EFFECT OF ANTIBROWNING AGENT AND BLANCHING TREATMENT DURING DRYING OF GUAVA (*PSIDIUM GUAJAVA*,L., VARIETY KAMPUCHEA)

By

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ABSTRACT

EFFECT OF ANTIBROWNING AGENT AND BLANCHING TREATMENT DURING DRYING OF GUAVA (*PSIDIUM GUAJAVA*,L., VARIETY KAMPUCHEA).

This project was carried out to determine the effect of different anti browning agents on enzymatic browning at high temperature short time (HTST) thermal blanching. The effects of two anti-browning agents, sodium metabisulphite and ascorbic acid at 50 ppm and 100 ppm, subjected to hot water and steam blanching for 4 minutes was studied.

Our result showed that sodium metabisulphite is the better anti browning agent in preventing enzymatic browning in guava tissue. Sodium metabisulphite treated samples are lighter in color as compared to ascorbic acid treated samples. Hot water and steam blanched samples both record positive values. The lightest was 50 ppm sodium metabisulphite (3.68). The final moisture content of the samples treated with steam blanching was higher than those treated with hot water blanching. The highest moisture content was recorded by sample 100 ppm sodium metabisulphite (46.66 %) and the lowest by sample 50 ppm sodium metabisulphite (42.24 %).

Polyphenol oxidase activity was inactivated by both water and steam blanching after 4 minutes. This result indicated that the samples were adequately treated to inactivate the enzyme in the guava tissue.The highest Vitamin C content was found in samples that underwent the steam blanching process. The result also showed that sample treated with sodium metabisulphite retained higher vitamin C content compared for ascorbic acid. The highest value of Vitamin C was recorded by sample 100 ppm sodium metabisulphite (66.13 mg/100 g) followed by 50 ppm sodium metabisulphite (63.92 mg/ 100 g). The Vitamin C content for 100 ppm and 50 ppm were 52.68mg/100 g and 47.67mg/100g, respectively.

Steam blanching retained higher sugar content of green mature guava. Steam blanched samples recorded a sugar content of 12.06 °Brix, close to that of raw mature guava (12.13 °Brix). Hot water blanching resulted in higher sugar loss, recording only 10.53 °Brix.Blanching treatment cause changes in guava texture. The highest value was recorded in hot water blanched sample treated with 50 ppm ascorbic acid (59.92 IRHD). The softest texture was recorded by steam blanched sample treated with 100 ppm ascorbic acid (35.37 IRHD).

CHAPTER 1

INTRODUCTION

Guava the "poorman's fruit" or "apple of the tropics" is a popular tree fruit of the tropical and subtropical climates and is native to the tropical America stretching from Mexico to Peru. Despite its origin in tropical America, guava is presently cultivated in every tropical and subtropical country around the world (Samson, 1986). Although quite inexpensive in countries of its production, guava is a delicious fruit which is very nutritious and exceptionally rich in ascorbic acid and several minerals useful for the human health (Wilson, 1980). To those fruit lovers who become familiarized with its penetrating aroma, guava is considered as one of the most delectable and fascinating fruits (Menzel ,1985).

Besides its exceptionally high nutritive values, guava is also a prolific and regular bearer that could produce fruits year-round (Thonte and Chakrawar, 1982). Guava plants exceed the majority of tropical and subtropical fruit trees in adaptability, productivity, and tolerance to mild cold and light frosts. The guava is successfully cultivated in a wide range of environmental and edaphic conditions owing to its tolerance to moisture stress and soil salinity as compared to most of the warm climate fruit plants (Samson, 1986).Guava is important in international trade