

IMPACT OF PRETREATMENTS ON THE SHELF-LIFE OF PAPAYA JAM

Pretreatments before processing are generally applied to inactive enzymes, remove odd flavour or taste, stabilize colour and texture and reduce microbial or insect load. This note reports the influence of pretreatments on shelf-life qualities of papaya jam.

Ripe, but firm fruits were sorted for quality and prepared for further processing. Four treatments were attempted in this work. In blanching, the fruit pieces were treated with boiling water for 1-3 minutes. In sulphating, the fruit pieces were immersed in 1% sulphur dioxide solution, while in exposure to sulphur fumes fruit pieces were exposed to fumes of burning sulphur (3 g per kg of fruits) for 30 minutes each. Citric acid dip was achieved by immersing in 5% citric acid solution for 30 minutes.

Shelf-life qualities such as acidity (AOAC, 1960), pH (Renganna, 1978), reducing sugar (AOAC, 1960) overall acceptability (Renganna, 1978) and microbial population were ascertained every month during one year storage at two different temperatures-ambient and refrigerator conditions. Analysis of the data revealed a significant influence of pretreatments on shelf-life qualities. An increase in acidity with a corresponding fall in pH was

observed in all the samples. Pretreatment with chemicals especially with sulphur compounds gave a good structure and longer shelf-life to the product.

Data on reducing sugar indicated a significant change in association with pretreatments. Variation in reducing sugar may be due to the acid hydrolysis of sucrose. Similar results were reported by Kulwal *et al.* (1985) in papaya products. The data on overall acceptability indicated that pretreatment with blanching and sulphur fumes increased the acceptability by improving the taste, colour and appearance of samples compared with other samples. The samples showed a slight fall in acceptability with storage.

The microbial load and shelf-life of the product indicated that all samples in refrigerator had a shelf-life of more than one year and they were free from microbial attack. However, the samples kept at ambient condition showed variations in shelf-life. Samples processed from fruits exposed to sulphur fumes had a longer shelf-life (10 months) followed by product processed from sulphated fruits and citric acid dip (8 months). Jam from blanched fruits had a long shelf-life (6 months) than control (5 months).

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