ABSTRACT

The present study is concerned with the isolation and screening of *Mucor* species for the production of acid protease in shake flasks. Out of eight mould cultures screened, five were isolated from soil and three were provided from the Institute of Industrial Biotechnology, Government College University, Lahore. Of all the isolates tested, *Mucor pusillus* IHS_6 was found to be the best producer of rennin-like acid protease producing 53 U/ml of the enzyme. Optimum pH, temperature and fermentation period for the production of protease were 5.5 (58 U/ml), 30°C(56 U/ml) and 72 hrs (54 U/ml), respectively. Different agricultural byproducts were evaluated as fermentation substrates and maximum enzyme synthesis (61 U/ml) was obtained when rapeseed meal was used as a substrate. The production of protease by *Mucor pusillus* IHS_6 was also studied by adding different carbon and nitrogen sources to the fermentation medium. Fructose at a concentration of 1.5 % (66 U/ml) and yeast extract at a concentration of 2 % (68.2 U/ml) and ammonium chloride at a concentration of 0.1 % (69 U/ml) were found to be the best carbon and nitrogen (organic and inorganic) sources, respectively. Spore inoculum at a concentration of 1 % (69.5 U/ml) was found to be the best for protease production by *Mucor pusillus*. The fermentation broth was found to have strong milk clotting activity with 200 RU and was found very effective in cheese formation.