

**Control of biological clock of flower petal movement in *Nymphaea stellata***

Cut flower production is a fast growing agro industry in Sri Lanka and this research was based on promoting water lilies as cut flowers. Potentials of *Nymphaea spp* as cut flowers are many. However, main limitation exist in arresting its versatile use is closure of flowers in the evening. Therefore its use for arrangement at such occasions is limited. These movements are stimulated by diurnal environmental variations and continue according to an endogenous rhythm, which is termed as biological clock. Thus the objective of this research was to identify phenomena of flower closure and control it, where by to keep flowers open even at night. The main species used in this study was *Nymphaea stellata*- blue variety (National flower of Sri Lanka).

First attempt made was to identify the effect of a growth regulator, in which 0,0.5,2,5 and 10 mg/l levels of GA<sub>3</sub> BAP, ABA and ethylene were tested. GA<sub>3</sub> and BAP showed a remarkable effect on petal movement, whereas ABA and ethylene did not show any

significant effect. Flowers continuously dipped in GA 25mg/l were open for 29 hrs from the time of treatment and BAP<sub>5</sub>mg/l was able to keep flowers open for 16 hrs. Dipping in GA 100mg/l solution for one hour and transferring to water was also successful.

Chemicals such as ethanol, AgNO<sub>3</sub> and salt were also experimented. Dipping for one hour in salt (925g/l) was the most effective and it cost less than all other treatments. This kept flowers open for 14-16 hours.

In addition it was observed that a distinct variation in stamens and stigma occur during the days, in which a flower is open.