EFFECTS OF BLANCHING ON THE QUALITY OF PINEAPPLE (*Ananas comosus*) AND CHANGES DURING STORAGE IN SYRUP

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ABSTRACT

EFFECTS OF BLANCHING ON THE QUALITY OF PINEAPPLE (*Ananas comosus*) AND CHANGES DURING STORAGE IN SYRUP

This study was conducted to determine the effect of traditional hot-water blanching on pineapples that are being processed for storage in syrup. Based on the result obtained, blanching treatments caused significant decrease in pH, total soluble solid, total plate count, ascorbic acid, total phenols, as well as colour for fresh, blanched and syrup pineapple. Two antioxidant analyses were also conducted which were Ferric Reducing Antioxidant Power (FRAP) and 2,2-diphenylpierylhydrazyl radical scavenging (DPPH). Results demonstrated that fresh pineapple has higher antioxidant activity in reducing ferric ion compared to pineapple that was blanched and stored in syrup solution. DPPH assay was carried out to determine the scavenging activity of free radical in pineapple and results showed that pineapple was not good free radicals scavenger since the value obtained were quite low. From this point of view, blanching indeed gave influence on the quality attributes of pineapple and physicochemical changes were also observed during storage in syrup.

TABLE OF CONTENTS

CHAPTER 2

LITERATURE REVIEW

2.1 Blanching

Blanching is a relatively mild treatment, aiming to inactivate enzymes that will cause a drop in the quality of the final product (Carranza-Concha *et al.*, 2010). During the blanching process, it is important that certain enzymes that have the potential to cause changes in taste and texture of inactivity. When the unbalanced tissue is disturbed or bruised and exposed to air, this enzyme comes in contact with the substrates, causing softening, discoloration, and the production of off-flavours. Since these actions could potentially occur during the period before heat processing, it is most often standard practice to blanch fruits to avoid deterioration of the quality (Barrett *et al.*, 2005).

Although the main purpose of blanching is enzyme inactivation, especially with preservation techniques such as freezing and dehydration, there are several benefits, first blanching cleans the products, reduces microbial load, and preheats the product before processing. Mild heat treatment also softens the fruit, which makes compact packing in cans. At the same time, intercellular gasses in raw fruits are removed, to prevent excessive pressure build up in the container and allow better heat transfer during thermal processing. Thus, higher vacuum can be achieved in the final product as well as the reduction in internal can corrosion (Barrett *et al.*, 2005).