

**PENGARUH PAKLOBUTRAZOL DAN PUPUK GRANUL ORGANIK
TERHADAP PERTUMBUHAN DAN HASIL PADI HITAM
(*Oryza sativa* L. 'CEMPO IRENG')**

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INTISARI

Padi beras hitam (*Oryza sativa* L. 'Cempo Ireng') adalah salah satu jenis padi lokal berasal dari Yogyakarta, memiliki banyak manfaat untuk kesehatan karena kaya akan mineral dan antosianin dibanding jenis padi lainnya. Paklobutrazol merupakan senyawa retardan penghambat sintesis giberelin yang menyebabkan kekerdilan pada tanaman, namun dapat meningkatkan kadar klorofil. Kandungan pupuk organik seperti N,P,K dapat meningkatkan kesuburan tanah, merangsang pertumbuhan vegetatif, dan meningkatkan produktivitas tanaman. Secara umum, penelitian ini bertujuan untuk mempelajari efek paklobutrazol dan pupuk granul organik terhadap pertumbuhan dan hasil tanaman padi hitam (*Oryza sativa* L. 'Cempo Ireng'). Dalam penelitian ini, biji padi disemai dalam media yang disiram paklobutrazol konsentrasi 0 ppm (kontrol), 12,5 ppm, 25 ppm, atau 50 ppm. Setelah umur dua minggu, semai padi dipindahkan ke sawah dan diberi perlakuan pemberian pupuk organik atau tanpa pupuk. Pengukuran tinggi tanaman, perhitungan jumlah daun, dan jumlah anakan dilakukan setiap dua minggu sekali sampai umur 10 minggu. Pemberian pupuk organik dilakukan saat tanaman padi berumur 70 hari dan 84 hari sebanyak 0,45 kg per 6 m² luas tanah. Setelah panen, dilakukan beberapa pengamatan, diantaranya persentase biji isi, berat 100 biji, kandungan antioksidan dan kandungan Fe pada bulir beras hitam. Data dianalisis menggunakan ANOVA *One way* untuk kombinasi paklobutrazol dan pupuk, dan ANOVA *two way* untuk melihat interaksi paklobutrazol dan pupuk granul organik, bila terdapat beda nyata dilanjutkan dengan uji DMRT pada tingkat kesalahan 5%. Hasil yang diperoleh menunjukkan semakin tinggi pemberian konsentrasi paklobutrazol terhadap pertumbuhan dan hasil tanaman padi hitam dapat menekan pertumbuhan tinggi tanaman, jumlah daun, jumlah anakan, berat 100 biji dan kandungan antioksidan, namun meningkatkan aktivitas nitrat reduktase. Pupuk granul organik tidak berpengaruh terhadap persentase biji isi, klorofil total. Aplikasi kombinasi konsentrasi paklobutrazol dan pupuk terhadap pertumbuhan dan hasil tanaman padi hitam tidak berpengaruh terhadap klorofil total, berat 100 biji, persentase biji isi, aktivitas nitrat reduktase, namun berbeda nyata terhadap kandungan zat besi dan kandungan antioksidan padi hitam (*Oryza sativa* L. 'Cempo Ireng').

Kata kunci: Padi hitam 'Cempo Ireng', paklobutrazol, pupuk organik, Fe dan antioksidan.

**EFFECTS OF PACLOBUTRAZOL AND ORGANIC GRANULE
FERTILIZER ON GROWTH AND YIELD OF BLACK RICE
(*Oryza sativa* L. 'CEMPO IRENG')**

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ABSTRACT

Black rice (*Oryza sativa* L. 'Cempo Ireng') is a type of local rice came from Yogyakarta, it has many benefits for human health because it has rich content of minerals and compared to other rice varieties. Paclobutrazol is an inhibitor of gibberellins biosynthesis and it causing dwarfism in plants, but it chlorophyll content. Content of organic fertilizers such as N, P, K can increase soil fertility, stimulates vegetative growth, and improve crop productivity. This research was aimed to study the effects of paclobutrazol and organic fertilizer on growth and yield of black rice plant (*Oryza sativa* L. 'Cempo Ireng'). In this study, the rice seeds were sown in the media soaked with paclobutrazol concentrations of 0 ppm (control), 12,5 ppm 25 ppm, or 50 ppm. After two weeks, seedlings were transferred to the rice fields and treated with organic fertilizer or without fertilizer. Plant height measurement, calculation of the number of leaves, and the number of tillers was performed every two weeks until the age of 10 weeks. The application of the organic fertilizer was done when the rice plant was 70 days and 84 days as much as 0.45 kg per 6 m² land area. After 5 months, several observations were carried out including the percentage of seed dry weight, weight of 100 seeds, content of antioxidants and the content of Fe in black rice grain. Data were analyzed using ANOVA *One way* for combination organic fertilizer and paclobutrazol, and ANOVA *two way* for interaction between organic fertilizer and paclobutrazol, when there was a real difference then continued with the test on the level of significant DMRT 5%. The results obtained show that the increase in the concentration of paclobutrazol on plant reduced plant growth, number of leaves, number of tillers, weight 100 seeds, and antioxidant content, but increasing the activity of nitrate reductase and percentage dry weight. Organic granule fertilizer does not have an effect on percentage of seed dry weight and content of chlorophyll in black rice. Application of combined organic fertilizer and paclobutrazol for the growth and yield, does not have an effect on chlorophyll content, weight of 100 seeds, percentage of seed dry weight, and nitrate reductase activity, but have an effect on plant growth, number of leaves, number of tillers, content of antioxidant and the content of Fe in black rice grain.

Keywords: Black rice 'Cempo Ireng', paclobutrazol, organic fertilizer, Fe and antioxidants