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SOME FACTORS AFFECTING THE POSTHARVEST LONGEVITY
OF
BLUE WATER LILY (*Nymphaea* sp.) FLOWERS

A PROJECT REPORT PRESENTED BY

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FLOWERS**

ABSTRACT

Floriculture is one of most demanding industries in the world at present. Demand for the cut flowers for different purposes is increasing day by day even in Sri Lanka. Flowers use in Sri Lankan cut flower industry is mostly based on the flowers which grow in the cold climate and which are not native to Sri Lanka. It is very rarely that the native and aquatic flowers are used in the present Sri Lankan floriculture market.

Aim of this study is to identify some factors affecting the postharvest longevity of Blue water lily *Nymphaea* sp. with a view to utilize it effectively in the Sri Lankan cut flower industry.

Investigations carried out to understand the blooming behaviour to identify different maturity stages and postharvest quality of Blue water lily flowers. Seven maturity stages were identified of Blue water lily (*Nymphaea* sp.) based on the whorls of stamens and the nature of stigmatic surface of the flower. Blooming behaviour of the flowers is similar under natural habitat and *ex-situ* (laboratory). Maturity stage 2 and 3 were identified to have the longest vase life with most attractive features (petal colour, corolla diameter, nature of stamens).

Effect of ethylene gas on postharvest longevity of *Nymphaea* sp. cut flowers was studied. Post harvest ethylene production rate of maturity stages 2-6 were measured using gas chromatography. Effect of exogenous ethylene on flowers was studied by exposing maturity stages 2 and 3 to 1ppm ethylene.

Effect of ethylene antagonists, silverthiosulphate (STS) and 1- methyl cyclopropene (1-MCP) was tested. STS (0.01mM) and 1-MCP (10ppm) was applied as pulse treatments for 1 hour and 3 hours respectively. Maturity stage 2 flowers produced the highest amount of ethylene on the day of harvest. However there was no consistent pattern of ethylene production by flowers of each maturity stages. Exogenous ethylene had no effect on the vase life of Blue water lily flowers. Also, ethylene antagonists, STS or 1-MCP also had no effect on postharvest longevity of cut flowers, but did reduce the maximum corolla diameter.

By selecting the proper maturity at harvest, Blue water lily (*Nymphaea* sp.) could be used as a cut flower effectively.