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EFFECT OF LONG TERM STORAGE ON RABBITEYE BLUEBERRY QUALITY

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INTRODUCTION

Blueberries are usually sold as soon after harvest as possible for maximum quality and shelf life. However, it is possible to store fruit for a relatively long time under exacting conditions. There may be a market niche for fresh blueberries in September and October to a limited extent. The objective of this study was to develop simple methods that can be used for maintaining fresh market quality of berries for 2 to 4 months.

MATERIALS AND METHODS

Tifblue fruit were hand picked and sorted to remove culls on 14 July 1989. Fruit were weighed into 10 oz lots. Treatments consisted of fungicide or no fungicide drench prior to packaging. The fungicide was a mixture of Benlate (1/2 lb/100 gal) and Botran (2 2/3 lbs/100 gal) commonly used on fruit. Fruit were submerged only long enough to insure complete coverage of all fruit (approximately 2 seconds). The fruit were air dried after the fungicide drench. Fruit were packaged in either zip-sealed plastic bags or rigid plastic, sealed freezer containers and stored for either 2 or 4 months at 29°F with four replications per treatment.

RESULTS AND DISCUSSION

All treatments resulted in acceptable to high quality fruit after 2 months of storage (table 1). Fungicide treatment inhibited mold growth and fruit skin degradation or leaky fruit after 4 months of storage. Zip-sealed plastic bags inhibited mold growth with the long term storage, but did not prevent development of leaky fruit. Flavor and appearance deteriorated to unmarketable levels for all treatments between 2 and 4 months. Percent weight loss was negligible over time, with only up to 3.1% moisture loss after 4 months. However, fruit sealed in the rigid plastic containers had greater weight loss, 2.4 to 3.1%, as compared to the zip-sealed bags with 1.9 to 2.4%.

The purpose of the experiment was to extend the storage of fresh fruit as long as possible. Of interest is the fact that, even without fungicides rabbiteye blueberry

fruit can be stored for extended periods of time if two criteria are met. The temperature must be maintained just below freezing and water loss avoided. These data indicate that blueberries can be stored for up to two months with only minor loss in quality if the temperature is maintained between 29 and 32°F and if they are sealed in a container to prevent moisture loss. Due to the sugar content of the fruit storage at 29°F does not freeze the fruit. The low temperature slows respiration to prevent weight loss. Only high quality, defect free fruit are suitable for long term storage. Further studies are planned to determine the shelf life of stored fruit so that the fruit may be sold through fresh market channels.

Table 1. Effect of long term storage on fruit quality.

Fungicide Drench	Container type	Mold (%)		Leak (%)		Flavor ^z (1-5)		Appearance ^y (1- 5)		Weight Loss (%)	
		2 mon	4 mon	2 mon	4 mon	2 mon	4 mon	2 mon	4 mon	2 mon	4 mon
Yes	zip seal bag	0.0	3.0	0.5	5.5	3.75	2.0	4.0	3.5	0.0	1.9
Yes	rigid plastic container	0.0	1.5	1.0	5.0	3.5	3.63	3.75	3.88	2.1	2.4
No	zip seal bag	0.0	2.5	2.5	25.5	4.25	1.75	4.0	2.0	0.5	2.4
No	rigid plastic container	1.0	20.0	4.0	17.5	4.25	1.88	4.5	2.0	2.3	3.1

^z1 = inedible, 5 = excellent

^y1 = not saleable, 5 = saleable, freshly picked look