

ABSTRAK

ROSANNA. Efektivitas Zat Pengatur Tumbuh dan Pupuk Organik dalam Mendukung Teknologi Budidaya Tanaman Kentang (*Solanum Tuberosum L.*) di Dataran Medium (dibimbing oleh Muslimin Mustafa, Baharuddin, dan Enny Lisan)

Penelitian ini bertujuan mengkaji pengaruh konsentrasi paclobutrazol terhadap pertumbuhan dan hasil tanaman kentang di dataran medium, pengaruh frekuensi pupuk organik cair eceng gondok terhadap pertumbuhan dan hasil tanaman kentang di dataran medium, mempelajari pengaruh interaksi antara penggunaan konsentrasi paclobutrazol dan frekuensi pemberian pupuk organik cair enceng gondok terhadap lingkungan tumbuh, pertumbuhan, dan hasil tanaman kentang di dataran medium.

Penelitian menggunakan Percobaan Faktorial dua faktor diulang tiga kali, dilanjutkan dengan uji Duncan pada tingkat signifikansi 5%. Lokasi penelitian di Kecamatan Parangloe Kabupaten Gowa mulai September 2012 sampai dengan maret 2013.

Hasil penelitian menunjukkan bahwa penggunaan paclobutrazol 0 ml l⁻¹ dan frekuensi 4x pemberian pupuk organik cair eceng gondok yang memberikan pengaruh terbaik ditunjukkan oleh parameter tinggi tanaman 36,9 cm, jumlah daun yang gugur 133,2. Untuk penggunaan paclobutrazol (3 ml l⁻¹) dan frekuensi 4x pemberian pupuk organik cair enceng gondok, yaitu 26,38, volume akar 3,22. Bobot kering akar pada paclobutrazol (3 ml l⁻¹) dengan frekuensi tanpa pemberian eceng gondok (kontrol) sekitar 1,97, bobot brangkas pada paclobutrazol (0 ml l⁻¹) dan frekuensi 4x 16,35. Demikian pula S/R ratio penggunaan paclobutrazol (0 ml l⁻¹) dengan frekuensi 2x 18,04. Untuk kanopi atas pada paclobutrazol (kontrol) dengan frekuensi pemberian pupuk organik cair (kontrol) sekitar 0,14 joule, kanopi tengah, paclobutrazol (kontrol) dengan frekuensi 4x pemberian 0,11 joule, dan kanopi bawah 0,10 joule. Pada aplikasi paclobutrazol sebanyak 3 ml l⁻¹ dengan frekuensi 4x memberikan pengaruh terbaik terhadap jumlah umbi per plot, yaitu 64,0 umbi dibandingkan dengan aplikasi paclobutrazol sebanyak 1 ml l⁻¹ dengan frekuensi 4x, masing-masing sebanyak 54,2 umbi dan 53,1 umbi dengan aplikasi paclobutrazol 1 ml l⁻¹ dan frekuensi 3x pemberian. Pada bobot umbi kentang per plot aplikasi paclobutrazol sebanyak 3 ml l⁻¹ dengan frekuensi 3x menghasilkan bobot umbi lebih tinggi (1,99 kg plot⁻¹) dibandingkan dengan aplikasi paclobutrazol 1 ml l⁻¹ dengan frekuensi 3x dan tanpa aplikasi paclobutrazol dengan frekuensi 3x dengan bobot berturut-turut 1,87 kg plot⁻¹ dan 1,49 kg plot⁻¹. Interaksi penggunaan paclobutrazol (3 ml l⁻¹) dengan frekuensi 4x memberikan pengaruh terbaik terhadap bobot umbi.

Kata kunci: paclobutrazol, pupuk organik cair, eceng gondok, kalosi



ABSTRACT

ROSANNA. *The Effectiveness of Growth Regulator and Organic Fertilizers in Supporting Cultivation Technology of Potato Plant (*Solanum tuberosum L.*) in Medium Plain (Supervised by Muslimin Mustafa, Baharuddin, and Enny Lisan)*

This study aims to examine the effect of paclobutrazol concentration on the growth and yield of potatoes in medium plain; the effect of the frequency of water hyacinth liquid organic fertilizer on the growth and yield of potatoes in medium plain; and the effect of the interaction between paclobutrazol concentration and the frequency of the use of water hyacinth liquid organic fertilizer on the growing environment and yield of potato plant in medium plain.

The research used a two-factor factorial experiment with three replications followed with Duncan's test at 5% significance level. The research location was Parangloe subdistrict, Gowa regency, and the duration of study was September 2012 to March 2013.

The results showed that the use of paclobutrazol $0 \text{ ml } 1^{-1}$ and four-time frequency of water hyacinth liquid organic fertilizer gave the best effect, as it was shown in two parameters, plant height (36.9 cm) and number of leaves (133.2). In the use of paclobutrazol of $3 \text{ ml } 1^{-1}$ and four-time frequency of water hyacinth liquid organic fertilizer, the length of the root was 26.38, while the root volume was 3.22. Root dry weight in the use of paclobutrazol of $3 \text{ ml } 1^{-1}$ without the use of water hyacinth liquid organic fertilizer (control) was approximately 1.97; while the weight of stover in the use of paclobutrazol of $0 \text{ ml } 1^{-1}$ and four-time frequency of water hyacinth liquid organic fertilizer was 16.35. Furthermore, the S/R ratio of the use of paclobutrazol of $0 \text{ ml } 1^{-1}$ with two-time frequency of water hyacinth liquid organic fertilizer was 18.04. The top canopy in the use of paclobutrazol (control) with the frequency of the use of water hyacinth liquid organic fertilizer (control) was approximately 0.14 joules; while the middle canopy in the use of paclobutrazol (control) with four-time frequency was 0.11 joules. Meanwhile, the lower canopy was 0.10 joules. Paclobutrazol application of $3 \text{ ml } 1^{-1}$ with four-time frequency water hyacinth liquid organic fertilizer provides the best influence on the number of tubers per plot (64.0 tubers), compared with the result in paclobutrazol application of $1 \text{ ml } 1^{-1}$ with four-time frequency of water hyacinth liquid organic fertilizer (54.2 tubers) and the result in paclobutrazol application of $1 \text{ ml } 1^{-1}$ and three-time frequency of water hyacinth liquid organic fertilizer (53.1 tubers). Paclobutrazol application of $3 \text{ ml } 1^{-1}$ with three-time frequency of water hyacinth liquid organic fertilizer produced higher weight of tubers ($1.99 \text{ kg plot}^{-1}$), compared with the application of paclobutrazol of $1 \text{ ml } 1^{-1}$ with three-time frequency of water hyacinth liquid organic fertilizer (weight of tubers: $1.87 \text{ kg plot}^{-1}$), and three-time frequency of water hyacinth liquid organic fertilizer without paclobutrazol application (weight of tubers: $1.49 \text{ kg plot}^{-1}$). The interaction between paclobutrazol application of $3 \text{ ml } 1^{-1}$ and four-time frequency of water hyacinth liquid organic fertilizer gave the best effect on tuber weight.

Keywords: paclobutrazol, liquid organic fertilizer, water hyacinth, Kalosi

