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INVERTASE ACTIVITY IN COCONUT

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The tissues examined were the stalk connecting the inflorescence axis and the fruit; and the mesocarp connecting the stalk and eyes. These tissues were extracted with 0-2 M acetate buffer (pH 4.5) and fractionated by differential centrifugation at 4°C. Invertase activity was observed in the 900 g particulate fraction. The stalk and mesocarp tissues contained the same amounts of invertase activity (5.68 units/g fresh tissue). The

supernatant was free of invertase activity. The enzyme was solubilized using Triton X-100. 71% and 76% of the enzyme were solubilized at 0.1% and 0.5% (v/v) concentrations of Triton X-100. The products formed with time by the action of invertase on sucrose was linear over a period of 3 hours at 37°C. Initial velocity was directly proportional to enzyme concentration.

Mercaptoethanol ($1x10^{-3}$ M) increased the activity of invertase by 122%. This indicates the possibility of sulphydryl groups participating in the catalytic activity of the enzyme. The sulphydryl groups were formed through the reduction of disulphide bonds by mercaptoethanol.

The reducing sugars formed by the action of invertase were measured using dinitrosalicylic acid reagent. This reagent is also reduced by polyphenols. Mercaptoethanol added to enzyme preparation increased the reduction of dinitrosalicylic acid reagent quantitatively possibly by reducing the quinones present in the enzyme preparation to polyphenols. Quinones inhibit invertase. Hence the observed activation of invertase by mercaptoethanol could be due to the removal of inhibition of quinones and the restoration of the sulphydryl groups at the active site. The inhibition of invertase by EDTA suggests that it may be a metallo-enzyme.