

Effect of vitamin E for preventing *Leucospermum* leaf dissection during transportation

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Leucospermum plants are commercialized with complex immature floral structures that would normally be rapidly growing and strong sinks for nutrient influx. The source/sink properties of *Leucospermum* plants clearly do change during different developmental stage and are very critical to the optimal development of the whole plants during post-production stage. During storage and transport, *Leucospermum* flowering potted plants are often damaged and the quality compromised. In fact, these post-production stages are usually characterized by sub-optimal environmental conditions (in particular the temperature and the light) leading to impair the photosynthetic machinery and activating a progressive leaf desiccation disorder.

The post-production performance of ornamental potted plants can be preserved using optimal environmental conditions and additionally by applying appropriate chemical preservative treatments. In the present study was established the effects of double pre-transport/post-transport applications of chitosan and vitamin E on quality and physiological traits of *Leucospermum* potted flowering plants during the recovery phase. Plants were stored in growth chamber at 14 °C with 70–80% relative humidity in the dark for four days to simulate transport conditions. Subsequently, plants were transferred in greenhouse for recovery ability evaluation under natural environmental conditions. Flowering potted plants were treated twice with 100 µM vitamin E and chitosan, the first was performed the day before the simulation of transportation and the second ones were carried out as soon as the plants arrived to the greenhouse of retails. The experiment was carried on by including two different controls: non-treated plants-not exposed to the transport simulation, and non-treated plants-subjected to the transport simulation. The findings of this experiment show that vitamin E applications have a positive effect on postproduction quality in *Leucospermum*, even a better performance compared to the non-transported control plants. The effect of vitamin E is mainly due to the antioxidant ability and the preservation of membrane stability. In contrast, the use of chitosan coating by the application of an invisible sprayed-film throughout the whole plants accelerated the leaf desiccation disorder during the same recovery period.

Keywords: Post-production, ornamental quality, chitosan, gas exchanges analysis, chlorophyll a fluorescence, ethylene