Soil Organic Amendment and Phosphorus Mineralization in the Rhizosphere. (S03-zibilske152557-Poster)

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Abstract:

Microbial activities plant performance.Experiments were conducted to evaluate soil organic amendment on rhizosphere microbes. Humate was added to a soil before transplanting onions, which were inoculated with Bacillus. Plants were harvested and microbial populations were evaluated for phosphatase, use of inorganic P, BIOLOG, and onion tissue. Inoculation of onion roots decreased populations and plant weights at 12 weeks. Bulb weights averaged 27 g for the control and 17 g for inoculated plants. Humate maintained bulb weight near the controls, and masked the weight reduction seen with inoculation. At 18 weeks, there were no differences between the controls and inoculated plant weights (112 g and 114 g, respectively), but the humate amendment increased bulb weight (165 g). Differences in plant P was found with the inoculation. BIOLOG indicated a shift in rhizosphere populations, most prominently in the humate treatment. No shift could be attributed to the bacterial inoculant treatment. Results indicate that organic amendment affects the rhizosphere population.PGPR improved P uptake, but did not change in the physiological profiles of onion rhizosphere bacteria.

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