

EFFECT OF FOLIAR APPLICATION OF CALCIUM NITRATE AND POTASSIUM CHLORIDE FOR QUALITY OF HYBRID TOMATO FRUIT

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Production of quality fruits is a challenging task for tomato farmers. Therefore, this research was conducted to study the effect of foliar application of calcium nitrate and potassium chloride for the quality of hybrid tomato fruit under controlled conditions. The study was conducted in a completely randomized design with six treatments and four replicates. The treatments were no fertilizer (T1), Department of Agriculture (DOA) new recommendation NPK + organic matter (OM) (T2), DOA new recommendation NPK + OM + 1% $\text{Ca}(\text{NO}_3)_2$ (T3), DOA new recommendation NPK + OM + 1% KCl (T4), DOA new recommendation NPK + OM + 1% $\text{Ca}(\text{NO}_3)_2$ + 1% KCl (T5), DOA current recommendation + OM (T6). Foliar application was started at 50% of the flowering stage. Fruits at the second harvest were tested for fruit quality parameters (fruit weight, fruit volume, total acidity percentage (TA%), pulp weight, and juice weight) and plants were regularly observed for growth parameters (plant height, number of flowers, root length, shoot dry weight, and root dry weight). The number of fruits and average yield were tested as yield parameters. Statistical analysis was done using RStudio software. The mean separation was done by LSD test. As fruit quality parameters, the highest average volume of fruit (42.5 cm^3) and the highest average pulp weight (24.85 g) were recorded in T5 ($p < 0.05$). The highest average TA% (0.59%), highest average single fruit weight (50.02 g) and highest average juice weight (28.75 g) were recorded in T3 ($p < 0.05$). The highest average number of fruits (11) and highest average yield per plant (247.55 g) were recorded in T5. Growth parameters did not significantly vary ($p > 0.05$) among the treatments. Therefore, T5 could be suggested for hybrid tomato production to obtain a higher yield with good quality. However, further studies are required to test this under field conditions before recommending for farmers.

Keywords: Fruit quality, Fruit quality parameters, Growth parameters