

**Title** Effect of lanthane on quality of tulip flower 'Ile De France'

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#### **Abstract**

The aim of this research was to evaluate the effect of lanthane ( $\text{La}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$ ) applied through fertigation on quality of tulip flower 'Ile de France'. Five levels of lanthane (5, 10, 20, 30 and 40  $\mu\text{M}$ ) were evaluated in comparison to a nutrient solution without lanthane, used as a control. Length of flower stem, diameter and length of flower bud, diameter of flower stem in three positions (basal, medium and upper) were evaluated. No significant differences for length of flower stem were observed; however, this variable was increased by the addition of 30 and 40  $\mu\text{M}$  of lanthane by 2.5 and 5%, respectively, in comparison to the control. Diameter and length of flowers showed significant differences ( $p < 0.05$ ) and in both cases the highest value was obtained with the supply of 10  $\mu\text{M}$  of lanthane. The basal and upper stem diameters were not influenced by treatments. Although no significant differences among treatments were found, plants treated with nutrient solutions containing 10  $\mu\text{M}$  lanthane showed medium stem diameters 2% bigger than the control plants. Results suggest that lanthane may improve some qualitative traits in tulip flowers when added at low concentrations in the nutrient solution, though more detailed studies are needed.