Efficacy of Different Concentration of Calcium Chloride on Post-harvest Quality of Tomato (*Solanum Lycopersicum* L)

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Abstract

This study was conducted to find the suitable concentration of calcium chloride treatments to prolong the shelf life and quality of tomato. The experiment was carried out in Horticulture laboratory of National Agriculture research council (NARC), Tarahara Sunsari during 2022 February 16 to March 11 using CRD design with 7 different types of treatments viz. T1= CaCl2 0.5%, T2= CaCl2 1%, T3= CaCl2 1.5%, T4= CaCl2 2%, T5= CaCl2 2.5% T6= CaCl2 3% and T7=Control(distilled water) replicated three times at the ambient room temperature 20±2 oC and RH of 60±2 %.The parameter recorded were physiological loss in weight (PLW), juice content (JC), total soluble solid (TSS), Acidity (A) and pH in every 2 days interval up to 16th days. The data was analyzed by using rstatix software and significant difference was calculated at 1% significance level. Among the different concentrated CaCl2 treatment used in the laboratory condition T7 showed highest percentage of weight loss (16.83%), highest total soluble solid (5.77 0brix), lowest Acidity (0.56%), highest pH (4.32) and lowest juice recovery (15.9%) as compared to other treatments. Calcium Chloride at 3% concentration was found as the most effective in reducing the physiological loss in weight (12.65%), highest acidity (0.72%), lowest pH (4.27), lowest TSS (5.13 0brix) and highest juice recovery (22.64%). It was observed that tomatoes treated with calcium chloride had an extended shelf life and quality for 16th days than those left untreated (control).

Keywords: Calcium chloride, post-harvest, tomato, concentration, horticulture