Conservation of rosebuds cultivar 'Osiana' by soaking in sodium hypochlorite solution

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Abstract

In order to increase the flower postharvest durability various kinds of preservatives are available. Sodium hypochlorite, which has a bactericidal effect purifies water and may suppress bacterial growth in the conducting vessels. Also, preservative solutions help the water uptake, increasing flower longevity. Thus, the objective of this study was to evaluate the effect of sodium hypochlorite on postharvest longevity of rose cultivar 'Osiana' by complete immersion in the solution. The floral stems were selected with the flower buds still closed, and open sepals. The stalks were standardized to 50 cm in length and soaked in sodium hypochlorite at concentrations of 0, 50, 250, 500, 750 and 1000 µL/L. After the submersion the stems were placed in a vase filled with water and kept at room temperature until the end of the experiment. The rate of bud opening, water absorption, flower diameter and longevity expressed by the number of days between the experiment set up and occurrence of petal necrosis and loss of turgidity were determined. The highest concentration sodium hypochlorite caused burning on the edges of petals reducing the quality and causing premature senescence. The treatment with 50 µl/L sodium hypochlorite provided a greater number of days with flowers fully opened, without damage or loss of bud turgor. Also, the water absorption was higher at this concentration, indicating less obstruction of xylem. The longevity of the flowers treated with 50 µl/L was 12 days, while for control stems this was 6 days. Therefore, the immersion of flower stems into sodium hypochlorite solution at concentration of 50 µl/L promoted durability and maintenance of quality in rose flowers.