

Arunya Prommakul. 2002. **Studies on Minimally Processed Mango (*Mangifera indica* L. cv. Namdokmai) Juice and Pulp.** Master of Science Thesis in Food Technology, Graduate School, Khon Kaen University. [ISBN 974-367-422-5]

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Abstract

Mango is a potential export fruit for Thailand. Minimally processed mango juice and pulp is fresh-like, high quality and nature tasting product and addition is able to value to the product which would benefit to farmers, exporters and processors.

Peroxy acetic acid was used at 0.2, 0.4, 0.6 and 0.8% concentration for 1, 2 and 3 minutes for cleaning mango surface. It was found that dipping mangoes in 0.4% peroxy acetic acid for 3 minutes can inhibit the growth of microorganism completely. Citric acid and ascorbic acid at the concentrations of 0.1, 0.2 and 0.3% were compared for their effect on mango pulp color. No significant difference ($p > 0.05$) between acid on color and it was found 0.3% gave the highest L-value. PectinexTM Ultra SP-L at 0.02, 0.04, 0.06, 0.08, 0.10 and 0.12% for 0, 15, 30, 45 and 60 minutes was used to hydrolyze pectin in mango flesh to make the extraction of mango juice easier. It was found that using enzyme at 0.02% for 45 minutes gave the highest decrease in mango viscosity. Hydraulic press, centrifuge separator and filter press were compared for their efficiency in juice extraction. Filter press produced juice of highest clarity. The temperature of 65, 70 and 75°C and the time of 1, 2 and 3 minutes were studied in the pasteurization mango juice. It was found that 75°C and 3 minutes produced juice with no peroxidase activity. The temperature of 70, 75 and 80°C and the time of 1, 2 and 3 minutes were studied in the pasteurization mango pulp. It was found that 80°C and 2 minutes produced pulp with no peroxidase activity. The pasteurized juice and pulp were then combined to produce a minimally processed single strength mango juice and pulp. Its physical, chemical and microbiological properties were studied. It was found that using increased surface area evaporator to concentrate mango juice at 15 lb/in² and 16 inHg for 25 minutes could concentrate juice 3.91 fold giving the final produce with 67.0 ± 1.41 °Brix. From these research findings procedures for the minimal processing of single strength mango juice and pulp and concentrated mango juice and pulp were developed.