

RINGKASAN

Tanaman edamame merupakan salah satu jenis tanaman sayuran yang memiliki banyak kandungan gizi. Peningkatan produktivitas tanaman edamame dapat dilakukan dengan menambahkan pupuk kompos. Kompos dapat dibuat dari limbah baglog jamur tiram (LBJT) dan limbah tongkol jagung. Limbah baglog jamur tiram mempunyai kandungan hara unsur makro seperti N 0,7%, P 0,3%, dan K 0,3% juga diperkaya unsur hara mikro lainnya, dan tongkol jagung memiliki kandungan N 0,92%, P 0,29%, dan K 1,39%. Oleh karena itu, penelitian ini bertujuan untuk: 1) mengetahui karakter pertumbuhan dan hasil tanaman edamame dengan aplikasi kompos limbah baglog jamur tiram, 2) mengetahui karakter pertumbuhan dan hasil tanaman edamame dengan aplikasi kompos limbah tongkol jagung, dan 3) mengetahui pengaruh kombinasi aplikasi kompos limbah baglog jamur tiram dan limbah tongkol jagung terhadap karakter pertumbuhan dan hasil tanaman edamame.

Penelitian ini dilaksanakan di *Screenhouse* nomor 25 Fakultas Pertanian Universitas Jenderal Soedirman, Rumah Produksi Jamur Purwanegara, Desa Singasari, Laboratorium Agroekologi, dan Laboratorium Agronomi dan Hortikultura Fakultas Pertanian Universitas Jenderal Soedirman. Penelitian dilaksanakan pada bulan November 2023 hingga Juni 2024. Rancangan yang digunakan adalah rancangan acak kelompok (RAK) yang terdiri atas dua faktor, faktor pertama adalah kompos limbah baglog jamur tiram terdiri atas B0: tanpa pemberian kompos, B1: dosis 10 t/ha, B2: dosis 20 t/ha dan faktor kedua adalah kompos limbah tongkol jagung terdiri atas J0: tanpa pemberian kompos, J1: dosis 10 t/ha, J2: dosis 20 t/ha. Variabel yang diamati meliputi tinggi tanaman, jumlah daun, luas daun, bobot kering tajuk, bobot kering akar, jumlah bintil akar, jumlah polong hampa, jumlah polong bernas, bobot polong per tanaman, bobot 25 polong per perlakuan, dan umur awal berbunga. Data yang diperoleh dianalisis menggunakan analisis ragam dengan tingkat kepercayaan 95%. Apabila berbeda nyata, maka dilakukan uji lanjut *Duncan's Multiple Range Test* (DMRT) dengan tingkat kepercayaan 95%.

Hasil penelitian menunjukkan bahwa aplikasi kompos limbah baglog jamur tiram mampu meningkatkan jumlah bintil akar, jumlah polong bernas, bobot polong per tanaman, menurunkan jumlah polong hampa, dan mempersingkat umur awal berbunga masing-masing 40,6%; 28,2%; 35,6%; 45%; dan 4%, dibandingkan pada perlakuan tanpa pemberian kompos limbah baglog jamur tiram. Aplikasi kompos limbah tongkol jagung mampu mempersingkat umur awal berbunga 2,8%, dibandingkan pada perlakuan tanpa pemberian kompos limbah tongkol jagung, sedangkan kombinasi aplikasi kompos limbah baglog jamur tiram dan limbah tongkol jagung tidak terjadi interaksi pada semua variabel pengamatan.

SUMMARY

Edamame plants are a type of vegetable that is rich in nutrients. The productivity of edamame plants can be increased by adding compost. Compost can be made from oyster mushroom baglog waste (OMBW) and corn cob waste. Oyster mushroom baglog waste contains macro nutrients such as 0.7% N, 0.3% P, and 0.3% K, and is also enriched with other micronutrients, while corn cob while corn cobs contain 0.92% N, 0.29% P, and 1.39% K. Therefore, this study aims to: 1) determine the growth characteristics and yield of edamame plants with the application of compost from oyster mushroom baglog waste, 2) determine the growth characteristics and yield of edamame plants with the application of compost from corn cob waste, and 3) determine the effect of the combination of oyster mushroom baglog waste compost and corn cob waste compost on the growth characteristics and yield of edamame plants.

This research was conducted in Screenhouse number 25 at the Faculty of Agriculture, Jenderal Soedirman University, at the Purwanegara Mushroom Production House, Singasari Village, as well as in the Agroecology Laboratory and the Agronomy and Horticulture Laboratory at the Faculty of Agriculture, Jenderal Soedirman University. The study was carried out from November 2023 to June 2024. The design used was a randomized block design (RBD) consisting of two factors. The first factor is the compost of oyster mushroom baglog waste, which consists of B0: without compost application, B1: dose 10 t/ha, B2: dose 20 t/ha, and the second factor is the compost of corn cob, which consists of J0: without compost application, J1: dose 10 t/ha, J2: dose 20 t/ha. The observed variables include plant height, number of leaves, leaf area, dry weight of the canopy, dry weight of roots, number of root nodules, number of empty pods, number of filled pods, weight of pods per plant, weight of 25 pods per treatment, and the age at which flowering begins. The data obtained were analyzed using analysis of variance (ANOVA) with a 95% confidence level. If there is a significant difference, Duncan's Multiple Range Test (DMRT) was conducted at a 95% confidence level.

The research results indicate that the application of compost from oyster mushroom baglog waste can increase the number of root nodules, number of filled pods, the weight of pods per plant, reduces the number of empty pods, and shorten the time to initial flowering by 40.6%; 28.2%; 35.6%; 45%; and 4%, respectively, compared to the treatment without the application of compost from oyster mushroom baglog waste. The application of compost from corn cob waste was able to shorten the time to initial flowering by 2.8%, compared to the treatment without the application of compost from corn cob waste, while the combined application of compost from oyster mushroom baglog waste and corn cob waste did not show any interaction in all observed variables.