Enhance Suppressive Effect of Compost on Soybean Rhizoctonia Root Rot by Soil Treatment with Trichoderma harzianum

Kamal AM Abo-Elyousr, Waleed Zein El-Abdean, Mohamed HA Hassan and Mohamed M El-Sheakh

Abstract:

This study deals with in vitro, under greenhouse, and field efficacy of Trichoderma harzianum (Th1 and Th2), and two types of compost, plant compost (PC) and animal compost (AC) to control the soybean root rot disease caused by Rhizoctonia solani. In vitro study indicated that, Trichoderma spp. isolate Nos. 1 and 2 were the most effective on the pathogen growth, also both composts at 50% concentration were effective on the growth of the pathogen. The microbe population varied in the tested two composts (PC and AC), plant compost (PC) had a higher population of the recovered microbes than animal compost (AC) except in the case of fungi. Under greenhouse and field conditions, application of T. harzianum (isolates Nos. 1 and 2) and compost individually or in combination for controlling Rhizoctonia root rot disease showed a suppressive effect on severity of the disease and increased the yield of soybean. Under field conditions, treatments with (Th2) and (Th1+AC) caused the highest percentage of disease reduction. Treatments with PC and AC gave the lowest reduction of Rhizoctonia root rot disease compared with infected control.

Keywords:

Compost; Biological control; Rhizoctonia solani; Soybean; Root rot disease

Published In:

J Plant Physiol Pathol , 2-2 , 1-6