CHARACTERIZATION AND PURIFICATION OF PROTEASE EXTRACTED FROM "NONI" (*MORINDA CITRIFOLIA L.*) AT TWO MATURITY STAGES

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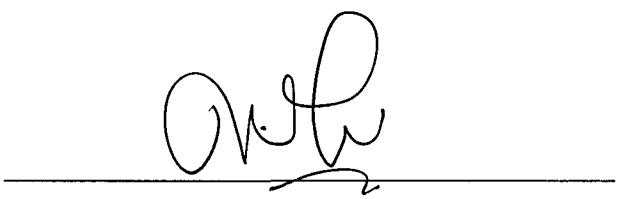

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TABLE OF CONTENTS

ABSTRACT

CHARACTERIZATION AND PURIFICATION OF PROTEASE EXTRACTED FROM "NONI" (*MORINDA CITRIFOLIA L.*) AT TWO MATURITY STAGES

Protease was extracted from two maturity stages of noni fruits (*Morinda citrifolia* L.), unripe (stage 1) and ripe (stage 5) and then purified using acetone precipitation, dialysis, gel filtration (Sephadex G-25) and freeze drying. Protease obtained from each of purification step was analysed for protein concentrations, proteolytic activity, yield and molecular weight distribution (SDS-PAGE). Freeze dried protease were analysed for pH stability, temperature stability and storage efficiency. Protein content in unripe (stage 1) noni fruit was higher than those in the ripe (stage 5) fruit. Protein concentration for protease for unripe (stage 1) noni fuit was higher for protease purified from crude extract until dialysis step. Molecular weight distribution of purified proteases for both stages was approximately at 3 to 28 kDa. The optimum activity of purified proteases was at pH 7 and 6 at 40 and 50 ^{O}C for unripe (stage 1) and ripe (stage 5) noni fruit respectively. Protease from noni fruit could be an alternative source of plant protease based on its high proteolytic activity and stability during storage.