

Utilization of Agro-Industrial Byproducts for Bacteriocin Production Using Newly Isolated *Enterococcus faecium* BS13

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Abstract : Microbial production of antimicrobials as biopreservatives is the major area of focus nowadays due to increased interest of consumers towards natural and safe preservation of ready to eat food products. The agro-industrial byproduct based medium and optimized process conditions can contribute in economical production of bacteriocins. Keeping this in view, the present investigation was carried out on agro-industrial byproducts utilization for the production of bacteriocin using *Enterococcus faecium* BS13 isolated from local fermented food. Different agro-industrial byproduct based carbon sources (whey, potato starch liquor, kinnow peel, deoiledrice bran and molasses), nitrogen sources (soya okra, pea pod and corn steep liquor), metal ions and surfactants were tested for optimal bacteriocin production. The effect of various process parameters such as pH, temperature, inoculum level, agitation and time were also tested on bacteriocin production. The optimized medium containing whey, supplemented with 4%corn steep liquor and polysorbate-80 displayed maximum bacteriocin activity with 2% inoculum, at pH 6.5, temperature 40oC under shaking conditions (100 rpm).

Keywords : Bacteriocin, biopreservation, corn steep liquor, *Enterococcus faecium*, waste utilization, whey

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