

**PENGARUH PAKLOBUTRAZOL DAN PUPUK ORGANIK CAIR
TERHADAP PERTUMBUHAN, HASIL DAN KADAR THIAMIN
HIDROKLORIDA (VITAMIN B1) PADI
(*Oryza sativa* L 'CEMPO IRENG')**

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Intisari

Padi hitam (*Oryza sativa* L. 'Cempo ireng') merupakan tanaman pangan yang mempunyai potensi cukup besar untuk dikembangkan, karena padi hitam mengandung antioksidan, vitamin B1, makroelemen serta mineral yang sangat baik untuk kesehatan. Oleh karena itu, produktivitas padi hitam harus ditingkatkan, salah satunya dengan aplikasi paklobutrazol dan pupuk organik cair. Tujuan penelitian ini adalah untuk mengevaluasi pengaruh paklobutrazol dan pupuk organik cair terhadap pertumbuhan, hasil dan kadar vitamin B1 tanaman padi hitam. Penelitian menggunakan RALCK pola faktorial dengan 2 faktor. Faktor pertama adalah aplikasi paklobutrazol yang terdiri atas 4 konsentrasi, yaitu: 0 ppm (Kontrol), 10 ppm, 20 ppm atau 30 ppm diberikan pada saat perkecambahan biji. Faktor kedua adalah aplikasi pupuk organik cair yang terdiri atas 4 konsentrasi, yaitu: 0 ml/L (kontrol), 0,6 ml/L, 1,2 ml/L dan 1,8 ml/L diberikan saat tanaman berumur 4, 8 dan 12 minggu. Analisis data dengan ANAVA, jika terdapat perbedaan dilanjutkan dengan DMRT. Analisis ini dilakukan dengan menggunakan *Software SPSS* 21.0 pada taraf 5%. Hasil penelitian menunjukkan bahwa aplikasi paklobutrazol 10 ppm meningkatkan rerata jumlah anakan, berat 100 gabah isi, dan berat total gabah petanaman. Aplikasi paklobutrazol 30 ppm menurunkan tinggi batang tanaman, mempercepat rerata umur keluar daun bendera dan malai, meningkatkan rerata kadar klorofil, kadar pati, kadar amilosa, kadar vitamin B1, indeks dan kerapatan stomata atas, rerata diameter batang, dan diameter korteks. Aplikasi pupuk organik 1,2 ml/L meningkatkan rerata panjang malai, rerata umur keluar daun bendera dan malai, berat 100 gabah isi, berat total gabah petanaman, meningkatkan rerata kadar klorofil, vitamin B1, ketebalan batang dan korteks, tetapi menurunkan kadar pati dan amilosa. Kombinasi aplikasi paklobutrazol dan pupuk organik cair meningkatkan pertumbuhan, hasil dan kadar thiamin hidroklorida (vitamin B1) dibanding perlakuan kontrol atau perlakuan tunggal.

Kata Kunci: Padi hitam, paklobutrazol dan pupuk organik cair, vitamin B1

EFFECTS OF PACLOBUTRAZOL AND LIQUID ORGANIC FERTILIZER ON GROWTH, YIELD AND THIAMIN HYDROCHLORIDE (VITAMIN B1) LEVEL OF RICE (*Oryza Sativa*. L, 'CEMPO IRENG')

Abstraks

Black rice (*Oryza sativa* L. 'Cempo ireng') is a crop that has a potential to be developed, because the black rice contains antioxidants, vitamins B1, makroelemen and minerals that are good for health. Therefore, black rice productivity must be improved. One of methods for improving productivity is by application of paclobutrazol and liquid organic fertilizer. The purpose of this study was to evaluate the effect of paclobutrazol and liquid organic fertilizer on the growth, yield and levels of vitamin B1 in black rice and to determine the concentration paklobutrazol and liquid organic fertilizer that effectively increase growth, yield and levels of vitamin B1 in black rice. Research was done at the Green House belongs to the Faculty of Biology and agricultural areas in Pogung Kidul by using a completely randomized design factorial pattern. The first factor was paclobutrazol application which consist of 4 different concentrations namely 0 ppm (control), 10 ppm, 20 ppm or 30 ppm, where as the second factor was application of liquid organic fertilizer which consist of 4 different concentrations, namely 0 ml/L (control), 2 ml/L, 4 ml/L, or 6 ml/L. Each combination treatment has 6 replicates. Paclobutrazol was given during germination where as liquid organic fertilizer was applied at weeks 4, 6 and 8. Data were analyzed by using ANOVA, if there is a difference followed by DMRT. The analysis was done using SPSS 21.0 software. Result of application 10 ppm paclobutrazol increased the average number of tillers, weight of 100 grain, and the average grain weight per plant. Applications of 30 ppm paclobutrazol reduced stems lenght, accelerating the average age of flag leaves and panicles emergence, increasing the average levels of chlorophyll, starch, amylose content, vitamin B1, index and density of stomata, and average of stem and cortex diameter. Application of 1,2 ml/L organic fertilizers also increased the average length of panicle, the average age of flag leaf and panicle emergence, average weight of 100 grain, the average weight of total grain crop, increased average levels of chlorophyll, vitamin B1, stem and cortex diameter, but reduced starch and amylose contents. Combination of paclobutrazol and liquid organic fertilizer applications increases the growth, yield and levels of thiamin hydrochloride (vitamin B1) compared to control treatment or single treatment.

Keywords: black rice, paclobutrazol applications and liquid organic fertilizer, Thiamin Hydrochloride (Vitamin B1)