

Title	Degradation of almond pellicle color coordinates at different storage temperatures
Author	Craig A. Ledbetter and Debra E. Palmquist
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### **Abstract**

The pellicle or seed coat of almond kernels is subject to darkening during long-term storage and may affect the marketability of the stored product. Environmental conditions during storage and genetic factors both affect the extent of darkening during the storage period. The degree of pellicle color change of five distinct almond accessions was examined during long-term storage at 2, 22 and 32 °C. Pellicle luminosity, chroma and hue angle were measured on 12 dates throughout an 11-month storage period. An ANCOVA was used, with storage temperature being a covariate, to examine the relative differences in luminosity, chroma and hue angle during the storage progression. A comparison of weighted simple linear regression equations was used to distinguish between different rates of pellicle color coordinate degradation during the storage period. When averaged across the three storage temperatures, almond accession Padre consistently had significantly lower pellicle luminosity and chroma values throughout the storage period as compared with the other four almond accessions ( $p \leq 0.05$ ). While pellicle hue angle values of Padre were significantly lower than those of Nonpareil at the start of the test ( $p \leq 0.05$ ), Nonpareil's pellicle hue angles were significantly lower than those of Padre at the end of the storage period ( $p \leq 0.05$ ). Almond accession Nonpareil had the largest percentage decrease of the five almond accessions for pellicle luminosity (36.9%) and hue angle (12.5%). Regression analysis revealed significant differences in degradation rates of pellicle luminosity and chroma at all three storage temperatures ( $p \leq 0.05$ ), but significant differences in pellicle hue angle degradation were only evident at the lowest storage temperature ( $p \leq 0.05$ ).