

1-METHYLCYCLOPROPENE (1MCP) ON THE VASE-LIFE AND FLORAL OPENING OF CUT *NIL MANEL* (*Nymphaea nouchali*) FLOWERS

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Nymphaea nouchali Burm.f. (*Nil Manel*) is an aquatic plant and, closely limited with religious, cultural and ornamental reasons in Sri Lanka as a cut flower. However, the short vase-life and opening abnormalities challenge the existence of *Nil Manel* in the floriculture industry. 1MCP (Methylcyclopropene) is used to avert negative effects of ethylene in many floricultural crops. An experiment was conducted to determine the effect of 1MCP on cut *Nil Manel* flowers, with the objective of finding optimum 1MCP concentration and time duration on the vase-life and floral opening. The experiment was arranged in a Completely Randomized Design with four 1MCP concentration levels (0, 0.2, 0.75, 1.00 ppm) and two time durations (14 or 24 hr). Flower stalks were re-cut and flowers were treated with 1MCP under ambient temperature. All units were separately sealed in polythene chambers. All the treatments including non-treated flowers used as the control were dipped in 200ml distilled water. The total anthocyanin and sugar contents were estimated using standard laboratory methods and rates of fresh weight loss were taken for three days. Fungal attack and sepal discoloration were recorded after six days. The vase-life, a color index and an opening index were recorded every day. The data were analyzed using factorial ANOVA, Chisquare test, KruskalWallies test and log linear models. The effect of 1MCP on vase-life ($p < 0.035$) and anthocyanin content ($p < 0.0001$) showed a significant difference but the sugar content, opening index, color index, fungal attack, fresh weight loss rate, and sepal discoloration were not significant. Rapid accumulation of anthocyanin in petals was observed towards the end of vase-life. However, pretreatment of 1MCP 0.2 ppm for 14 hr flowers showed lower amount anthocyanin accumulation in later stages. Proposed method could advance the vase-life by additional two days compare to the control.

Keywords: 1-MCP, Cut *Nil Manel*, Floral opening, Vase-life