

Salinity Tolerance of *Dracaena sanderiana* Sander Characterized by the Chlorophyll Fluorescence Transient Analysis Technique

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Dracaena sanderiana Sander is a popular and in-demand cut foliage in the global ornamental industry. It is important to know the performances of these plants under saline conditions as there is a demand for salt tolerance ornamental plants for poolside landscaping due to the high chlorine content in the pool water. This study was conducted to examine the growth performances of 3 varieties of *D. sanderiana* ('Gold', 'White', and 'Victory') under different salinity levels (0, 20, 40, 60, and 80 mmol NaCl) for 10 weeks. Chlorophyll fluorescence (ChlF) transient analysis was used to understand the photosynthetic performances of plants. The ChlF data were collected through OJIP analysis using a portable fluorometer (Fluor Pen, FP 110). Electrical conductivity (EC) of the substrate, relative electrolytic leakage (REL) of roots, shoots, and leaves, total chlorophyll content, and root: shoot ratio (dry weight basis) were measured. EC has increased with increasing NaCl concentrations indicating the salt buildup in the substrate. There was no significant difference in the performance index (PI) which is derived from absorption per reaction center (ABS/RC), maximum quantum yield of primary photochemistry (ϕPo), and electron transport efficiency (ϕEo) of the ChlF transient analysis, within the different salinity levels in variety 'White' and 'Victory'. Variety 'Gold' showed a reduction in PI in high salt concentrations indicating its sensitivity to high saline conditions (60 and 80 mmol). Highest REL was observed in roots, followed by shoots and leaves that explains the protection of leaves from salt stress. We suggest that *D. sanderiana* can be used for poolside landscaping as evidenced by ChlF transient analysis.

Keywords: Chlorophyll fluorescence, *Dracaena sanderiana*, OJIP test, Photosynthesis, Salinity tolerance

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