



**Analyzing the Influence of Automated Water  
Distribution Systems on Precision  
irrigation for Orchids  
A Case Study Using Dendrobium Phalaenopsis  
Orchid Group**

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I certify that I have read this thesis and that in my opinion, it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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# DECLARATION

This is to certify that the work is entirely my own and not that of any other person unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Sri Lanka Institute of Information Technology or any other institution for assessment for any other purpose.

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# **ABSTRACT**

## **Analyzing the Influence of Automated Water Distribution Systems on Precision irrigation for Orchids A Case Study Using Dendrobium Phalaenopsis Orchid Group**

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MSc. in Information Technology

**Supervisor:** Ms. Suranjini Silva

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This research seeks to establish the efficiency of an automated water treatment of the Dendrobium Phalaenopsis orchids using remote monitoring and controlling through a dash- board in Audino Cloud. Soil moisture, temperature and humidity levels in the terrain are Other environment factors monitored and the application controls water discharge in response to the results. Water is only added once the soil moisture level gets to a low level of 30 percent as to avoid unnecessarily using water. The system Water Use Efficiency was 60 to 95 percent, thus the system was good at maintaining the moisture level without wasting much water. Temperature ranged from 22-28 and humidity ranged from 40-95 percent affected water demand but the system took into consideration the soil moisture values. It operated correspondingly under principles of precision irrigation that is they provided water where it was needed and when it was needed. , which might be added in the future to the algorithm parameters, include temperature and humidity, as well as predictions of possible changes to environmental climates for even greater water savings. Through the results, it is noticed the prospect for automation supply systems to reestablish the cultivation practices of orchids, having special concern with the rational use of resources and sustainability in the agricultural activity.

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