

Title            Inhibition of water uptake after dry storage of cut flowers: Role of aspired air and wound-induced processes in *Chrysanthemum*

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### **Abstract**

We investigated the relative role of aspired air and a plant-induced reaction in the vascular occlusion of dry-stored cv. Cassa chrysanthemum flowers (*Chrysanthemum × morifolium* Ramat). Measurements of hydraulic capacity showed that the air that is aspired directly after cutting (into the opened xylem conduits) was solely responsible for the blockage that developed during the first 1–2 h after cutting. The obstruction to water flow was not reversed when the flowering stems were placed in water, unless the water was degassed. Holding the cut stems or stem segments dry for a period longer than 2 h resulted in an additional decrease of hydraulic capacity, which was not reversed by placing the stems in degassed water. This blockage was still present in stem segments from which air was removed by vacuum infiltration. The second blockage became more serious upon increasing the length of the dry period. It was prevented by a pulse treatment of the cut stems with tropolone, shortly after harvest, suggesting that it was due to an enzymatic reaction in the stems. Taken together with previous data, it is concluded that the relative role of aspired air and a plant-induced process depends on the cultivar and on the pre-harvest growth conditions of the plants.