D-40: Isolation of bacteria producing extracellular α-galactosidase

M A Lokuge, C Deepal Mathew
(Dept of Biochemistry, Faculty of Medicine, Colombo 8)

α-galactosidase is used in the food industry to hydrolyse raffinose sugars which cause flatulence. Attempts have been made in medicine to use α-galactosidase for treatment of Fabry's disease. In this study, we isolated bacterial species that produce extracellular a-galactosidase by incubating soil in a culture medium containing raffinose as the sole source of carbon. Six species were isolated by morphological characteristics and detail studies on raffinose utilization and

enzyme production showed that raffinose utilization of these species varied from 11mg/h to 28 mg/h. Enzyme activity present in the supernatent varied from 11 milliunits/ml to 2 milliunits/ml. Three bacterial species having highest a-galactosidase activity were cultivated at different pH values and also using ammonium sulphate and peptone as the nitrogen source. It was shown thatextracellular a-galactosidase activity of 14 milliunits/ml could be obtained after 18 h cultivation at pH 8 with peptone as the nitrogen source. The production could be increased to 19 milliunits/ml by cultivation in pH 8 phosphate buffer using peptone as the nitrogen source.