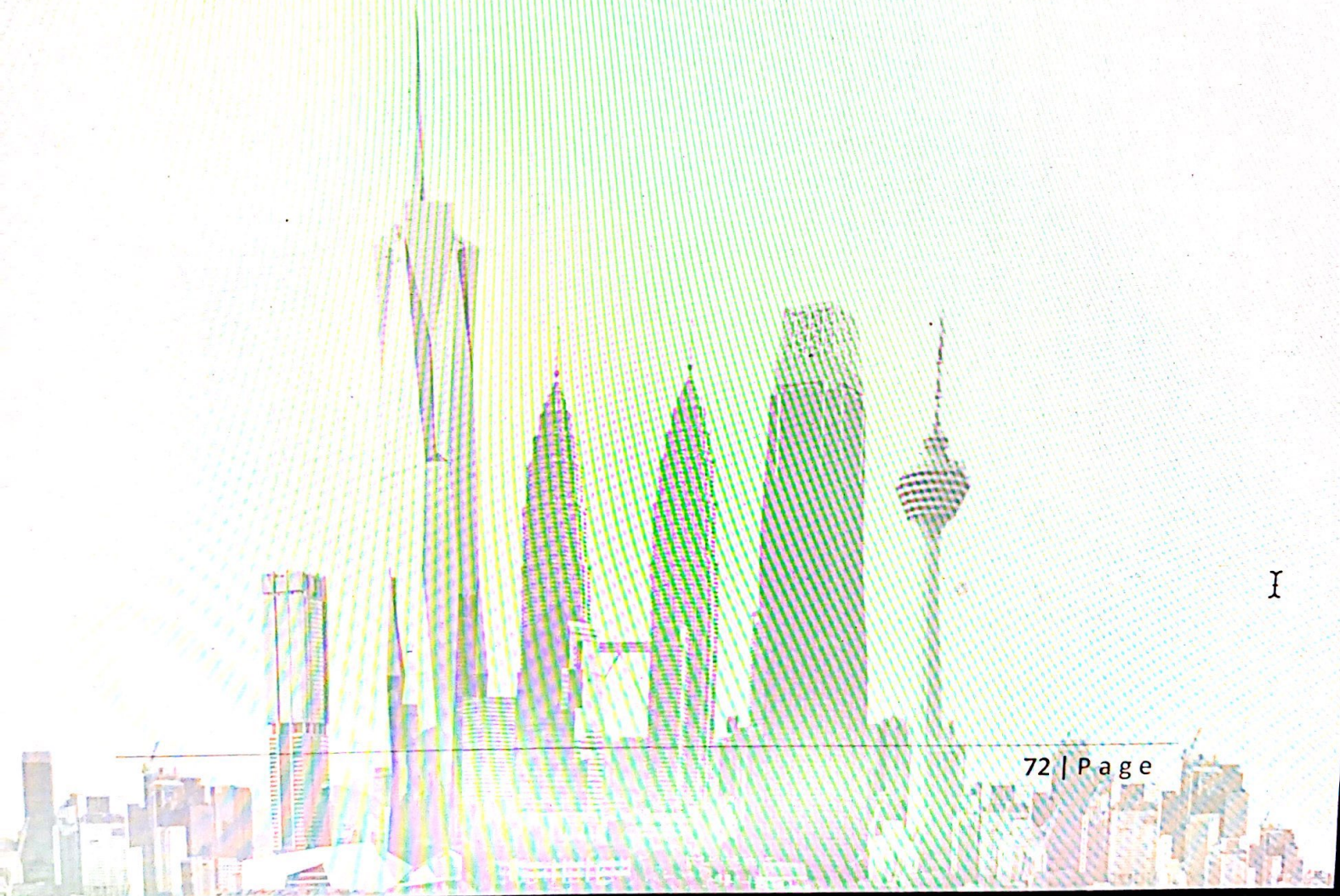


ORAL SESSION 8

Soil Ecology and Soil Quality



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OS8-1**Spatial Distribution of Phosphate Solubilizing Bacteria (PSB) and Arbuscular Mycorrhiza (AM) Fungi in Oransbari Agricultural Soil**

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Abstract

Phosphate Solubilizing Bacteria (PSB) and Arbuscular Mycorrhizal (AM) Fungi are abundant in the soil and play an important role in plant nutrient uptake, especially Phosphate. The objective of this study was to analyzed the population and spatial distribution of PSB and AM Fungi and to study their relationship with some soil properties in some agricultural soils in Oransbari District, South Manokwari. Composite soil and plant root samples (0-20 cm) were taken in some agricultural soils with a total of 37 samples. The population of PSB, AM Fungi spores, percentage of root colonization and some soil properties (moisture content, soil texture, pH, C-org, C/N, N-total, P-total, K-total, CEC) were analyzed. Spatial and geostatistical analysis were performed using ArcGIS 10.3 with the kriging interpolation method. The results showed that the PSB population ranged from 1×10^3 to 1716×10^3 /gram dry soil, while the number of PSB colonies ranged from 67×10^2 to 126×10^5 CFU/gram soil with a coefficient of diversity of 194.47. %, this shows that the BPF population is very high with a very diverse level of distribution. The average number of AM Fungi spores was 18.66-22.25 spores/50 grams of soil and the percentage of AMF colonization was moderate (48.7%) to very high (56.18%). The results of soil analysis showed that soil water content ranged from 23.8 to 96.31%, soil pH 4.5 to 6.32, available P ranged from 2.96 to 152.61 ppm, C-organic content ranged from 1.66 – 3.99%, and N-total ranged from 0.04 to 0.48%. The results of the geostatistical analysis of the number of PSB and AM Fungi are presented in the form of a spatial distribution graph. There was a correlation between soil properties and the number of PSB and AM Fungi in the

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Keywords: soil microorg relation

