THANEE TRAKULINTRA : EFFECT OF SODIUMHEXAMETAPHOSPHATE AND ETHYLENDIAMINE TETRAACETIC ACID ON PECTIN EXTRACTION FROM POMELO PEEL. THESIS ADVISOR : ASSIS.PROF. VANNA TULYATHAN, Ph.D. 106 PP. ISBN 974-577-452-9

The purpose of this study was to extract pectin from albedo of five varieties of pomelo peel. (Koawpan, Koawpoung, Koawjeeb, Thongdi and Khunnor It was found that the albedo of Koawpan pomelo peel gave the highest yield in term of pectin (dry weight) and Anhydrouronic acid (A.U.A.). The amount (ash, Methoxyl content (MeO.), Equivalent weight (Eq.Wt.) of pectin among th five varieties of pomelo peel were not significantly difference (p=0.05). T Koawpan variety was selected for further study on the effect of using sodiu hexametraphosphate (SHMP) and ethylendiaminetetraacetic acid (EDTA) as additive to increase the efficiency of pectin extraction.

The result showed that without SHMP or EDTA when pH was increased f 2.00 to 5.00 the yield of pectin decreased. pH and SHMP or EDTA concentratic had interaction effect on extraction. When pH and SHMP or EDTA concentratio was increased, yield of pectin also increased. From pH 2.00 to 4.00 the res indicated that deesterification (hydrogen ion catalysed) and depolymerizatic reactions decreased, thus Eq.Wt., MeO. as well as Jelly grade of pectin were increased. But at pH=5.00, Eq.Wt., MeO. were significantly decreased (p=0.0 It was anticipated that this effect was due to deesterification reaction but catalysed by hydroxy ion. pH had effect on ash content of pectin. Increase pH would increased the ash content. SHMP concentration had effect on the as content where as EDTA concentration showed no effect.

The optimum extracting condition of pectin with 3.0% SHMP at pH=4.0 was chosen to study the effect of albedo weight and acid solution (by volum ratio. It was showed that the ratios had effect on the amont of pectin an Jelly grade. Maximum yield of pectin was obtained at ratio 1:4. The ratio chosen had no effect on the ash content, A.U.A., MeO. and Eq.Wt. of pectin.

The effect of temperature and time on pectin extraction denoted th increasing time from 30 to 90 min. at room temperature increased the yiel of pectin, but had no effect on Jelly grade, Eq.Wt. and MeO. At highe temperature (80 °C), increasing time gave no effect on yield of pectin but decreased Jelly grade, Eq.Wt. and MeO. Time and temperature had effec on A.U.A. but gave no effect on ash content.