Stabilizing the Quality of Harvested Produce through the Introduction of Light and Dark Cycles, Year Two

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Fruits and Vegetables have a circadian clock (physiological process for all living beings). It is believed this cycle continues after being picked. This investigation is the second phase in determining if it is possible to continue the circadian clock by exposing the produce to light and dark cycles (12 hours light /12 dark) in order to maintain or improve the nutritional value. Fresh produce was chosen from the brassica (vegetable) and rosacea (fruit) family. Produce was juiced, weighed, measured on the Brix scale, and the pH was obtained. 18 (3 of each type) samples of the produce were placed in a light/dark environment and 18 samples in a dark environment. Produce was placed in the refrigerator for a period up to 11 days. All produce was post-tested. Average change for fruit: Brix scale: Light/dark was +0.84 and dark was -0.76. Moisture as measured by weight: Light/dark exposure was -0.89 and dark was -0.28. pH: Light/dark change was -0.09 as dark was -0.34. Average change for vegetables; Brix scale: Light/dark was -0.83 and dark was -1.22. Moisture as measured by weight: light/dark average change was -10 as dark and - 0.27. pH: light/dark was -0.67 and dark was -0.88. In fruits and vegetables brix scale increased more on average for light/dark samples. In fruits and vegetables all samples lost moisture but more so in light/dark samples. All produce on average became more acidic in both environments.Results were inconsistent and light/dark cycles did not prove to increase nutritional value.

Awards Won: