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INDEKS KUALITAS TANAH PADA LAHAN TAMBAK BEKAS SAWAH DI TLUTUP, TRANGKIL, PATI
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INTISARI

Penelitian ini bertujuan mengetahui indeks kualitas tanah pada lahan sawah, tambak bekas sawah, tambak, dan atribut kunci yang paling berkontribusi terhadap nilai tersebut pada tiga jenis lahan yang berbeda. Pengambilan sampel tanah dilakukan dengan metode *purposive sampling*. Parameter yang diukur meliputi: tekstur tanah, berat jenis, berat volume, porositas, kadar lengas, pH, C-organik, KPK, daya hantar listrik, Na-tersedia, Ca-tersedia, Mg-tersedia, N-total, P-tersedia, K-tersedia, dan respirasi tanah. Indeks kualitas tanah ditentukan melalui konsep Minimum Data Set (MDS). Skoring dilakukan dengan membandingkan nilai harkat yang ditentukan. Selanjutnya, masing-masing indikator dijumlahkan menggunakan rumus indeks kualitas tanah dan diharkatkan kedalam kelas indeks kualitas tanah. Hasil penelitian menunjukkan bahwa nilai indeks kualitas tanah sawah sebesar 41,14; Tambak Bekas Sawah sebesar 38,43; dan tambak sebesar 37,57. Semua jenis lahan memiliki indeks kualitas tanah yang tergolong sedang. Berdasarkan nilai R^2 pada analisis *stepwise*, parameter yang paling berpengaruh terhadap indeks kualitas tanah adalah natrium tersedia dan nitrogen total. Meskipun indeks kualitas tanah tergolong sedang, tetapi konversi lahan tambak menjadi sawah lagi berpotensi meningkatkan hasil pertanian. Usaha penambahan penggunaan pupuk organik maupun pupuk hayati dibutuhkan untuk meningkatkan kadar bahan organik dalam tanah sekaligus dapat mengurangi dampak negatif kelebihan Mg dan Na.

Kata kunci: indeks kualitas tanah, sawah, tambak bekas sawah, tambak

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ABSTRACT

This study aimed to determine the soil quality index of paddy fields, former paddy field ponds, and aquaculture ponds, as well as to identify the key attributes that contribute most significantly to soil quality values across the three land-use types. Soil samples were collected using a purposive sampling method. Parameters measured included soil texture, particle density, bulk density, porosity, moisture content, pH, organic carbon, cation exchange capacity, electrical conductivity, available sodium, available calcium, available magnesium, total nitrogen, available phosphorus, available potassium, and soil respiration. The soil quality index was determined through the Minimum Data Set (MDS) concept. Scoring was performed by comparing values against established rating criteria, after which each indicator was summed using the soil quality index formula and classified into soil quality index categories. The results showed that the soil quality index values were 41,14 for paddy fields, 38,43 for former paddy field ponds, and 37,57 for aquaculture ponds. All land-use types were classified as having a moderate soil quality index. Based on the R^2 values derived from stepwise regression analysis, available sodium and total nitrogen were identified as the parameters with the greatest influence on the soil quality index. Although the soil quality index was classified as moderate, the conversion of aquaculture ponds to paddy fields has the potential to improve agricultural productivity. The application of organic fertilizers and biofertilizers is recommended to increase soil organic matter content while simultaneously mitigating the negative effects of excess magnesium and sodium.

Keywords: soil quality index, paddy field, former paddy field pond, aquaculture pond