

RINGKASAN

Logam berat timbal (Pb) dari emisi kendaraan dapat terserap oleh tanaman melalui daun dan menyebar ke seluruh bagian tanaman bahkan hingga produk tanaman tersebut. Salah satu tanaman yang dapat menyerap Pb yaitu tanaman padi. Sehingga dilakukan analisis untuk mengetahui kadar logam berat Pb yang terkandung di dalam beras sebagai dampak dari potensi udara yang berasal dari kendaraan pengangkut tambang galian C. Penelitian ini bertujuan untuk mengetahui akumulasi logam berat Pb pada daun dan beras dua varietas tanaman padi di area yang dilalui oleh truk pengangkut pasir galian C pada jarak tanam berbeda dari jalan.

Lokasi penelitian di Desa Singasari, Kecamatan Karanglewas, Kabupaten Banyumas, Laboratorium Agroekologi Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto, Balai Pengujian Standar Instrumen (BPSI) Lingkungan Pertanian, Jakenan, Pati, dan Wahana Laboratorium, Semarang. Penelitian dilaksanakan dari Bulan Januari sampai Juli 2024. Perlakuan yang diberikan dalam penelitian adalah jarak tanaman dengan jalan dan varietas. Perlakuan jarak terdapat 3 taraf yaitu J1= 0-25 m, J2 = 25-50 m, J3 = 50-75 m, sedangkan perlakuan varietas terdapat 2 taraf yaitu V1 = Inpari 32 dan V2 = Cilamaya Muncul. Rancangan penelitian yang digunakan adalah Analisis Antarlokasi yang terdiri dari dua faktor. Data diperoleh dianalisis menggunakan analisis ragam dengan taraf kepercayaan 95%. Analisis yang berpengaruh nyata, maka dilanjutkan dengan uji DMRT dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa perlakuan jarak yaitu J1 = 0-25 m, J2 = 25-50 m, dan J3 = 50-75 m hanya berpengaruh terhadap kandungan logam berat (Pb) pada daun tanaman padi, bobot biji per rumpun, dan luas daun. Perlakuan varietas yaitu varietas Inpari 32 dan Cilamaya Muncul berpengaruh terhadap biomassa tajuk kering akhir dan luas daun. Logam berat (Pb) pada daun tertinggi ditunjukkan oleh perlakuan jarak 50-75 m (0,75 ppm) yang diikuti oleh perlakuan jarak 25-50 m (0,72 ppm) dan jarak 0-25 m (0,63 ppm). Luas daun paling lebar adalah pada perlakuan jarak 50-75 m (31,01 cm) berbeda nyata dengan perlakuan 0-25 m (27,01 cm) dan 25-50 (27,35 cm), sedangkan perlakuan varietas terlihat varietas Cilamaya Muncul lebih tinggi (29,88 cm) dan berbeda nyata dengan varietas Inpari 32 (27,03 cm). Perlakuan jarak 50-75 m (51,5 g) berbeda nyata dengan hasil bobot biji per rumpun tertinggi yaitu perlakuan jarak 25-50 m (71,6 g) diikuti jarak 0-25 m (71,4 g). Logam berat (Pb) berpengaruh nyata pada biomassa tajuk kering akhir yaitu perlakuan varietas Cilamaya Muncul dengan nilai tinggi (46,60 g) diikuti varietas Inpari 32 (30,61 g).

Kata kunci: logam berat, padi, timbal, jarak

SUMMARY

The heavy metal lead (Pb) from vehicle emissions can be absorbed by plants through the leaves and spread to all parts of the plant and even to the plant products. One of the plants that can absorb Pb is rice plants. So an analysis was carried out to determine the levels of the heavy metal Pb contained in rice as a result of the potential air originating from the vehicle carrying the excavated mine C. This research aims to determine the accumulation of the heavy metal Pb in the leaves and rice of two varieties of rice plants in the area passed by truck carrying excavated sand C at different planting distances from the road.

Research locations in Singasari Village, Karanglewas District, Banyumas Regency, Agroecology Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto, Agricultural Environmental Standard Instrument Testing Center (BPSI), Jakenan, Pati, and Wahana Laboratory, Semarang. The research was carried out from January to July 2024. The treatments given in the research were the distance of the plant from the road and the variety. The distance treatment has 3 levels, namely J1 = 0-25 m, J2 = 25-50 m, J3 = 50-75 m, while the variety treatment has 2 levels, namely V1 = Inpari 32 and V2 = Cilamaya Muncul. The research design used is Interlocation Analysis which consists of two factors. The data obtained were analyzed using analysis of variance with a confidence level of 95%. Analysis that has a real effect is then continued with the DMRT test with a confidence level of 95%.

The results showed that the distance treatment, namely J1 = 0-25 m, J2 = 25-50 m, and J3 = 50-75 m, only affected the heavy metal (Pb) content in rice plant leaves, seed weight per hill, and leaf area. . The variety treatments, namely the Inpari 32 and Cilamaya Muncul varieties, had an effect on final dry shoot biomass and leaf area. The highest heavy metals (Pb) in the leaves were shown by the 50-75 m distance treatment (0.75 ppm) followed by the 25-50 m distance treatment (0.72 ppm) and the 0-25 m distance treatment (0.63 ppm). The widest leaf area was in the 50-75 m (31.01 cm) distance treatment which was significantly different from the 0-25 m (27.01 cm) and 25-50 (27.35 cm) treatments, while the Cilamaya Muncul variety was seen in the treatment. higher (29.88 cm) and significantly different from the Inpari 32 variety (27.03 cm). The 50-75 m distance treatment (51.5 g) was significantly different from the highest seed weight results per cluster, namely the 25-50 m distance treatment (71.6 g) followed by the 0-25 m distance (71.4 g). Heavy metals (Pb) had a significant effect on the final dry shoot biomass, namely the treatment of the Cilamaya Muncul variety with a high value (46.60 g) followed by the Inpari 32 variety (30.61 g).

Key words: heavy metals, rice, lead, distance