

Screening of microorganisms

Cellulase activity: For the screening of CMCellulase production, the bacterial isolates were streaked on CMC agar medium (g/l) (peptic digest of animal tissue, 5.0; beef extract, 1.5; yeast extract, 1.5; sodium chloride, 5.0, agar, 15, CMCellulose, 10) and incubated at 37 °C for 48 h. After incubation, bacterial growth was seen as a single line on the plate. To visualize the hydrolysis zone, the plates were flooded with an aqueous solution of 0.1% Congo red for 15 min and washed with 1 M NaCl (Apun et al., 2000). To indicate the cellulase activity of the organisms, diameter of the clear zone around colonies on CMC agar was measured.

Amylase activity: Starch agar plates were prepared. Then a loop full of isolated cultures were streaked on starch agar plates and incubated at 37°C for 24 h. After incubation, individual plates were flooded with Gram's iodine (Gram's iodine - 250 mg iodine crystals added to 2.5 g potassium iodide solution, and 125 ml of water, stored at room temperature) to produce a deep blue coloured starch-iodine complex.

Protease activity: For assessing the protease activity, the bacterial strains were streaked on skim milk agar plates (g/l) (Peptic digest of animal tissue, 5.0; beef extract, 1.5; yeast extract, 1.5; sodium chloride, 5.0, agar, 15, skimmed milk, 10) and incubated at 25°C for 24 h for protease production. The milk contains casein which is broken down by protease into lower subunits. The cells producing protease would give a clear transparent zone around them in an otherwise opaque milk media.