World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:16, No:11, 2022

Ethylene Sensitivity in Orchids and Its Control Using 1-MCP: A Review

Authors : Parviz Almasi

Abstract : Ethylene is produced as a gaseous growth regulator in all plants and their constructive parts such as roots, stems, leaves, flowers and fruits. It is considered a multifunctional phytohormone that regulates both growths including flowering, fruit ripening, inhibition of root growth, and senescence such as senescence of leaves and flowers and etc. In addition, exposure to external ethylene is caused some changes that are often undesirable and harmful. Some flowers are more sensitive to others and when exposed to ethylene; their aging process is hastened. 1-MCP is an exogenous and endogenous ethylene action inhibitor, which binds to the ethylene receptors in the plants and prevents ethylene-dependent reactions. The binding affinity of 1- MCP for the receptors is about 10 times more than ethylene. Hence, 1-MCP can be a potential candidate for controlling of ethylene injury in horticultural crops. This review integrates knowledge of ethylene biosynthesis in the plants and also a mode of action of 1-MCP in preventing of ethylene injury.

Keywords : ethylene injury, biosynthesis, ethylene sensitivity, 1-MCP
Conference Title : ICH 2022 : International Conference on Horticulture
Conference Location : Tokyo, Japan
Conference Dates : November 10-11, 2022