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عنوان مقاله:

Revolutionizing the Formulation of Plant Probiotic Bacteria : Using Alginate Biopolymer for Encapsulating Probiotic Bacteria to Alleviate Plant Biostresses

محل انتشار:

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خلاصه مقاله:

Biological biocides possess the capacity to mitigate plant biotic stresses and enhance growth, however, they have a tendency to be unstable and degrade rapidly. On the other hand, plant probiotic bacteria (PPBs) can inhibit plant pathogens and enhance crop productivity without causing harm to the environment. The increasing demand for PPBs has led to the exploration of new formulation processes, particularly encapsulation. This method has gained popularity in recent years as it effectively addresses the limitations of free-form formulations. Encapsulation not only enhances the performance of formulations by extending their shelf life, but also enables controlled release of biological components. It has the potential to serve as a platform for managing biotic stressors, such as plant pathogens, through an innovative approach. Alginate is a significant biopolymer that has a high potential for encapsulating PPBs. This paper discusses the processes of extrusion, spray drying, and emulsion for acquiring capsules. Additionally, it highlights more recent advancements regarding the encapsulation of plant probiotic bacteria based on alginate materials and their applications in the reduction of plant biotic stressors

کلمات کلیدی:

Encapsulation, Biopolymer, Biotic stresses, Biological control

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