Title Gibberellic acid on quality of ornamental cut kale

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Abstract

Ornamental kale is a minor crop in Brazil usually used as bedding and potted plant. Cut foliage kale has potential as a new product for the Brazilian ornamental market. However, ornamental cut kale cultivars are not available in Brazil, and for cut purposes the stems need to be long and straight. This study evaluated the effect of gibberellic acid (GA_3) on quality aspects of 'Nagoya Rose' grown for cut purpose (i.e. stem length and straightness, stem diameter, leaf colour). 'Nagoya Rose' is a dwarf hybrid available at the Brazilian market, with less cold requirement for induction of colouration in the center rosette leaves. The experiment was conducted in greenhouse in a complete randomized design with four replications and five treatments (0, 125, 250, 500 and 1000 mg L^{-1} of GA_3 plus 0.01% of surfactant Silwet®). Gibberelic acid was applied 47 days after transplanting plugs to 11 L pots, as a single foliar spray (50 ml/plant) plus stem tip application with a medicinal syringe (20 ml/plant). GA_3 at 1000 mg L^{-1} significantly increased cut stem length (41.54 cm) compared to control (4.27 cm). Although foliage total diameter showed a negative linear response to increasing concentration of GA_3, the diameter of the coloured center foliage of plants treated with GA_3 was significantly larger compared to untreated plants. Control rose leaves had a reduced L* measured compared to plants treated with 1000 mg L^{-1} of GA_3 ($L^*_{(control)}$ = 45.75 and $L^*_{(1000\ mg\ L^{-1}\ of\ GA3)}$ = 50.27), and plants showed a significantly positive linear response to increasing GA_3 concentrations. The chroma of GA_3-treated rose leaves did not differ significantly from untreated control plants.