

Evaluation of Different Growth Media and Formulation Methods for Economic Production of Biological Control Agents for Tomato production

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Abstract

Biological control agents (BCAs) are potential alternative products to reduce fungicide usage in production. Formulation of the BCAs is important to stabilize the organisms during production, distribution, and storage. Formulation is essential for facilitating easy product handling, application and for protecting the BCA from harmful environmental factors as well as for enhancing the activity of the organisms in the field. Technically, an efficient formulation permits better application of the biocontrol organism for improved efficacy. This study focused on the evaluation of ten media for the mass production of three bacteria isolates (IMC8, PRT, PSL). The selection of the media for this study was based on the nutritional requirements for bacteria being formulated and media cost. Bacterial growth was assessed by optical density and plate counts after 48 hours incubation in a shaking rotary incubator set at 200 RPM/h and 30°C. A replication of three was used for each media and data analysis of variance and mean separations used the software, R studio 2022.02.2 Build 485. Glucose with yeast extract exhibited the highest bacterial growth.