

عنوان مقاله:

Application of egg shell with fortified vermicompost in Capsicum cultivation: A strategy in waste management

محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی، دوره 11، شماره 4 (سال: 1401)

تعداد صفحات اصل مقاله: 11

نویسندگان:

Ishita Biswas - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Debasis Mitra - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Debanjan Mitra - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Sourav Chattaraj - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Ansuman Senapati - *Centre for Plant Tissue Culture and Biotechnology, Bhubaneswar - ۷۵۱۰۱۹ Odisha, India*

Abhinobo Chakraborty - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Goutam Basak - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

Pradeep Das Mohapatra - *Department of Microbiology, Raiganj University, Uttar Dinajpur, West Bengal, India*

خلاصه مقاله:

Purpose Chicken eggshell (ES) is a global biowaste product of poultry industry and an enriched source of calcium required for plant growth. Therefore, the present study has been carried out to assess the potentiality of the combination of ES with vermicompost (VC) and chicken feather protein hydrolysate (CFPH) on growth and yield improvement of Capsicum plants. Method A field study was conducted through randomized block design (RBD) with eight treatments having three replicates for each. Principle Component Analysis (PCA) have performed to analyze the yield related parameters of plant. Nutritional components of VC and ES were also analyzed. Results The PCA analysis of the field experiment data has indicated that the combination of ES, CFPH and VC (in a ratio of ۱۰۰:۱۰:۳) remarkably increased the agronomic parameters of capsicum plant about four folds as compared to its chemical counterpart and control, while together VC and ES strongly influences the characteristics of fruits. The first two dimensions of first and second PCA analysis showed ۸۸.۳۹ and ۶۶.۹۱ percent of the overall dataset inertia respectively, explaining ۸۸.۳۹ and ۶۶.۹۱ percent of the total variability. These two values are higher than their respective reference values of ۳۶.۳۲ and ۴۶.۷۶ percent indicating substantial variability. Conclusion The co-application of ES, CFPH with VC could enhance the yield parameters of crops by enriching the soil with both micro and macronutrients. It also serves as a source of .organic compost with concomitant reduction in the use of chemical fertilizers

کلمات کلیدی:

egg shell, Calcium, vermicompost, Chicken feather protein hydrolysate, Capsicum

