

## Morpho-physiological and quality attributes of gerbera (*Gerbera jamesonii*) cut flower under inoculated substrate with arbuscular mycorrhizal fungi in soilless system

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### Abstract

This study was arranged to evaluate the effects of perlite-cocofibre substrate inoculation as the most prevalent media in gerbera soilless cultivation with two important arbuscular mycorrhizal fungi (AMF: *Glomus intradices* and *Glomus mossea*) on morphological, physiological and quality attributes of gerbera cut flower. Results showed the positive symbiosis between AMF and gerbera ('Stanza'), and consequently significant effects on morphological parameters such as leaf and flower number per plant, plant dry weight and physiological and biochemical parameters including stomatal conductance, photosynthetic pigments, antioxidant enzymes activity, soluble sugar and proline content. Also, flower quality indices including flowering-stem height, flower diameter and flower vase life were significantly affected by symbiosis of AMF. Based on the comparison of the means, except proline content and soluble sugars, the effects of both AMF species were similar on the measured parameters. As compared to control plants (without inoculation), substrate inoculated with both *Glomus mossea* and *Glomus intradices* showed 16.33% and 19.09% more flowers were harvested per plant (yield) and 4 days higher flower longevity, respectively. Based on the results, inoculation of growth media with AMF had positive symbiosis effects and consequently, led to remarkable increasing of growth, yield and quality. Accordingly, application of AMF in soilless culture and especially supplemental experiments to assess nutrient use efficiency to achieve balanced nutrient and optimum using of mineral fertilizers in soilless systems could be recommend.

**Keywords:** Stanza, Symbiosis, Substrate, Postharvest quality, Yield, Antioxidant enzymes.

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