

#### Abstract:

Long shelf-life tomatoes (*Lycopersicon xesculentum* 'Thomas') at pink stage of maturity, were treated with 1-MCP at 0 (control), 85 or 800 ppb ( $\text{nl}\cdot\text{L}^{-1}$ ) for 20.5 h at 20 °C, and then stored at 20 °C for 12 d in polypropylene macroperforated bags. The harvest at this stage of maturity is common for exporting to UK markets. The goal of the work was to study the extent of the delay in ripening events due to 1-MCP treatment during non-refrigerated storage. Control fruit were too soft after 10 d of storage, while chroma increased irrespective of the treatment used. Treatment with 800 ppb 1-MCP delayed changes in the juice pH and coloration (recorded as Hue angle), as well as in firmness measured with either a penetrometer or a durometer. Both high and low 1-MCP concentrations reduced the rate of normal ripening as measured by increased pH and decreased titratable acidity. The effect of 1-MCP on soluble solids was not significant. Skin color change was delayed even by the lower 1-MCP concentration, but other quality parameters within the fruit were affected to a lesser extent. This different effect reveals some barrier to 1-MCP gas diffusion or activity within tomato tissue, and higher 1-MCP concentrations closer to  $1 \mu\text{l}\cdot\text{L}^{-1}$  maybe needed to have a stronger effect on delaying more ripening responses. 1-MCP-treated fruit developed decay after 10 or 12 d at 20 °C, but untreated fruit did not.