



Effect of Seed Inoculation with Actinomycetes and Rhizobium Isolated from Indigenous Soybean and Rhizosphere on Nitrogen Fixation, Growth, and Yield of Soybean

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Abstract:

The present study was initiated to determine whether isolates from soil and of soybean plants can express nitrogenase activity when grown in the absence of plant host. The study was conducted to answer the question “can benefit gained by” the interaction between Actinomycetes and Rhizobium symbiosis with legume. Thirty-five isolates identified as Rhizobium and twenty-one Actinomycetes were isolated from the rhizosphere of soybean plants and identified by morphological character, biochemical content identified. Fifty-six isolates were tested for their capabilities of N₂ fixation and siderophore production. The isolated rhizo bacteria were grown in N-free media, and twelve of them showed a good growth on the Burk’s N-free media. Almost all strains produced siderophores; however, the production level was very low, and only the strain AK 10 released considerable amounts of this metabolite. One strain of Actinomycetes was selected to test the interactions with Rhizobium. Co inoculation of Actinomycetes and Rhizobium produced synergic benefits on plant growth and get protection from the production of siderophore.



Biography:

Asmiaty Sahur is a lecturer, researcher at Department of Agronomy, Faculty of Agriculture, Hasanuddin University, Makassar Indonesia. She holds a BSc in Agronomy and Master in Plant sciences also her PhD in Plant Sciences..

Recent Publications:

1. The Interaction between Endophytic Actinomycetes and Rhizobium in Leguminous Plants
2. Asmiaty Sahur et al. Agronomy-2017