

Title Effects of freezing methods and storage temperatures on the flesh firmness of jujube fruits
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Abstract

Jujube fruit (*Ziziphus jujuba* Mill.) is rich in ascorbic acid. However, due to its perishable nature, it cannot be stored for a long period under ambient conditions. Freezing the fresh jujube fruit is one solution to solve the problem, but decrease in flesh firmness of the frozen fruit after thawing is the major factor which affects the consumers' acceptability of the frozen fruits. A preliminary study was conducted to determine the effects of freezing methods and storage temperature on the fruit firmness. Fresh jujube fruits ('Dongzao') were frozen in cold air chamber and in a low-temperature liquid media, respectively. The frozen fruits were stored in freezers at -32 and -22°C. Results showed that liquid frozen fruits after thawing retained 88% of the fresh fruit firmness, while those frozen in cold air chamber had only 43% of the fresh fruit firmness. The firmness of the jujube fruits frozen in the low-temperature liquid media decreased 15 and 30% after 210 days storage at -32 and -22°C respectively. It was concluded that long-term storage of jujube fruits can be realized by properly freezing the nutrition-rich fruits in low-temperature liquid media and keeping the frozen fruits under temperature below -22°C.