Physiological response of gladiolus flowers to anti-ethylene treatments and their relation to senescence

Hassan F.A.S. and Ali E.

Abstract:

In order to study the physiological response of gladiolus flowers to anti-ethylene treatments, the effects of 1-methylcyclopropene (1-MCP) or silver thiosulphate (STS) on the postharvest quality of gladiolus cut flowers were investigated. 1-MCP was used at 0.2, 0.3 or 0.4 g m-3 for 6 hand STS was applied at 0.2 or 0.4 mM for 6 h. The control spikes were kept in distilled water. 1-MCP or STS treatments significantly extended the vase life and minimized the weight loss of gladiolus spikes compared with the control. Both treatments enhanced the relative water content (RWC) of leaves and maintained chlorophyll and carbohydrate contents compared with the control values, which were decreased. Ethylene production was increased in florets of untreated spikes and membrane stability was reduced while 1-MCP or STS treatments minimized ethylene production and retained membrane stability. An increase in floret antioxidant enzyme activities (CAT, SOD and POX) was observed in 1-MCP or STS treated spikes compared with the control. The effects of 1-MCP or STS on floret senescence seemed not entirely limited to their effects on ethylene, but they most likely had a sustainable impact on the above tested physiological parameters. - See more at: http://journalijar.com/article/2829/physiological-response-of-gladiolus-flowers-to-anti-ethylene-treatments-and-their--relation-to-senescence/#sthash.gTw4hdFR.dpuf

Keywords:

Gladiolus-Longevity-Ethylene - 1-MCP - STS -Antioxidant enzyme activity

Published In:

International Journal of Advanced Research (IJAR) , 2- 10 , 88-199