Effect of carrier and temperature on the viability of Burkholderia sp (UPMB3) and Pseudomonas sp (UPM P3) during storage.

ABSTRACT

This study was aimed at to determine the ability of different carriers to sustain the viability and efficacy of endophytic bacteria: Burkholderia sp (UPMB3) and Pseudomonas sp(UPMP3) during storage. UPMB3 and UPMP3 were formulated as dry formulation using vermiculite and coir dust as carriers and liquid formulation with Luria broth (LB) as the culture substrate. These bacterial formulations developed were assessed for the viability and efficacy as fresh preparations and after nine months stored at 10, 20 and 30°C. Formulations stored at 10 and 20°C provided a longer shelf-life than those stored at 30°C based on viability at monthly intervals over a 9-month storage period. At 10 and 20°C, the LB-based and vermiculite-based formulations were found to be the most stable by sustaining 86% of viable bacteria cells after 6 months of storage. However, at the end of 9 months, the number of viable bacteria cells in both formulations declined to 71 and 57%, respectively. Coir dust-based formulation was the least stable at 10 and 20°C storage, when only 43 and 29% viable cells were detected at the end of 9-months storage.

Keyword: Burkholderia sp; Pseudomonas sp; Formulation; Vermiculite; Coir dust; Luria Broth.