment content. Overall, this chapter provides valuable insights into the cultivation and environmental requirements of wild edible fruit plants, contributing to our understanding of their growth patterns and potential for cultivation.

Chapter 5 is dedicated to the examination of the physico-chemical and chemical attributes of 15 wild edible fruits. The results demonstrate fluctuations in moisture content, with *Averrhoa carambola* L. displaying the highest moisture content, whereas *Rhus semialata* Murr. exhibits the lowest. The range of ash content is between 2.00% and 12.50%, while the fat content ranges from 0.40% to 6.85%. All fruits exhibit high calorific values. The total carbohydrate content varies from 8.16% to 36.39%, and the total protein content ranges from 0.70 g/100g to 11.66 g/100g. The fruits demonstrate

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# *Declaration*

I hereby declare that this thesis entitled '**Assessment of wild edible fruit plants of Manipur, north-east India: population structure, seedling survival, growth, and phytochemical characterization**' is being submitted to Tezpur University in partial fulfilment for the award of the degree of Doctor of Philosophy in the Department of Environmental Science. This is a record of bonafide research work accomplished by me under the supervision of Dr. Ashalata Devi, Professor, Department of Environmental Science, Tezpur University, Assam, India. The results obtained and related interpretations included in the thesis are based on my original work. All the help received from various resources (books, research papers, websites, etc.) when writing the thesis are acknowledged at respective places in the text.

I would also like to mention that no part of the thesis has been submitted elsewhere for award of any other degree.

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### *Certificate of the supervision*

This is to certify that the thesis entitled '**Assessment of wild edible fruit plants of Manipur, north-east India: population structure, seedling survival, growth, and phytochemical characterization**' being submitted by **Mayanglambam Bidyalakshmi Devi** to the School of Sciences, Tezpur University, India for the award of degree of **Doctor of Philosophy** is a record of genuine research work carried out by him under my supervision and guidance.

All help received by her from various sources have been duly acknowledged.

No part of this thesis has been submitted elsewhere for the award of any other degree.

The thesis work, in my opinion is worthy of considering for the award of degree of **Doctor of Philosophy** in accordance with the regulation of the institute.

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# *Acknowledgement*

I would like to begin by expressing my utmost gratitude and appreciation to my supervisor, **Prof. Ashalata Devi**. Her unwavering encouragement, unconditional support, continuous inspiration, and guidance throughout my research work have been invaluable. I am truly grateful to have her as my supervisor, as she has not only shaped me into a new individual but has also become a family. I have gained numerous invaluable skills and knowledge from her, extending beyond the academic realm.

I extend my heartfelt thanks to the members of my doctoral committee: Dr. Nirmali Gogoi from the Department of Environmental Science, and Prof. Manabendra Mandal and Dr. Nima D. Namsa from the Department of Molecular Biology and Biotechnology at Tezpur University. Their generous time and support in reviewing my research work have been influential. I am deeply grateful for their valuable suggestions, remarks, and encouragement. Additionally, I would like to express my gratitude to the Faculty and Staff members of the Department of Environmental Science at Tezpur University for their facilitation and provision of essential resources that greatly contributed to the completion of my research work.

I would like to acknowledge the Department of Environmental Science at Tezpur University for their financial support through UGC-NET JRF, as well as their technical assistance and provision of testing facilities, which were crucial for the successful execution of this project.

My sincere appreciation goes to Mr. D. P. Morwadun Maring, Mrs. Ksh. Radhamani Devi, Mr. N. Oken Singh, and Ms. Tedun Maring for their valuable companionship

## ACKNOWLEDGEMENTS

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during the fieldwork and sample collection. I express my deepest gratitude to the village heads and local people I encountered during my field survey for their sincere support and warm welcome. I must convey my sincere thanks to the local guides, Mr. Khamba Maring and Mr. Methew Maring, as their cooperation and assistance were indispensable in the field.

I also want to take this opportunity to express my special gratitude to my senior labmates, Dr. Jintu Sharma, Dr. Bidyut Sarania, and Dr. Shilpa Baidya. I am indebted to Dr. Shilpa Baidya for her unending help and support during this journey as a friend and a guide and to Dr. Jintu Sharma for his kind assistance in species identification and guidance. I would also like to extend my special thanks to Ms. Munmi Borah for her help in conducting the antimicrobial assay in her lab, Mr. Subham Mandal for his invaluable assistance with the experiment on photosynthesis rate, and Mr. Bijay Thakur for his contribution to generating maps using GIS. These acknowledgments would be incomplete without mentioning my fellow research labmates, Mr. Thingujam Manithoi Singh, Mr. Phurailatpam Surjit Sharma, Mr. Gisandu Malunguja, Mr. Prajnyan Sarma, and Mr. Bijay Thakur. It was a pleasure working with them, and I greatly appreciate their ideas, assistance, and good humour.

I am also grateful to my friends Ms. Bonita Loithongbam, Ms. Juri Chetia, Ms. Roto Yalyo, Ms. Shruti Talukdar, Ms. L. V. Makinei, Mr. Sahbaz Ahmed, Ms. Sharmistha Paul, Ms. Nijara Baruah, and other Research Scholars from the Department of Environmental Science at Tezpur University for their support during my Ph.D. journey.

My deepest appreciation goes to my husband, Dr. Tekcham Gishan Singh and my family members for their love, patience, understanding, unwavering support, constant guidance, and encouragement. I would like to express my heartfelt gratitude to my parents, Late Mayanglambam Krishnamohon Singh and Mrs. Ksh. Jamuna Devi, for always believing in me and motivating me to pursue my Ph.D. My love and dedication are extended to them as I dedicate this thesis. I am also thankful to my siblings for their unwavering love and support. Furthermore, I would like to express my sincere

## **ACKNOWLEDGEMENTS**

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thanks to all those whom I met during my research period but unconsciously omitted to mention their names. Finally, I offer my prayers to God for blessing me with good health, enabling me to complete my Ph.D. work, and for bringing a wonderful son, Tekcham Korounganba, into my life, who means the world to me.

Mayanglambam Bidyalakshmi Devi

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