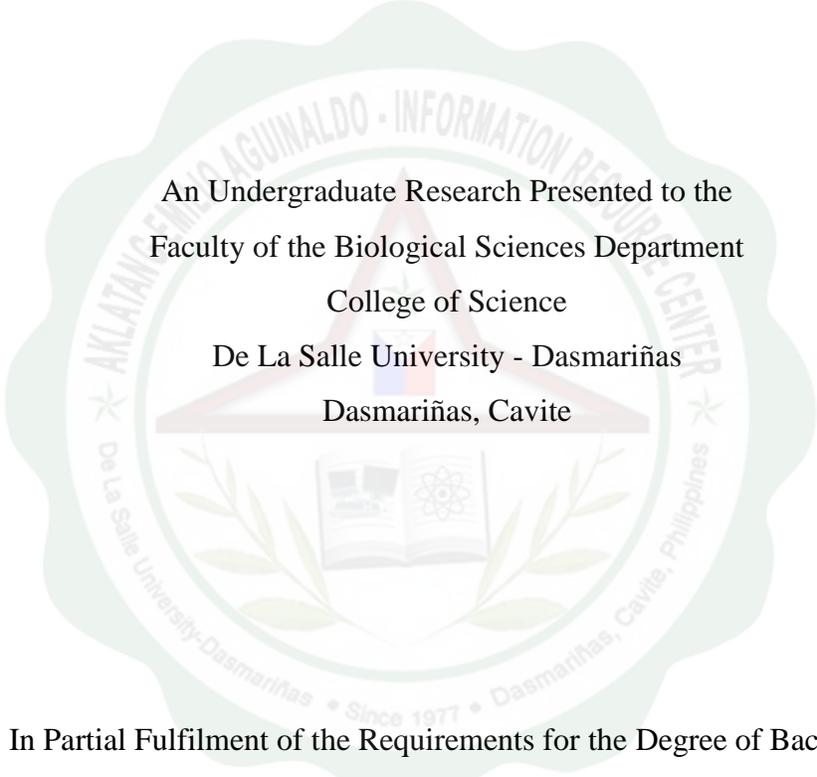




**ASSESSING THE AIR QUALITY OF AGUINALDO HIGHWAY BASED  
ON DUST ACCUMULATION, SPECIFIC LEAF AREA,  
AND STOMATAL CHARACTERISTICS OF  
*Lagerstroemia speciosa* L (BANABA) AND  
*Spathodea campanulata* (AFRICAN TULIP)**



An Undergraduate Research Presented to the  
Faculty of the Biological Sciences Department  
College of Science  
De La Salle University - Dasmariñas  
Dasmariñas, Cavite

In Partial Fulfilment of the Requirements for the Degree of Bachelor  
of Science Major in Human Biology

**MARITESS R. PINZON**

March 2012



### ABSTRACT

This study is about the investigation of the air quality if Highway within Dasmariñas, Cavite based on dust accumulation, specific leaf area, and stomatal characteristics. The study made use of the abundant ornamental plants found along the road sides namely; *Lagestroemia speciosa* L. (Banaba) and *Spathodea campanulata* Beauv. (African Tulip): Based on the result, the site where *L. speciosa* were located has more dust concentration during summer as interpreted on its dust accumulation and specific leaf area, whereas the site where *S. campanulata* has more dust concentration during rainy season. However, there are no significant differences on the stomatal behaviour in between seasons and species. The results were affected by the individual physiology of the leaf structures and nutrients per area.





## TABLE OF CONTENTS

Title Page	i
Approval Sheet	ii
Acknowledgments	iii
Abstract	iv
Table of Contents	v
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Background of the Study	1
1.2 Statement of the Problem	3
1.3 Scope and Limitations	3
1.4 Significance of the Study	4
1.5 Definition of Terms	5
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Conceptual Literature	6
2.2 Related Studies	11
<b>CHAPTER 3 METHODOLOGY</b>	
3.1 Research Design	17
3.2 Research Site	17
3.3 Research Setting	18
3.4 Research Procedure	18
3.5 Data Gathering and Statistical Analysis	20



CHAPTER 4 RESULTS AND DISCUSSION

4.1 Results 21

4.2 Discussion 25

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions 33

5.2 Recommendations 34

Cited References 35

Appendices

A. Map of the study site 39

B. Raw Data

Table I 40

Table II 41

Table III 42

Table IV 43

C. Photodocumentation

Plate 1 44

Plate 2 44

Plate 3 45

Plate 4 45

Plate 5 46

Plate 6 46

Plate 7 47



Plate 8	47
Plate 9	48
Plate 10	48
Plate 11	48
Curriculum Vitae	49





**LIST OF TABLES**

Table	Page
1 Mean dust deposition of <i>S. campanulata</i> during dry and wet seasons	21
2 Mean dust deposition of <i>L. speciosa</i> during dry and wet seasons	22
3 Summary of <i>S. campanulata</i> stomatal characteristics with respect to two different seasons	23
4 Summary of <i>L. speciosa</i> stomatal characteristics with respect to two different seasons	24
5 Characteristics of two plant species used as bioindicators in Aginaldo Highway, Dasmariñas City, Cavite	26



### LIST OF FIGURES

Figure		Page
1	Comparative summary of dust deposition variation within season and species	26
2	Comparative summary of SLA variation within season and species	28

