Application of the fungus *Aspergillus niger* against stem rot disease (*Rhizoctonia solani*) On Sorghum Plant *(Sorghum bicolor. L)*

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ABSTRACT

This study aimed to examine the effect ofdose *A. niger* on the intensity of stem rot disease (*Rhizoctonia solani*). This research was carried out from April to August 2021 at the Plant Protection Laboratory and then continued at the Jember State Polytechnic Land using a Randomized Block Design (RAK). The treatments included: (A0 = Tebuconazole 1,2 g/liter with a dose of 2 liters/4,8 m^2)), (A1 = *A. niger* 25 g/plant), (A2 = *A. niger* 30 g/plant), (A3 = *A. niger* 35 gr/plant), (A4 = *A. niger* 40 gr/plant). The concentration of *A. niger was* 10^8 CFU and each treatment was repeated 5 times. The data were analyzed using ANOVA, if it was significantly different, it was continued with the 5% BNT test. Observation variables included attack intensity and dry weight of sorghum. The intensity of the attack using the absolute formula. The test results ofantagonist *A. nigerwere* able to inhibit the development of the fungal pathogen *R. solani* by 50% with a spore density of 10^8 CFU. The intensity of attack at several doses of *A. niger* were A1 = 8,97%, A2 = 4,67%, A3 = 3,33%, A4 = 3,33% and the intensity of attack by the fungicide Tebuconazole A0 = 4.00%. The total dry weight of sorghum per sample in thetreatment was *A. niger* A1 = 114,1 g/plant, A2 = 115,5 g/plant, A3 = 118,9 g/plant, A4 = 127 g/plant. While the fungicide treatment Tebuconazole A0 = 121,9 g/plant.

Keywords: *Aspergillus niger, Rhizoctonia solani, Sorghum, Tebuconazole*