POTENTIAL OF *TRICHODERMA* spp. IN THE PROMOTION OF SOYBEAN GROWTH AND SOLUBILIZATION OF PHOSPHORUS

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ABSTRACT:

The demand of the consumers for less aggressive products to the environment is increasing, appearing niches in the national and international market more demanding how much to the quality of produced foods. Among the factors responsible for this increase in the search for environmentally sustainable inputs, the indiscriminate application of fertilizers has great relevance. Brazil is the fourth largest fertilizer consumer in the world, with phosphate fertilizers being the most imported and produced in the country. The use of microorganisms to aid the absorption of phosphorus by the plant has been a promising strategy. Fungi of the genus *Trichoderma* has been one of the most studied to improve the production and development of several crops, mainly, for his capacity of radicular colonization, forming a symbiotic association with the plants, and can meet the nutritional needs of the plant by solubilizing phosphate. Thus, our work sought to bioprospecting *Trichoderma* strains from the Amazon Forest with the capacity to solubilize/mineralize phosphate and the potential to promote growth in soybean plants. Soybean plants were cultivated in soil with a gradient of rock phosphate and triple superphosphate. The presence of the two isolates of *Trichoderma* spp., previously selected in vitro tests, presented positive responses in the promotion of soybean plant growth and in the efficiency of the P uptake. The two isolates showed an increase in the dry matter mass of the leaf area from 110% to 140% and from 104% to 136% in the root. The efficiency of P absorption by the soybean plant ranged from 80% to 153%. *Trichoderma* spp. isolated from soils of the Amazon Forest have been shown to be a promising source in the search for lineages with potential in phosphate solubilization. The increase in P availability to plants through the use of alternative sources of this element and the inoculation of *Trichoderma* contributed to the growth of soybean plants.

Keywords: phosphorus uptake, *Trichoderma*, growth promotion, soybean

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