Thesis Title Formulation and Processing Development of Oriental Pear Juice (*Pyrus pyriforia* var Pathanak)

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Abstract

The study of formulation and processing development of oriental pear juice (*Pyrus pyriforia* var Pathanak) found that pear juice prepared from 21 weeks (after of full bloom) pear stored at 1 °C for 1 week and ripened at 20-21 °C for 4-5 days gave higher significantly amount of reducing sugar and more preference than juice from fresh pear ($P < 0.05$). The best juice extraction in 8 methods which gave highest both yield and reducing sugar was : peeling in hot 20 % sodium hydroxide solution for 3 min, washed and rinse two times, neutralized in 1 % citric acid solution, then cut into 4 parts dipping in 1% ascorbic acid solution until ready for crushing but not more than two hours. During crushing, 0.08% (w/w) of ascorbic acid was added, and then 0.01% (w/w) of pectinase was added into pear puree, hold at 35 °C for 1 hr, and pressed by hydrualic press at 5 metrictons. The optimal formulation which had singnificant difference in preference for sweetness ($P < 0.05$) was 75% pear juice and 14 °Brix of total soluble solids adjusted by adding white sugar.

During storage pear juice at 21 and 37 °C showed that lightness (L value), total soluble solids, total titrable acidity, and after inversion reducing sugar were decreased, but yellowness (b^* value) , and pH were increased. Changing during storage at 37 °C was faster than at 21 °C. Redness (a^* value) , and before inversion reducing sugar changed uncertainly. Pear juice stored at 37 °C early period more turbidity than longer storage due to haze formation. Pear juice stored at 21 °C had more preference than storage at 37 °C. The result of storage at 37 °C was equal to 6 months shelf life of canned pear juice at ambient temperature.