PEMANFAATAN LIMBAH CAIR PENYULINGAN MINYAK ATSIRI UNTUK MENGENDALIKAN ULAT BAWANG PADA BAWANG MERAH

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INTISARI

Penelitian ini bertujuan untuk mengetahui jenis dan konsentrasi limbah cair penyulingan minyak atsiri untuk mengendalikan ulat bawang *Spodoptera exigua* serta memberikan pertumbuhan dan hasil bawang merah terbaik. Penelitian ini telah dilaksanakan dari bulan September – November 2019 di Desa Sumber Rahayu, Kecamatan Moyudan, Kabupaten Sleman dengan ketinggian lokasi ± 117 m dpl, dan Laboratorium Agronomi Fakultas Agroindustri Universitas Mercu Buana Yogyakarta. Penelitian dilakukan dengan menggunakan Rancangan Acak Lengkap (RAL) faktor tunggal, 3 ulangan dengan perlakuan tanpa penyemprotan sebagai kontrol dan perlakuan jenis serta konsentrasi larutan limbah cair penyulingan minyak atsiri yang terdiri atas 6 aras perlakuan yaitu pestidisa nabati limbah daun cengkeh 75% dan 100%, pestisida nabati nilam 75% dan 100%, pestisida nabati serai 75% dan 100%. Variabel yang diamati adalah identifikasi hama, populasi hama ulat bawang merah, intensitas serangan hama ulat bawang merah (%), tinggi tanaman (cm), jumlah daun (helai), bobot segar tanaman (g), bobot kering tanaman (g), jumlah umbi per tanaman, bobot umbi segar per tanaman (g), diameter umbi (mm) dan bobot kering matahari umbi per rumpun (g). Data hasil pengamatan dianalisis menggunakan uji sidik ragam (5%) yang diikuti uji Duncan's Multiple Range Test (5%). Hasil penelitian menunjukkan bahwa berbagai jenis dan konsentrasi limbah cair penyulingan minyak atsisri daun cengkeh, nilam dan serai tidak berpengaruh dalam pengendalian *S. exigua* dan pada pertumbuhan tanaman. Namun limbah cair penyulingan minyak atisri dari cengkeh 75% memberikan hasil bawang merah tertinggi, tapi tidak berbeda nyata dengan cengkeh 100%.

Kata kunci: limbah penyulingan minyak atsiri, bawang merah, *Spodoptera exigua* Hub.

UTILIZATION OF LIQUID WASTE OF OIL DISTILLATION TO CONTROL ONION CATERPILLAR ON SHALLOT

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ABSTRACT

This study was aimed to determine the kind and concentration of oil distillation liquid waste to control onion caterpillars (*Spodoptera exigua*) and give the best growth and yield of shallot. This research had been conducted from September to November 2019 in Sumber Rahayu Village, Moyudan District, Sleman Regency at an altitude of ± 117 meter above the sea level and in Agronomy Laboratory of Faculty of Agroindustry, Yogyakarta Mercu Buana University. The study was conducted using a Completely Randomized Design (CRD) with a single factor with 3 replications, and treatment without any oil distillation liquid waste spraying as a control. The treatment factor was combination of kind and concentration of oil distillation liquid waste which was consisted of six levels, namely 75% and 100% of clove leaf oil distillation liquid waste, patchouli oil distillation liquid waste and citronella oil distillation liquid waste. The observed variables were identification of pest populations of onion caterpillar, attack intensity of onion caterpillar (%), plant height (cm), number of leaves (strands), fresh weight of plants (g), dry weight of plants (g), number of tubers per plant, fresh tuber weight per plant (g), tuber diameter (mm) and sun dry weight per tuber (g). Observation data were analyzed using Anova test (5% and) followed by Duncan's Multiple Range Test (5%) if there was significant data. The results showed that the various kinds and concentrations of oil distillation liquid waste of clove leaf, patchouli and citronella had no effect in controlling *S. exigua* and also on plant growth. However, the liquid waste of oil distillation from 75% of clove leaf could give the highest yield of shallot but did not significant with 100% of the clove leaf.

Key words: oil distillation liquid waste, shallot, onion caterpillar