POPULASI DAN KERAGAMAN ORGANISME TANAH PADA BEBERAPA KELAS LERENG DI LAHAN BEKAS TAMBANG BATUBARA PT ALLIED INDO COAL JAYA KOTA SAWAHLUNTO

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ABSTRAK

Kegiatan tambang batubara dapat mempengaruhi sifat fisika, kimia dan biologi tanah berupa pemadatan tanah, kerusakan stuktur tanah, pencemaran tanah akibat bahan peledak, merusak ekologi organisme tanah, dan penurunan kesuburan tanah. Penelitian ini bertujuan untuk mengkaji populasi dan keragaman organisme tanah pada beberapa kelas lereng di lahan bekas tambang batubara. Penelitian ini menggunakan metode survei dan pengambilan sampel secara *purposive sampling* pada beberapa kelas lereng yang diambil pada kedalaman 0-30 cm dengan 3 ulangan. Hasil penelitian menunjukkan bahwa kesuburan tanah pada lahan bekas tambang sangat rendah didukung dengan nilai BV yang tinggi, TRP tergolong rendah, C-organik tergolong sangat rendah, N-total tergolong sangat rendah, dan pH yang sangat masam. Populasi makroorganisme tanah berkisar antara 6-17 ekor dengan 2 keragaman yaitu insecta dan nematoda. Populasi mikroorganisme tanah berkisar antara $7,36 \times 10^6 - 7,66 \times 10^6$ cfu/g dengan 4 keragaman bakteri dan $6,57 \times 10^5 - 6,83\ 10^5$ cfu/g dengan 2 keragaman jamur.

Kata Kunci : kelerengan, lahan bekas tambang batubara, organisme tanah,

POPULATION AND DIVERSITY OF SOIL ORGANISM ON SOME SLOPE CLASSES AT THE EX-COAL MINING LAND PT ALLIED INDO COAL JAYA, SAWAHLUNTO CITY

ABSTRACT

Coal mining activities can affect the physical, chemical, and biological properties of soil they can cause soil compaction, soil structure damage, soil contamination, soil organism disturbancy, and soil fertility deplation. This study was aimed to examine the population and diversity of soil organisms on several slope classes in ex-coal mining land. This study used a survey method and soil samples were conducted by purposive sampling based on several slope classes (0-8%, 8-15%, 15-25%, 25-45%) taken at 0-30 cm soil depth with 3 replicaties. Parameters analyzed were bulke density, groundwater level, TSP, organic-C, total-N, acidic acid, C/N ratio, population and diversity of soil oeganism. The results showed that soil fertility in ex-mining land was very low supported by high BV values, low TRP, very low organic C, very low total N, and very acidic pH. Slope 0-8% has the highest population and diversity of soil organism and the lowest population and diversity of soil organism was found on slope 15-25%. The population of soil macroorganisms ranges from 6-17 individuals with 2 variations, namely insects and nematodes. The population of soil microorganisms ranged from $7.36 \times 10^6 - 7.66 \times 10^6$ cfu/g with 4 bacterial variations and $6.57 \times 10^5 - 6.83 \times 10^5$ cfu/g with 2 fungal variations.

Keywords: ex-coal mining land, slopes, soil organisms,