

RINGKASAN

Sirih hijau (*Piper betle* L.) adalah tanaman dari keluarga Piperaceae yang memiliki potensi ekonomi, tersebar luas di Asia dan Afrika. Tumbuh subur di daerah tropis, sirih hijau berkhasiat untuk kesehatan, termasuk sebagai antikanker dan antibakteri. Penelitian ini bertujuan untuk menemukan panjang *stek* dan konsentrasi pupuk terbaik guna memaksimalkan pertumbuhan tanaman.

Penelitian ini dilaksanakan di Laboratorium Agronomi, Fakultas Pertanian, Universitas Jenderal Soedirman, selama 3 bulan dari bulan Desember sampai Maret 2025. Penelitian dilaksanakan dengan Rancangan Acak Kelompok Lengkap (RAKL), Perlakuan yang dicoba adalah Empat konsentrasi pupuk daun (32-10-10). Konsentrasi yang digunakan 1,5 g/L, 1 g/L, 0,5 g/L, dan kontrol 0 g/L, dan panjang tanaman 5 cm, 10 cm, 15 cm, masing masing perlakuan diulang sebanyak 3 kali. Variabel yang diamati yaitu panjang tunas, jumlah tunas, jumlah daun, luas daun, panjang akar, bobot segar tanaman, bobot kering tanaman, bobot segar akar, bobot kering akar. Data penelitian diuji dengan uji F dan dilanjutkan dengan DMRT pada taraf α 5%.

Beberapa parameter seperti panjang akar, jumlah daun, jumlah akar, dan indeks kehijauan daun memberikan respons yang signifikan terhadap perlakuan dan waktu pengamatan. perlakuan u1 (0,5 g/l) menghasilkan jumlah daun tertinggi dan berbeda nyata dibandingkan 0 g/l dan 1,5g/l, sedangkan nilai kehijauan daun tertinggi diperoleh pada u2 (1 g/l). perlakuan u2 juga menunjukkan nilai tertinggi pada parameter kehijauan daun (23,51), jumlah akar (11,6 helai), serta bobot segar dan kering tajuk, terutama pada kombinasi u2y1. stek pendek (y1) menghasilkan nilai lebih tinggi pada kehijauan daun, jumlah daun, dan panjang akar, menunjukkan efektivitas panjang stek pendek dalam sistem hidroponik. kombinasi u2y1 memberikan respons pertumbuhan paling tinggi dibandingkan kombinasi perlakuan lainnya.

SUMMARY

Green betel (Piper betle L.) is a plant from the Piperaceae family with significant economic potential, widely distributed across Asia and Africa. The plant thrives in tropical regions and contains essential nutrients with notable health benefits, including anticancer and antibacterial properties. This research aims to determine the optimal cutting length and foliar fertilizer concentration for enhancing the growth of green betel.

This research was carried out at the Faculty of Agriculture, Universitas Jenderal Soedirman, over a period of three months, from August to November 2024. A randomized complete block design (RCBD) was used, and four treatments were tested using foliar fertilizer (32-10-10) at concentrations of 1.5 g/L, 1 g/L, 0.5 g/L, and a control (0 g/L). Each treatment was repeated three times. The observed variables included plant height, number of shoots, number of leaves, leaf area, root length, fresh plant weight, dry plant weight, fresh root weight, and dry root weight. The research data were tested using an F-test, followed by DMRT at a significance level of 5%

Several parameters, including root length, leaf number, root number, and value leaves, responded significantly to the treatments and observation times. The U1 treatment (0.5 g/L) resulted in the highest number of leaves and was significantly different from U0 and U3, while the highest value was recorded in U2 (1 g/L). The U2 treatment also showed the highest values for leaf green (23.51), root number (11.6), and both fresh and dry shoot weight, particularly in the U2Y1 combination. The short cutting (Y1) produced higher values in leaf green meter, leaf number, and root length, indicating its effectiveness in hydroponic systems. The combination of U2 and Y1 resulted in the most optimal plant growth response compared to other treatment combinations.