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EVALUATION OF GERMINATION OF BLACK CUMIN (NIGELLA SATIVA L.) SEEDS OBTAINED FROM PLANTS TREATED WITH DIFFERENT VARIOUS BIOLOGICAL FERTILIZERS

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Biological fertilizers have been identified as an alternative to chemical fertilizers to increase soil fertility and crop production in sustainable farming. The objective of this study was to evaluate the germination rate and percentage of black cumin (Nigella sativa L.) seeds that obtained plants treated with different biological fertilizers in the field. This laboratory experiment was conducted with eight treatments and four replications, based on a completely randomized design. The seeds were obtained from plants treated by various biological fertilizers including (A) Azotobacter paspalk, (B) Azospirillum brasilense, (C) the fungus of Glomus intraradices, (D) C+A, (E) C+B, (F) A+B, (G) A+B+C, and (H) control without using bio-fertilizers. Germination percentage and rate were determined according to the Top of Paper (TP) method. The germinated seeds were counted, daily. Final germination percentage, Time till 50% and 100% germination were determined and the number of normal seedlings was assessed. The results showed that the effect of inoculation of black cumin mother plants with biological fertilizers was significant in all of the evaluated characters of the obtained seeds (p<0.01), compared with control. The highest and lowest amounts of 50% germination were obtained in the E (3.80 days) and H (0.77 days) treatments, respectively. It seems that application of biological fertilizers in mother plants regulated the germination of produced seeds and this could help to reduce the risk of seedling deterioration.