PENGARUH PENAMBAHAN *SLUDGE* LIMBAH INDUSTRI PENYAMAKAN KULIT SEBAGAI PUPUK TERHADAP PERTUMBUHAN DAN KANDUNGAN KROM PADA CAISIN (Brasrsica cJiinensis. *L)*

Siti Jamilatun Nurrofikoh
96/107644/PT/03397
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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan *sludge* limbah penyamakan kulit terhadap pertumbuhan dan penyerapan logara krom pada tanaman caisin (*Brassica chinensis. L)*. Penelitian ini dilakukan pada skala laboratorium dengan cara menanam caisin pada *polybag*, dengan medium tanah-kompos (2:1) ditambah *sludge* limbah penyamakan kulit sebesar 0%, 10%, 15% dan 20% yang berfungsi sebagai perlakuan. Bibit tanaman caisin disemaikan ke dalam media penyemaian dan dipindahkan ke dalam *polybag.* Setiap *polybag* berisi tiga bibit tanaman dengan ulangan sebanyak tiga kali. Data yang diamati yaitu tinggi tanaman dan jumlah daun yang diukur setiap minggu serta produksi total setelah panen (42 hari setelah pindah tanam). Pengukuran kandungan krom dilakukan dengan menggunakan metode AAS. Penelitian ini menggunakan *completely randomize design (CRD)* pola searah untuk produksi total dan kandungan krom serta randomize *complete block design (RCBD)* untuk tinggi dan jumlah daun. Data yang diperoleh diuji denngan analisis variansi, hasil analisis yang berbeda nyata dilanjutkan dengan uji *Duncan's multiple range test (DMRT)*. Hasil penelitian menunjukkan bahwa pemberian sludge secara nyata menyebabkan penurunan tinggi tanaman, jumlah daun dan berat produksi (P<0,05). Rata-rata tinggi tanaman yang diberi pupuk *sludge* 0%, 10%, 15% dan 20% yaitu 10,07, 9,03, 9,01 dan 8,43 (cm), jumlah daun 5,1, 5,22, 5,18 dan 4,81 serta total produksi (bahan kering) berturut-turut 16,7, 15,56, 14,17 dan 11,03. Kandungan krom tanaman caisin yang diberi pupuk *sludge* limbah penyamakan kulit menunjukkan hasil berbeda nyata (P<0,05). Rata-rata kandungan krom yaitu 13,0224, 73,550, 106,0532 dan 117,9110 (mg/1). Kesimpulan dari penelitian ini adalah penambahan *sludge* sampai 20% menurunkan pertumbuhan tinggi tanaman, jumlah daun dan produksi total serta penyerapan logam krom meningkat seiring dengan peningkatan jumlah *sludge* yang ditambahkan.

(Kata Kunci: *Sludge* limbah penyamakan kulit, Pertumbuhan, Krom, Caisin)

THE EFFECT of ADDED *SLUDGE* of TANNING WASTE WATER as FERTILIZER on GROWTH AND CHROME CONTENT of CAISIN fBrassica *chinevsis. L)*

Siti Jamilatun Nurrofikoh
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ABSTRACT

The experiment was done to know the effect of *sludge* of tanning waste water on growth and chrome content of caisin. The experiment was conducted in laboratory scale by mean of planting the caisin in plastic polybag, using land-manure medium 2:1 (w/w) of 0%. 10%. 15% and 20% of *sludge* of tanning waste water as treatment respectively. The seed of caisin plant were germinated in the medium. Every polybag content three-wellgrown platelet was put in polybag with three replications. Data collected were plant height, number of leaf weekly in the other hand dry matter production and chrome content were observed at 42 days old. The obtained data were analyzed by analysis of variance completely randomized design (CRD) one-way classification for total production and chrome content, and randomized complete block design (RCBD) for plant height and number of leafs. The significant differences were then tested by Duncan's multiple range test (DMRT). The result of the experiment showed that presenting of *sludge* decreased the plant height, number of leafs and total production of caisin (P<0.05).The average of plant height for *sludge* suplementation of 0%, 10%, 15% and 20% was 10.07, 9.01, 9.03 and 8.43 (cm); the leaf numbers was 5.41, 5.22, 5.18 and 4.81; and total productions (DM) was 16.7, 15.56, 14.17 and 11.03. There were increasing levels of *sludge* have increased chrome content in the plant (P<0.05). The everage of chrome content was 13.0224, 73.550, 106.0532 and 117.9110 (mg/1). It was concluded that added *sludge* up to 20% decreased high of plant, number of leafs and total production, and absorption of chrome metal increased that more *sludge* added into plantation medium.
(Key words: *Sludge* of tanning waste water,Growth,Chrome, Caisin)