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Standardization of *Bacillus thuringiensis* var. *kurstaki* containing polymer microparticles using a coacervation method

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Bacillus thuringiensis (Bt) is an endospore forming bacterium comprising of different strains which have the ability to produce different types of toxins thereby targeting a wide range of pests. The potential of *Bacillus thuringiensis* var. *kurstaki* as a foliar spray to control insect pests has received much popularity. However, high costs of production, their short shelf-life and less persistent nature are major constraints. In order to maximize its potential there is a need to increase its persistence under various environmental conditions. In the present study, a novel concept of bench scale microencapsulation was standardized to produce microparticles can increase environmental persistence overtime has been targeted. The *Btk* isolate Bt-127 encapsulated with polymer microparticles have been prepared using a coacervation method. The pectin and chitosan polyelectrolytes after dissolving in solvent were used for encapsulation of *Bt* using UV-protectants as stabilizers. Viability and percent entrapment of *Bt* in the carrier has been done at various levels of preparation and drying of microparticles. The efficiency of methodology and concentration of polyelectrolytes were observed. It has been found that, Bt was 85% entrapped in polyelectrolytes. The *Bt* entrapped microparticles and Bt-127 isolate powders were screened against 7 day old *Spodoptera litura* larvae @ 1g/l on castor (DCH-519) by spray bioassay method. The highest mortality against *S. litura* of 100% was recorded in Bt-127 entrapped microparticles at 48 hours after treatment with very low feeding whereas Bt-127 isolate recorded only 96.67%. Thus, Bt-127 entrapped microparticles were found more promising when compared to Bt-127 isolate alone.

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