

**Presentation title:** The physiological response of 1-Methylcycloprope in maintaining postharvest life and quality of tomato fruit is improved by the presence of ascorbic acid

**Corresponding Author name:** Syariful Mubarok

**Affiliation:** Universitas Padjadjaran, Indonesia

**Ph. No:** +628112281510

**Email ID's:** [syariful.mubarok@unpad.ac.id](mailto:syariful.mubarok@unpad.ac.id)

**WhatsApp No:** +628112281510

**Any alternative number:** -

**Other Authors if any:** Kusumiyati, Anne Nuraini, Jajang Sauman Hamdani, Nolahdi Wicaksana, Haris Imron, Rahmat Budiarto, Lilis Sugiarti



**Presentation type:** Oral presentation

**Abstract:** Ethylene become a major problem in tomato fruit deterioration. Several strategies are using to inhibit ethylene effect in horticultural products, such as by 1-MCP and AsA application. Mostly 1-MCP and AsA are used as individual treatment to extend the fruit shelf life and maintain the quality of horticultural products. In this study, we elucidate the influences of the combination effect of 1-MCP and AsA on the postharvest fruit shelf life and quality of tomato. 1-MCP at 0, 1, and 2  $\mu\text{L L}^{-1}$  combined with AsA at 0, 2 and 4 % was treated to Br + 4 of tomato fruit. The fruit shelf life, fruit firmness, color, weight loss and the compositions of metabolic compounds, including sugars, chlorophyll, lycopene,  $\beta$ -carotene, total polyphenol, flavanoid and DPPH scavenging activity over 21 d of postharvest storage have been evaluated. Combination of 1-MCP 2  $\mu\text{L L}^{-1}$  + AsA 4 % significantly improved tomato fruit shelf-life 6 d longer than control (without 1-MCP and AsA), whereas the individual treatment of 1-MCP improved only 4 d longer than control. However, these treatment affect in the reduction sugars, lycopene,  $\beta$ -carotene, total polyphenol, flavanoid and DPPH scavenging activity at 21 d of storage. These results indicate that the effectiveness of 1-MCP in improving fruit shelf-life and quality of tomato was improved by the combination with AsA.

#### **Biography:**

Syariful Mubarok, Ph.D., is an Associate Professor in the Laboratory of Horticulture, Department of Agronomy, Faculty of Agriculture, Universitas Padjadjaran, Indonesia. He graduated from the Doctoral Program of Bioresource Science and Technology, at the University of Tsukuba, Japan. He has expertise in the Physiology of Horticulture Crops by experimenting regarding the improving plant productivity and postharvest quality with an approach to the hormonal or plant growth regulator system, such as generating new ethylene insensitive tomato mutant, NIL-Sletr1-2, and developing a new strategy to maintaining fruit shelf life and postharvest quality of horticulture crops by using non-toxic chemical compound, 1-Methylcyclopropene with the combination with other compounds such as ascorbic acid and edible coating. Moreover, several experiments have been conducted on other crops, such as leavy ornamental plants, orchids, potatoes, and strawberries. Besides the experiment, he is teaching and supervising bachelor, master, and doctoral students and also doing community services in West Java, Indonesia.