E2-43: Inhibition of partially purified invertase from *Woodfordia fruticosa*

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In Sri Lanka, the principal sources of invertase enzyme at present are Bakers, Distillers and Brewers yeast. However, there is literature evidence to show that for the fermentation processes in the manufacture of Arishta (a drug used in Ayurveda), *Woodfordia fruticosa* (Malitta, Lythraceae) flowers are used as an invertase source. Present study is based on inhibition studies of partially purified invertase from *Woodfordia fruticosa.*

Flowers were sterilized by washing with distilled water and then with 5% H_2O_2(v/v) in distilled water for 1½h. Inoculum obtained from sterilized flowers was cultured in nutrient agar and potato dextrose agar at 36°C for 48h.

All operations were carried out at 2°C. Sterilized flowers (12g in citrate buffer, pH5, 50 mM) were ground with sand. The crude extract was centrifuged at 3000 rpm for 15 min at 1°C. The supernatant solution was fractionated by ammonium sulfate. The ammonium sulfate (90-100%) which showed the highest enzyme activity was purified by Sepharose 4B gel column and active fraction was used for the study. Enzyme activity was assayed by Nelson method.

Sucrose (10%, 2.00 ml), Inhibitor solution in water (0.5 - 5M, 0.50 ml), and enzyme fraction (0.50 ml) were used for each assay. The incubation was done for 10 min at room temperature.

According to this study, urea, fructose, mercury (II), N-bromosuccinimide and manganese (II) are inhibitors for the enzyme. Out of them, urea and fructose are competitive inhibitors and mercury (II) is non competitive inhibitor whereas N-bromosuccinimide and manganese (II) showed mixed inhibition (competitive and non competitive).