

Cherry Experiment: Rinse With Perasan®

Purpose:

To observe the effect of rinsing cherries with different strengths of Perasan® 15% PAA and the impact on the long-term storage.

The cherries were separated into four groups. Each group (100 each) was rinsed with a different concentration of 15% Perasan® (PAA). The concentrations used were 10, 80, and 130 ppm as active PAA, and the final control group was only rinsed with tap water. Each group was rinsed for one minute with 500 ml tap water in Ziploc bags, including the control. A sample was taken from the rinse water of each group and plated for yeast and mold using 3M PetriFilm. After the cherries were rinsed, they were stored in a dry Ziploc bag and placed in the refrigerator for a shelf life study. The results of the yeast and mold are illustrated in the below chart:

Date Plated	Enumerated	Group	Yeast Counts/mL	Mold Counts/mL
1/11/2007	1/18/2007	Control	3	18
1/11/2007	1/18/2007	10ppm	1	39
1/11/2007	1/18/2007	80ppm	0	0
1/11/2007	1/18/2007	130ppm	0	0

Microbiological Comments:

Yeast and mold were present on the cherries in the control group. This outcome was expected. The results indicate that washing the cherries with 10 ppm Perasan was not sufficient to kill either the yeast or mold during one minute exposure, but washing with any concentration at or above 80 ppm was satisfactory. A subsequent shelf life study was conducted for all four groups. The cherries were refrigerated and checked periodically over **two months**. The results of the two-month shelf life study (along with observations and photos) are described in detail below:

Visible Observations Control group: Cherries rinsed with tap water

Brown liquid was present in the bag where the cherries were stored, indicating the growth of yeast. A few of the cherries that had split had mold present in the cracks. The consistency of the cherries was very soft with a mild smell of fermentation.



FIGURE 1: In the picture above four cherries were selected from the control group to illustrate the aged appearance of untreated cherries after two months. Some cherries split open, others had developed rotten areas, and many cherries appeared unchanged.

Visual Observations: Cherries rinsed with 10 ppm Perasan

Brown liquid was present in the bag where the cherries were stored, indicating the growth of yeast. Four cherries had cracked and it appeared visually that yeast had grown inside the crack. Mold was not visible, but the prior microbiological test results indicate it was present. The consistency of the cherries was just as soft as the control group.



FIGURE 2: This picture illustrates a representative sample of the cherries rinsed with 10 ppm Perasan. The discoloration in the cherries represents soft, rotting areas.

Visual Observations: Cherries rinsed with 80 ppm Perasan

Brown liquid was present in the bag where the cherries were stored, indicating the growth of yeast. Four cherries had cracked and it appeared visually that yeast had grown inside the crack. Mold was not visible, but the prior microbiological test results indicate it was present. The consistency of the cherries was just as soft as the control group.

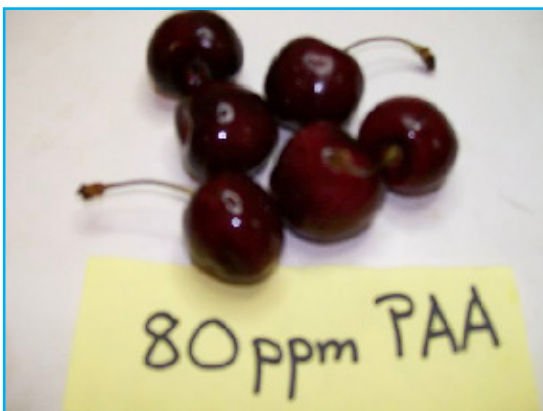


FIGURE 3: Illustrated in this picture is the absence of the normal aged appearance of cherries. The skin is undamaged and the coloring has not been affected.

Visible Observation: Cherries rinsed with 130 ppm Perasan

There is no brown liquid visible inside the storage bag. The skin of the cherries appears wrinkled and dehydrated. There was only visible yeast and mold growing on one cherry.

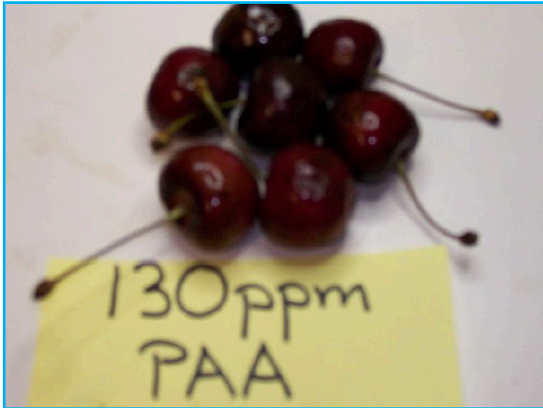


FIGURE 4: The skins of the cherries in this picture are wrinkled, indicating that rinsing with 130 ppm Perasan was too strong and damaged skin of the cherries over time.

Conclusion:

The test results indicate rinsing cherries with 80 ppm Perasan was successful in eliminating yeast and mold. The visual observations indicate that 80 ppm Perasan was an adequate concentration to use for rinsing. The yeast and mold had been eliminated after rinsing, and over time the color and firmness had not been affected.

COURTNEY MESROBIAN

Enviro Tech

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