

SOIL PH ANALYSIS IN RELATION TO BASAL SYSTEM ROT (BSR) DISEASE IN OIL PALM AT DIFFERENT DEPTHS AND MICROSITES

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Abstract: In agricultural industry, soil is known as important indicator for plant growth and productivity. Variations in soil conditions will alter soil ecosystem and communities that exist within the environment. Significant changes in soil environment sometimes favor the growth of plant pathogen and thus affecting plant health. Basal Stem Rot (BSR) disease caused by pathogenic fungi known as *Ganoderma boninense* has been identified as a major threat in oil palm plantation. The establishment of different microsities (weeded circle, harvesting path and frond pile) in oil palm management may induce the spatial differences of soil properties within a field including soil pH. Hence, our aim is to study the adverse changes in soil pH in relation to BSR disease of oil palm at different microsities (harvesting path, weeded circle and frond pile) and soil depth (10 cm and 30 cm from upper soil surface). In general, the soil samples of oil palm obtained from FELCRA Seberang Perak have shown acidic nature in which soil from infected oil palm has lower pH value (pH range 2.93-5.94) as compared to soil pH from healthy oil palm (pH range 3.39-6.29). The statistical results showed that soil depth has no significant effect to the soil pH while soil from different microsities has a significant effect to the soil pH regardless of healthy or infected oil palm. At different microsities, weeded circle give the most acidic value as compared to harvesting path and frond pile. Besides, the interaction between healthiness, depth and microsities did not have a significant effect to the soil pH. Together, these results suggest that BSR disease are likely to occur at soil with lower pH (pH below 6) and soil pH are strongly correlates with different microsities but less affected by soil depth regardless of the healthiness of oil palm.

Keywords: Basal Stem Rot, *Ganoderma boninense*, soil pH, oil palm