**Title** Effects of nanosilver and calcium chloride on cut gerbera (*Gerbera Jamesonii* Cv. 'Carambole') flowers

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**Abstract**

Nanosilvers which are very fine particles of silver are used in many areas. One of the most important properties of these particles is their antibacterial properties and can be used in the agricultural industry. The purpose of this study was to evaluate the effects ofnanosilver, calcium chloride and their combination on gerbera 'Carambole' flowers. The experiment consisted of six treatments, 5 mgllit nanosilver, 1% calcium chloride, 2% calcium chloride, 5 mg/lit nanosilver + 1 % calcium chloride, 5 mg/lit nanosilver + 2% calcium chloride and control treatment. Overall results showed that foliar application of $CaCl_2$ and using nanosilver in vase solution and also their combination could significantly increase gerbera flowers vase life. The longest postharvest life of flowers was obtained from 5 mg/lit nanosilver and 5mg/lit nanosilver + 1 % calcium chloride treatments. Foliar application of 2% $CaCl_2$ prevented flowers wilting but petals showed signs of necrosis. Also in comparison with other treatments, relative solution uptake was very low in control treatment. The highest relative solution uptake were observed in 5 mg/lit nanosilver, 5 mg/lit nanosilver + 1% $CaCl_2$ and 5 mg/lit nanosilver + 2% $CaCl_2$ treatments. Additionally application of nanosilver and $CaCl_2$ increased relative fresh weight so that the highest rate were obtained in 5 mg/lit nanosilver, 5 mg/lit nanosilver + 1% $CaCl_2$ and 5 mgllit nanosilver +2% $CaCl_2$, respectively. Application of $CaCl_2$ could increase postharvest life, relative solution uptake and relative fresh weight of flowers but this increase was less than 5 mg/lit nanosilver, 5 mgllit nanosilver + 1% $CaCl_2$ and 5 mg/lit nanosilver +2% $CaCl_2$ Also invitro cultivation and microscopic counting showed that growth of microorganisms at the end of flowering stems were largely restricted using nanosilver solely or in combination with $CaCl_2$**.**