Effects of Protist as a Biofertilizer on the Rate of Growth in Plants

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The purpose of this project was to create an innovative way to fertilize, using protists applied to the soil and add to research on the effects of protists in soil, specifically researching physarum polycephalum and its effect on ryegrass. To ensure that the physarum polycephalum would take to the soil, the procedure consisted of two different groups of Ryegrass plants with four samples in each group. One of the four samples of each group acted as a control. One group was soil with the physarum polycephalum being introduced to the soil on agar. For the second group, the physarum polycephalum was scraped from the agar plate and mixed into the soil. Then the rye grass seeds were planted and their growth was measured every 5 days over a 30 day period. Every 10 days the ryegrass was cut and weighed until the end of the 30 days along with its root systems once the plants were removed from the soil. The data showed that ryegrass samples with protists added to the soil had a higher growth rate and biomass than the controls. This was likely due to the protists acting as bioregulators, controlling the amount of bacteria and fungi in the soil. By doing this, the protists provided a healthy and balanced microbiome increasing plant health and performance.

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