

Title Effect of 1-Methyl cyclopropene (1-MCP) on shelf life and quality of tomato fruits (*Lycopersicon esculentum* L.)

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Keyword 1-MCP; shelf life; tomato fruits

Abstract

The investigation was carried out to find out the efficacy of 1-MCP, a ethylene inhibitor on the shelf life and quality of freshly harvested tomato fruits at Department of Horticulture, UAS, GKVK, Bangalore during Feb-March 2008. The study on the effect of 1-MCP (Cel fresh) at the rate of 1 tablet (0.18%) / 1 m³ and 1 tablet / 2 m³ on the storage life of tomato fruits stored up to 12 days under room condition revealed the delayed red color development and ripening, retained higher fruit firmness, reduced the acidity loss of tomato (US-516 hybrid) fruits harvested at breaker stage of maturity and extended the storage life up to 12 days at room temperature (24-27 C and 30-43% RH) compared to untreated control fruit. The sensory evaluation of tomato fruits revealed better appearance, texture, taste and overall acceptability of Cel fresh treated fruits than untreated control fruits. The treatment of fruits at higher concentration of 1-MCP (1 tablet / 1 m³) exposure for 12 hours was more efficient and better in delaying the ripening and retaining higher fruit firmness resulting in better quality and higher overall acceptability as revealed by sensory evaluation of room temperature stored tomato fruits. Cultivar, developmental stage, time from harvest to treatment and multiple application are main factors to be concerned prior to use of 1-MCP. Its reaction is predictable and reliable to farmers to extend shelf life and to extend storage period to maintain quality of the fresh produce. Currently it is used in developed countries and it is necessary to produce simple, cost effective and simple device to transfer this tool to developing countries.