Resumo #28

Aprovado

PHOSPHATE SOLUBILING BACTERIA: VIABILITY AND SURVIVAL IN DIFFERENT INOCULATION VEHICLES AND STORAGE CONDITIONS

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The use of phosphorus solubilizing microorganisms (PSM) associated with the natural rock fertilization has been shown to be a promising alternative for conventional phosphate fertilization. However, in order to have a high microorganism populations and longer survival time, it is necessary to combine physical, chemical and biological characteristics to produce bio inoculants commercially. Technological applications of biopolymers usually require improvements in their mechanical properties, in order to develop the most appropriate vehicle for product formulation. Hence this study aimed to evaluate the survival time of two PSM strains in different vehicles and storage conditions. Four vehicles, starch, carboxymethyl cellulose (CMC), coal and peat, were used to formulate bio inoculants of two PSM strains that belong to Embrapa Maize and Sorghum Collection of Multifunction Microorganisms (B32 and B70). The viability os PSM in the inoculants was assessed monthly by viable count for six months in two conditions os storage (4°C and room temperature). The starch vehicle presented the highest number of living bacteria, with values higher than 8.5 and 9.0 log colony-forming unit (CFU) g substrate⁻¹ for B70 and B32, respectively, at room temperature. B70-based formulations, using CMC and starch vehicle, had a better performance (p<0.05) than B32-based on viability, except for starch under 4°C. In general, all strains had higher or equal viable cell density than the initial inoculation (8.0 logCFU) at different storage conditions. Thus, the microganisms and vehicles studied here are promising for bio inoculants development.

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