AKTIVITAS SIDEROFOR BACILLUS SUBTILIS SEBAGAI PEMACU PERTUMBUHAN DAN PENGENDALI PATOGEN TANAMAN TERUNG

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Abstract	Siderophore activity of Bacillus subtilis as plant growth promoters and biological control agent of eggplants pathogens. The aims of this research were to identify the siderophores of B. subtilis, to assess its activities as plant growth promoters and biological control agent of eggplants pathogens. Five isolates of B. subtilis i.e.B46, B209, B211, B298 and B 315 grown on SDCASA medium. The isolate which showed the best siderophores production was then further studied on its ability as a growth promoter on eggplants in two soil types with different Fe content. The inhibitory test was conducted against two kinds of pathogens, namely Colletotrichum sp. and Ralstonia solanacearum. The greenhouse experiment was arranged using a factorial completely randomized block design. The first factor was the B. subtilis (B. subtilis B298 and without B. subtilis B298), second factor was the type of soil (Ultisol and Andisol). The variables measured were Fe uptake by plants, plant growth parameters on eggplant i.e. height, leaf number, root length, root volume, weight of fresh and dried shoot as well as fresh and dry root, percentage of inhibition to fungal and bacterial eggplant pathogens. The results showed that the five isolates of B. subtilis were able to produce siderophores as catecholate and hydroxamate types. The best siderophore production was showed by B. subtilis B298. The ability of B. subtilis B298 in accelerating the growth of plants was indicated by the increased of uptake Fe, plant height, leaf number, root volume, weight of dried plants by 45.62%, 25.48%, 19.45%, 41.10% and 34.89% respectively. The inhibition to the fungal and bacterial eggplant pathogens best shown by the isolates of B. subtilis B298 with 55.4% and 22 mm respectively.
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