

**OHMIC HEATING TECNOLOGY AND QUALITY
CHARACTRESTICS OF SOME FRUITS PULP**

By

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B.Sc. Agric. Sci. (Food Science), Fac. Agric., Cairo Univ., 2009

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APPROVAL SHEET

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ABSTRACT

The present work aimed to study the use of ohmic heating in the processing of mango, apple, apricot and strawberry pulp comparing to conventional method. Pulpes were processed by using ohmic heating under the studied suitable conditions. Physical, chemical and microbiological properties of pulpes were studied. The results showed that processing of all pulpes by using either ohmic heating or conventional method caused an increase in pH, 5-hydroxy methyl furfural (HMF) and electrical conductivity. Total soluble solids (TSS), total carbohydrates and total sugars (reducing and non-reducing sugars) in mango and apple pulp were increased while they were reduced in apricot and strawberry. Also an increase in phenolic compounds, ascorbic acid and carotenoids and a decrease in HMF has been observed in all pulpes processed by ohmic heating compared to that produced by conventional one. Total pectin and its fractions had slightly reduced by ohmic heating compared to conventional method. Results also showed that total plate count and mold and yeast were reduced by processing of all pulpes by using the two methods. However all ohmic heated pulpes showed a less total plate count and mold and yeast values after processing and during storage compared to that in conventional method. Coliform and thermophilic bacteria were completely inhibited by using both methods after processing and during storage. Enzymatic activities showed a reduction in poly phenoloxidase (PPO) and polygalacturonase (PG) activity in all pulpes processed by conventional method. However ohmic heating completely inhibited PPO and PG activities. An improvement in the organoleptic properties of all pulpes processed by ohmic heating compared to conventional process was noticed.

Key words: Ohmic heating, Mango pulp, Apple pulp, Apricot pulp, Strawberry pulp, Electric conductivity, Total phenolic compounds and Carotenoids.

DEDICATION

This thesis is dedicated to the most high god (Allah) my creator and savior, without whose grace, power and wisdom I would not have reached this height in my academic pursuit; and to my mom and dad, whose upbringing, love and support constantly sustained my early childhood, secondary and university education as well as to my brothers, sister (Ahmed, Abd El- Rahman and Shimaa) as well as my best friend Ahmed Ali for their love, kindness, constant encouragement and all the support they lovely offered along the period of my graduation.

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