

Title Response of different packaging materials and chemicals on the shelf life of strawberry (*Fragaria ananassa* Duch.) and correlation between different traits

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Abstract

Strawberry loses its market viability within a short period of time. Its shelf life can only be increased by scientific post harvest handling including eco friendly packaging materials and chemical treatments. Packaging materials minimize respiration and handling damage and enhance the freshness and quality of the fruit. For this Laboratory experiment was conducted at Horticulture Department, Allahabad Agricultural Institute-Deemed University, Allahabad during 2005-06 to study the response of different packaging materials and chemicals on the shelf life of strawberry. Experiment was laid out in Completely Randomized Block Design with eight treatments (control-open ambient condition), wrapping with newspaper alone, newspaper + 2% CaCO₃, newspaper + 2% CaCl₂, newspaper + 2% Ca(NO₃)₂, high density polyethylene (HDPE), low density polyethylene (LDPE), polypropylene bags with three replications. Observations were recorded every day. Data revealed that minimum weight loss (16.06 g to 14.75 g) of fruit was associated with newspaper + 2% Ca(NO₃)₂. Highest specific gravity (1.11 at 5th day) was observed in LDPE. Total soluble solids of fruits on the 3rd day of storage was recorded highest (9.17°Brix) and gradually it decreased. Minimum average loss of ascorbic acid was found with HDPE. Sugar content in strawberry gradually increased in all treatments further, it decreases in control. Maximum sugar content (10.10%) was found in newspaper + Ca(NO₃)₂. Minimum pH (3.94) was found in newspaper + 2% CaCl₂. The highest cost benefit ratio (1:3.55) was calculated with newspaper + 2% Ca(NO₃)₂ followed by newspaper + 2% CaCl₂, both were statistically at par. Correlation study revealed that total weight loss was positively and significantly correlated with specific gravity, TSS, ascorbic acid. Specific gravity was positively and significantly correlated with total titrable acidity and total ascorbic acid. Total soluble solid was significantly and positively correlated with total sugar and total ascorbic acid. Total sugar was positively correlated with ascorbic acid.