

AGRO-ECOLOGICAL ZONING (AEZ) FOR  
HARUMANIS MANGO CULTIVATION IN PERLIS

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SCHOOL OF GEOMATICS SCIENCE AND NATURAL RESOURCES  
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**Thesis submitted to the Universiti Teknologi MARA Malaysia  
in partial fulfilment for the award of the degree of the  
Bachelor of Surveying Science and Geomatics (Honours)**

**JULY 2024**

## DECLARATION

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## **ABSTRACT**

Agroecological is a holistic and interdisciplinary approach to agriculture that incorporates ecological ideas and concepts into farming practices. The cultivation of Harumanis mangoes is renowned for their exquisite flavor and quality. The problem faces a range of sustainability challenges, including climate variability, and soil degradation. This research project aims to address these issues through an investigation of agro-ecological Harumanis mango cultivation in Perlis. The primary goal of this research is to identify physical and non-physical parameters required for agro-ecological zoning of Harumanis mango cultivation. Next, to analyze the topographic characteristics and soil suitability within the cultivation zone. Another goal for this study is to produce agro ecological zoning maps using spatial visualization. The early stages of this study, the research discovered ecological zoning parameters of the Perlis region, focusing on crucial elements such as soil suitability and topographical characteristics. This research makes use of a methodology that combines numerous data sources and spatial analytical tools. The data requirement for this research is ecological data, such as soil type, area of plantation, topographic characteristics, elevation and slope measurements. The most suitable places for Harumanis mango cultivation are at Bintong and Mata ayer, which are 56.76% and 52.38% fall at low limitation section. Furthermore, its policy implications and knowledge dissemination help to further efforts to promote sustainable agriculture and rural development in Perlis.

**Key words:** Harumanis mango, agro-ecological zoning, soil suitability, GIS

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