

**THE ESTABLISHMENT OF LAND SUITABILITY MAP FOR GRAPE
PLANTATION AREA BY USING AHP MULTI CRITERIA DECISION MAKING
APPROACH.**



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Contents

1.	Letter of Report Submission.....	1
2.	Letter of Offer (Research Grant)	2
3.	Acknowledgements	3
4.	Enhanced Research Title and Objectives	4
5.	Report	5
5.1	Proposed Executive Summary.....	5
5.2	Enhanced Executive Summary	6
5.3	Introduction	7
5.3.1	Aim and Objectives of Research	7
5.3.2	Study Area.....	7
5.4	Brief Literature Review.....	8
5.5	Methodology	9
5.5.1	Data Acquisition.....	9
5.5.2	Determination of Criteria	10
5.6	Results and Discussion.....	11
5.7	Conclusion and Recommendation	13
5.8	References/Bibliography	14
6	Research Outcomes	15
7	Appendix	16

2. Letter of Offer (Research Grant)

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Dengan segala hormatnya perkara di atas adalah dirujuk.

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"SELAMAT MENJALANKAN PENYELIDIKAN DENGAN JAYANYA"

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5. Report

5.1 Proposed Executive Summary

The proposed project is focus on understanding the suitable criteria for grape plantation and establishment of land suitability map of grape for new plantation area by using AHP (Analytical Hierarchy Process) approach.

Grape is one of the most important fruit crops of the world. It is also one of the most ancient crops known to people. Grape is also well known as one of the demanded fruits in Malaysia, expensive and exclusive fruits, because it hardly to be grown in tropical climate. Today, there are certain types of grapes that can be planted in Malaysia and it had been proved by the Perlis Department of Agriculture. Thus, there are also some of Malaysian citizen that bravely plants the grapes such as in Sendayan Valley and Beris. Nowadays many people become excited on planting the grapes. This research study is with intention to explore and determine the suitable criteria and area for grapes plantation in Perlis State. The analysis is made based on the agro-climatic, soil series and the location of land with co-relation to the road network and terrain condition. The analysis is done through the Geographic Information System (GIS) using AHP (Analytical Hierarchy Process) approach. The analysis tools that been use such as intersect, buffer zone and erase tools is used based on the criteria being chosen. Finally, the potentially grape plantation area map is generated and zone for suitable and marginal suitable for grapes plantation in Perlis State is presented. The results demonstrated that GIS driven by AHP (Analytical Hierarchy Process) multi criteria decision making approach was able to accurately generate potential grape plantation area map for the study area. Fundamental technical and methodological developments resulting from this research will have significant impacts upon the GIS community.

5.2 Enhanced Executive Summary

Grape is one of the demanded fruits in Malaysia. Grape is also well known as one of the expensive and exclusive fruits, because it hardly to be grown in tropical climate. Today, there are certain types of grapes that can be planted in Malaysia and it had been proved by the Perlis Department of Agriculture. Thus, there are also some of Malaysian citizen that bravely plants the grapes such as in Sendayan Valley and Beris. Nowadays many people become excited on planting the grapes. This research study is with intention to explore and determine the suitable criteria and area for grapes plantation in Perlis State. The analysis is made based on the agro-climatic, soil series and the location of land with co-relation to the road network and terrain condition. The analysis is done through the Geographic Information System (GIS) using AHP (Analytical Hierarchy Process) approach. The analysis tools that been use such as intersect, buffer zone and erase tools is used based on the criteria being chosen. Finally, the potentially grape plantation area map is generated and zone for suitable and marginal suitable for grapes plantation in Perlis State is presented. The results demonstrated that GIS driven by AHP (Analytical Hierarchy Process) multi criteria decision making approach was able to accurately generate potential grape plantation area map for the study area. Fundamental technical and methodological developments resulting from this research will have significant impacts upon the GIS community.