

DETERGENTS INCREASE THE VASE LIFE OF CUT SUNFLOWERS (*Helianthus annuus* L.)

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Cut sunflowers have become a popular minor cut flower in the U.S., but suffer from poor vase life as the flowers may open poorly and leaves tend to wilt and discolor within 3 to 5 days of harvest. Furthermore, leaf desiccation seems to be accelerated by dry storage and transport so that flowers transported dry for more than 24 hours often have very short vase lives.

In an effort to alleviate this problem, we pulsed cut sunflowers with a non-ionic detergent, Triton X-100. Treatment of cut roses, Chrysanthemum and Gypsophila with non-ionic detergents has proved so successful that a pre-treatment with the detergent Agral LN is not mandatory in the Dutch auction system for these flowers.

In our trials, cut sunflowers were pulsed with solutions containing between 0.01 and 0.10%

Triton X-100 for 30,60 or 180 minutes before simulated transport (3 days dry storage at 8C). Longest vase life was achieved with a 1 h pulse with 0.01% Triton X-100. The pre-storage Triton pulse worked in three ways: by increasing solution uptake during the 1 h pulse, minimizing weight loss during the dry storage period, and significantly improving the uptake of water after dry storage, resulting in greater leaf turgidity and longer vase life.

Sunflower could be stored (or transported) at 8C (46F) for up to 7 days after a pulse in Triton X-100 without a significant decline in vase life (Figure 1). It is also possible to keep sunflowers at lower temperatures than 8C. It is not beneficial to place sunflowers in a detergent solution for more than 3 hours, as this results in leaf damage and reduced vase life.

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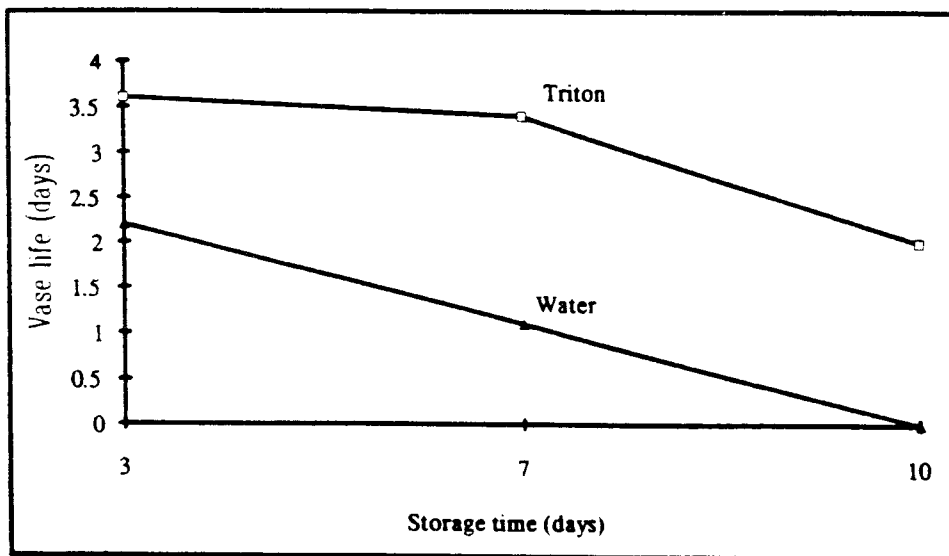


Figure 1. Changes in vase life of cut sunflowers after dry storage at 8°C (46°F) for 3, 7 or 10 days. Stems were pulsed before storage with : A) distilled water or B) 0.01% Triton X-100.

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