

## RINGKASAN

Penanaman benih pepaya adalah satu usaha untuk mendapatkan bibit yang berkualitas. Faktor lingkungan sangat mempengaruhi pertumbuhan dan perkembangan bibit pepaya. Media tanam yang baik mengandung unsur esensial penambahan bahan organik dapat mengurangi kelarutan unsur beracun, meningkatkan sumber hara dan sumber energi dalam menunjang aktivitas mikroorganisme tanah serta meningkatkan efisiensi penggunaan pupuk anorganik. Upaya untuk mengurangi dampak negatif tersebut bercocok tanam secara organik baik media tanam maupun pupuk yang digunakan, limbah tahu cair dapat digunakan sebagai alternatif pupuk organik. Penelitian ini bertujuan untuk mendapatkan komposisi media tanam, dosis pupuk organik cair (POC) limbah tahu dan kombinasi antara media tanam dan POC limbah tahu yang paling optimal untuk pertumbuhan bibit pepaya calina.

Penelitian dilaksanakan di *Screen House* lahan pertanian organik Desa Melung, Kecamatan Kedung Banteng, Kabupaten Banyumas. Penelitian dimulai bulan Desember 2019-Februari 2020 kurang lebih 3 Bulan. Media tanam yang digunakan tanah andisol (kontrol); tanah: arang sekam (2:1) dan tanah: bokhasi: arang sekam (2:1:1). Dosis limbah tahu yang diberikan sama sebesar 0 ml/tanaman; 100 ml/tanaman; 200 ml/tanaman dan 300 ml/tanaman dengan konsentrasi 200 ml/l, setiap dua minggu sekali yaitu 35, 49, dan 63 hari setelah tumbuh (HST) dengan interval pemberian sebanyak 3 kali. Pemupukan dilakukan pada saat penyiraman pagi hari pukul 07.00-08.00 sekitar batang tanaman. POC diberikan ke tanaman bibit pepaya calina dilakukan dengan cara di kocor. Penelitian ini menggunakan rancangan penelitian acak kelompok lengkap (RAKL). Analisis data dilakukan menggunakan analisis sidik ragam (ANOVA) atau uji keragaman pada taraf F 5% dan digunakan uji lanjut Duncant Multiple Range Test (DMRT) taraf 5%. Variabel yang diamati adalah tinggi tanaman (cm), jumlah daun (helai), diameter batang (mm), luas daun (cm<sup>2</sup>), bobot tanaman segar (g), bobot tanaman kering (g), panjang akar (cm), jumlah akar (helai), jumlah ruas daun, dan panjang daun (cm).

Hasil penelitian menunjukkan adanya pengaruh perbedaan media tanam dan dosis limbah cair tahu terhadap pertumbuhan bibit pepaya calina signifikansi <0,05. Media tanam tanah: bokhasi: arang sekam (2:1:1) dan dosis limbah cair tahu 300 ml/tanaman paling efektif untuk meningkatkan pertumbuhan bibit pepaya calina terdapat unsur hara esensial yang dapat meningkatkan pertumbuhan bibit pepaya calina, sehingga dapat dimanfaatkan sebagai pengganti pupuk kimia yang mudah diaplikasikan oleh masyarakat. Perlakuan perbedaan media tanam dapat meningkatkan tinggi tanaman, jumlah daun, diameter batang, bobot tanaman segar, bobot tanaman kering, jumlah akar, jumlah ruas daun, dan panjang daun, tetapi menurunkan luas daun dan panjang akar terpanjang tanaman. Perlakuan limbah tahu meningkatkan jumlah daun, diameter batang, luas daun, dan panjang daun, tetapi menurunkan tinggi tanaman, bobot tanaman segar, bobot tanaman kering, panjang akar terpanjang, jumlah akar dan jumlah ruas daun.

## SUMMARY

*Planting seed are an effort to get quality seeds. Environmental factors greatly affect the growth and development of papaya seeds. A good growing media containing essential elements adding organic matter can reduce the solubility of toxic elements, increasing nutrient sources, and energy sources in supporting the activity of soil microorganisms and increasing the efficiency of the use of inorganic fertilizers. Efforts to reduce the negative impact of organic farming both planting media and fertilizer used, liquid tofu waste can be used as an alternative to organic fertilizer. This study aims to obtain the composition of the planting media, the dosage of liquid organic fertilizer (LOF) of tofu waste and the combination of the planting media and the liquid organic fertilizer (LOF) of tofu waste which is the most optimal for the growth of calina papaya seeds.*

*The research was conducted at the Screen House of organic farming land in Melung Village, Kedung Banteng District, Banyumas Regency. The study began in December 2019-February 2020 approximately 3 months. Growing media used by land; ground land:husk charcoal (2:1) and land:bokhasi:husk charcoal (2:1:1). The dosage of tofu waste given is equal 0 ml/plant; 100 ml/plant; 200 ml/plant dan 300 ml/plant to a concentration of 200 ml/l, once every two weeks, namely 35, 49, and 63 days after growth with an interval of administration 3 times. Fertilizing is done during morning watering at 07.00-08.00 around plant stems. liquid organic fertilizer (LOF) is given to papaya calina seedlings carried out by leaking. This study uses a complete randomized group design study (RCBD). Data analysis was performed using analysis of variance (ANOVA) or diversity test at F level 5% and Duncan's Multiple Range Test (DMRT) level of 5% was used. The observed variables were plant height (cm), number of leaves (strands), stem circumference (mm), leaf area (cm<sup>2</sup>), fresh plant weight (g), dry plant weight (g), root length (cm), number of roots (strands), number of leaf segments (strands), and leaf length (cm).*

*The results showed the influence of differences in planting media and tofu liquid waste dosages on the growth of calina papaya seedlings significance <0.05. Growing media of land:bokhasi:husk charcoal (2:1:1) and 300 ml/tofu liquid waste dosage are effective for increasing the growth of calina papaya seeds there are essential nutrients that can increase the growth of calina papaya seeds, so that it can be used as a substitute for chemical fertilizers that are easily applied by the community. The different treatment of planting media can increase plant height, number of leaves, stem circumference, weight of fresh plants, weight of dry plants, number of roots, number of leaf segment, and length of leaves, but do not increase leaf area and root length of the longest plants. Tofu waste treatment increases the number of leaves, stem circumference, leaf area, and leaf length, but does not increase plant height, fresh plant weight, dry plant weight, longest root length, number of roots and number of leaf segments.*