

ABSTRAK

Kajian Efek Residu Amelioran *in Situ* Batu bara Bituminous Dan Lapisan Pengotornya Terhadap Sifat Fisika-Kimia Tanah Reklamasi Tambang Batu bara Dan Hasil Kedelai

Kata Kunci: Residu Amelioran, Batu bara Bituminous, Lapisan pengotor Batu bara, Sifat tanah reklamasi, Kedelai

Pemberian amelioran organik yang lambat melapuk ke dalam tanah diharapkan dapat berdampak jangka panjang untuk memperbaiki sifat fisik dan kimia tanah. Sumber karbon organik *in situ* yang mudah diperoleh pada lahan reklamasi tambang batu bara adalah batu bara itu sendiri dan lapisan pengotornya. Karbon organik asal batu bara dan lapisan pengotornya adalah yang jenis lambat melapuk, sehingga residunya dapat bertahan lama di dalam tanah. Penelitian ini bertujuan untuk mengkaji pengaruh residu tahun pertama amelioran *in situ* batu bara bituminous dan lapisan pengotornya terhadap perbaikan sifat fisik dan kimia tanah reklamasi tambang batu bara dan hasil kedelai. Penelitian dilakukan dengan menggunakan Rancangan Acak Kelompok (RAK) dengan 3 jenis perlakuan dan percobaan dalam pot. Perlakuan yang dicobakan adalah residu tahun pertama dari pemberian amelioran *in situ*, yakni: 1) Residu Kontrol (K0), 2) Residu Amelioran *in situ* batu bara bituminous bituminous (C) dan 3) Residu Amelioran Pengotor Batu bara (parting) (B). Batu bara dan pengotor (parting) batu bara keduanya diuji dengan 5 dosis yang masing-masing terdiri dari 5, 10, 15, 20 dan 25 ton/ha. Hasil penelitian menunjukkan bahwa residu tahun pertama amelioran *in situ* batu bara bituminous bituminous dan pengotor batu bara berpengaruh nyata terhadap beberapa sifat kimia tanah reklamasi tambang batu bara. Kedua jenis residu amelioran tersebut berpengaruh sangat nyata dalam meningkatkan C-organik, asam humat dan kandungan N total. Peningkatan C-organik tanah tertinggi oleh ameliorasi residu batu bara bituminous terjadi dosis 25 ton/ha (C5), sedangkan pada pengotor batu bara dosis 20 ton/ha (B4).

Abstract

Study of the Effects of Residue Amelioran in situ Bituminous Coal and Its Impurity Layer on the Physico-Chemical Properties of Soil Reclamation of Coal Mines and Soybean yield

Keywords: Ameliorant Residue, Bituminous Coal, Coal Impurity layer, Properties of reclaimed soil, Soybean

The application of organic ameliorants that is slowly decompose is expected to have a long-term impact on improving the Physico-chemical properties of the soil. The source of in situ organic carbon that is easy to obtain on coal mine reclamation land is the coal itself and its impurity layers. Organic carbon from coal and its impurities (Parting) are slow to decompose, so the residue can last a long time in the soil. This study aims to examine the effect of the residue of first-year of ameliorant of coal and its impurity layer on the improvement of the physical and chemical properties of coal mine reclamation soil and soybean yields. The study was conducted using a randomized block design (RBD) with 3 types of treatment and experiments in pots. The treatments tested were residues from the first year of the administration of ameliorant in situ, namely: 1) Control (K0), 2) Bituminous coal ameliorant residue (C), and 3) Coal impurity ameliorant residue (parting) (B). Both coal and coal impurities (parting) were tested with 5 doses each consisting of 5, 10, 15, 20, and 25 tons/ha. The results showed that the first-year residue of bituminous coal ameliorant and coal impurities significantly affected some of the chemical properties of coal mine reclamation soil. Both types of ameliorant residues had a very significant effect on increasing C-organic, humic acid, and total N content. The highest increase in soil organic C by amelioration of bituminous coal residues occurred at a dose of 25 tons/ha (C5), while for coal impurities the dose was 20 tons/ha (B4).