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Abstract

Response of Soybean (Glycine max) on Biopriming Applications with Trichoderma harzianum and Streptomyces sp.

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Abstract:

Soybean seeds are seeds that are prone to decreased physiological quality because they have a high protein content of 43.90%. One way to overcome this is by conducting a biopriming process. Biopriming is one of the priming treatment by giving biological agents that are able to improve the quality of seed germination. The purpose of this study was to improve the quality of seed germination and vigor with a combination of biological agents in the form of Trichoderma harzianum and Streptomyces sp. This study uses a factorial Separate Plot Design consisting of main plots and subplots. The main plot is the long immersion treatment consisting of 4 levels, namely 3 hours, 6 hours, 12 hours and 24 hours. Plots are microbial treatments consisting of 3 criteria, namely without microbes, Trichoderma harzianum and Streptomyces sp. The interaction between immersion length treatment and several types of microbes significantly gave the best results on normal sprouts, abnormal sprouts, number of productive branches, number of pods per plant, root length, density of upper leaf stomata, density of lower leaf stomata, width of upper leaf stomata opening, and broad opening of the lower leaf stomata. In the single factor soaking time, soaking 6 hours, gives the optimal number of nodules. In single factor microbial type, Streptomyces sp. gave optimal value for germination and number of seeds per plant. So all treatments for both immersion duration and various types of microbes that are effectively used in are 12 hours immersion and Streptomyces sp.

Key Words: Biopriming, Trichoderma harzianum, Streptomyces sp., Duration of immersion.

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