

**Title** Retail display conditions of continuous light and dark on the disposition of vitamins in baby spinach

**Author** Gene Lester, Don Makus and D. Mark Hodges

**Citation** Abstracts Book, 6<sup>th</sup> International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

**Keyword** Spinach; vitamin; storage

### **Abstract**

Human-health benefits from the consumption of fruits and vegetables are due to the many bioactive compounds in these foods. Many of these compounds are heavily influenced by genetics (i.e. cultivar) and the environment, especially the many pigments and vitamins that can degrade during processing and storage. Retail marketing conditions today allow for produce to receive continuous light 24-hours per day during its displayed shelf-life. Essential human-health vitamins (ascorbic acid- vit. C, folate - vit. B9, phyloquinone-vit. K1, and carotenoids lutein and b-carotene-provit. A) also are required for photosynthesis and are activated by light conditions even under refrigerated storage. Spinach leaves, notably abundant in the aforementioned human-health vitamins, were harvested at peak plant maturity from flat-leaf and crinkled-leaves cultivars as baby-leaf and larger leaves; then placed in commercial, clear-polymer retail boxes and stored at 4°C for up to 9 day under continuous light or dark. Baby-leaf spinach stored under continuous light had significant higher levels of vitamins and carotenoid compounds, but were prone wilting especially the flat-leaf cultivar. This recent study on spinach leaves exposed to continuous light or dark during simulated retail marketing display and the resultant affect on essential human-health vitamins contents and market quality will be resented and discussed.