

INFLUENCE OF FOLIAR APPLICATION OF ZINC SULPHATE AND CALCIUM NITRATE ON THE PHYSICO-CHEMICAL PARAMETERS OF LOQUAT (*Eriobotrya japonica* Lindl.) FRUITS cv. IMPROVED GOLDEN YELLOW DURING STORAGE

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ABSTRACT

An experiment was conducted during 2004-05 at Kanpur to study the influence of foliar application of zinc sulphate and calcium nitrate on physico-chemical characters during storage of loquat (*Eriobotrya japonica* Lindl.) fruits cv. Improved Golden Yellow. Physiological loss in weight of fruit and pulp, per cent loss in volume and titratable acidity were minimized, whereas, the T.S.S. was noted maximum when foliar spray of calcium nitrate 1.0% with zinc sulphate 0.5% was applied. The same treatment proved effective in improving in the storability of the fruits.

Key words : Loquat, zinc sulphate, calcium nitrate,
physico-chemical traits, storability.

The loquat (*Eriobotrya japonica* Lindl.) is an evergreen fruit crop belonging to the family *Rosaceae* grown in the subtropical regions. This fruit has various uses such as for making jam, jelly, juice, preserve and for desert purpose. Although it is widely adaptable yet its cultivation in our country is non commercialized owing to poor quality and storability of fruits. Among various micro-nutrients calcium and zinc treatments have been found to influence physico-chemical traits of different fruits (Babu and Singh, 2001). Long storage life along with improved fruit quality are needed for enriching human diet and increasing availability for internal as well as external trade. The present investigation was, therefore undertaken to study the influence of foliar application of zinc sulphate and calcium nitrate on physico-chemical characters during storage of loquat fruits cv. Improved Golden Yellow.

MATERIALS AND METHODS

Twenty year old loquat trees of Improved Golden Yellow cultivar uniform in growth and vigour growing in Horticulture Garden of C.S. Azad University of Agriculture & Technology, Kanpur were selected for the present study. Zinc sulphate 0.5% (T_1), calcium nitrate 0.5% (T_2), 1.0% (T_3), 1.5% (T_4), T_1+T_2 (T_5), T_1+T_3 (T_6) and T_1+T_4 (T_7) along with control (T_0) were sprayed at

full bloom and pre harvest stage. The fruits collected at edible maturity from different pre harvest spray of treatments were utilized for recording post harvest changes at the time of harvest (P_0), 2 days after storage (P_1), 4 days after storage (P_2) and 6 days after storage (P_3). Observations were recorded for physiological loss in weight of fruit and pulp, per cent loss in fruit volume, titratable acidity (as per A.O.A.C., 1990) and total soluble solids (T.S.S.) at different storage period.

RESULTS AND DISCUSSION

All the foliar spray treatments significantly reduced the physiological loss in the weight of loquat fruits as compared to control during storage. Calcium nitrate at 1.0% combined with zinc sulphate at 0.5% (T_6) showed the lowest weight loss (4.75%) followed by calcium nitrate (1.0%) alone (T_3), while the fruits under control showed the highest loss in weight (7.59%). The minimum loss (3.55%) was noted after 2 days of storage (P_1), while the maximum loss (14.42%) was observed under P_3 (6 days after storage). The interactive effect between calcium nitrate (1.0%) with 2 days of storage caused minimum physiological loss. Similar effect of calcium nitrate has been reported by Singh *et al.* (1982) in peach. Relatively lower loss caused by calcium nitrate treatment might be attributed to the role of calcium on limiting respiration which might have ultimately altered membrane permeability minimizing the physiological loss in weight (Bangerth, 1979).