

Optimisation of Growth Conditions of Probiotics (*L. acidophilus*) Encapsulated with Calcium Alginate Beads

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ABSTRACT

In the present study optimisation of growth conditions of *L. acidophilus* MTCC 10307 in alginate beads was carried out with regard to substrate (growth media constituents- sorbitol, cocoa powder and corn starch), temperature (36, 38 and 40!) and inoculum concentration (100, 200 and 300µl). The study revealed that the maximum number of probiotic cells was found in sorbitol containing beads with the viability of 50.66×10^8 CFU/g (9.70 log CFU/g) than cocoa powder and corn starch. The optimum temperature reported was 38! (9.70 log CFU/g) and maximum probiotic count of 85.33×10^8 CFU/g (9.93 log CFU/g) was observed in encapsulated bead inoculated with 300µl of bacterial suspension. Microcapsule prepared with these conditions may help to protect, isolate and control the release of probiotics which is of growing interest in many sectors of food product development.

Key words: *L. acidophilus*, microencapsulation, probiotics, sorbitol and sodium alginate