

**EXTENDING THE STORAGE LIFE OF
MUKUNUWENNA (*Alternanthera sesilis*) IN SIMULATED AIR FREIGHT
TRANSPORTATION SYSTEM**

A PROJECT REPORT PRESENTED BY

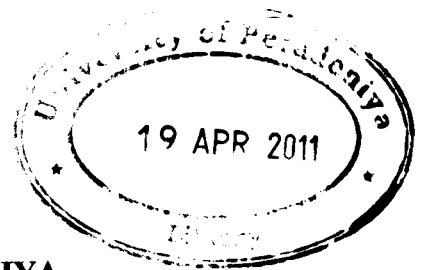
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**To the Board of Study in Plant Science of the
POSTGRADUATE INSTITUTE OF SCIENCE**

*In partial fulfillment of the requirement
for the award of the degree of*

**MASTER OF SCIENCE IN POSTHARVEST TECHNOLOGY OF FRUITS AND
VEGETABLES**

of the



UNIVERSITY OF PERADENIYA

SRI LANKA

2010

641604

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Abstract

Mukunuwenna has a high market potential in the export market and it is exported to United Kingdom, Italy and Dubai. Although there is a high export demand for mukunuwenna, it is difficult to export due to leaf yellowing, wilting and defoliation. Therefore the demand cannot supply due to these practical problems. Experiments were therefore conducted to find out the effect of harvesting time of the day, method of packing and pre-cooling method on maintaining quality of mukunuwenna during simulated air-freight condition. These treatments were laid out as three factor factorial design to find out the effect of these factors. Leaf yellowing, leaf defoliation, leaf diseases, visual quality rating, ethylene production and chlorophyll degradation were recorded as parameters. Data recorded using indexes were analyzed using Kruskal Wallis test and other remaining parameters were analyzed using ANOVA.

Mukunuwenna harvested in the afternoon had better quality than those harvested in the morning as far as all quality parameters are concerned. Of the treatments tested time of harvesting of the day had the highest effect and afternoon harvested had better quality. Vertically placed mukunuwenna was capable of maintaining their quality than those placed horizontally. Although pre-cooling had positive effect on maintaining quality room cooling was better than forced air cooling. Based on those observations mukunuwenna harvested in the afternoon, pre-cooled using room cooling and placing them in EPS boxes in vertically was able to maintain their quality for five days. These data was confirmed by visual parameters and some physiological parameters such as chlorophyll degradation and ethylene production. Mukunuwenna air freighted with refrigeration sources had better quality than those exported without refrigeration sources.