

PLANT GROWTH AND ANTHOCYANIN CONTENT OF BLACK RICE (*Oryza sativa* L. 'Cempo Ireng') TREATED WITH PACLOBUTRAZOL AND METHYL JASMONATE

Liliana Prabanuraini

15/386953/PBI/1352

ABSTRACT

Rice is a major food crop in Indonesia and one of the rice crop is rice black rice. Black rice has a high potency to be developed because it possesses high nutritional content but has not been widely cultivated by the farmer due to low productivity and long harvest period. This study aimed to evaluate the growth and anthocyanin content of black rice from plants treated with paclobutrazol and methyl jasmonate. This study used a factorial block design. The first factor was paclobutrazol (0; 12.5; 25 and 50 ppm). The second factor was methyl jasmonate (0; 2.5; 5 and 7.5 mM), for each combination five replications were made. Black rice that germinated in a plastic tray containing a growth medium and added with paclobutrazol of 0 ppm (control), 12.5 ppm, 25 ppm, or 50 ppm. When seedlings were 2 weeks old, they were replanted in a plastic pot. Methyl jasmonate was applied at 4 and 9 weeks after planting. Growth parameters observed were plant height, number of tillers, number of leaves, panicle length, root length, weight of grain contents, empty grain and percentage of grain contents. The results showed that the treatment of paclobutrazol decreased the mean plant height while methyl jasmonate did not decrease. The number of tillers tended to increase after the application of paclobutrazol and methyl jasmonate. Chlorophyll content was not significantly different to control while the anthocyanin level increased in the treatment 25 ppm paclobutrazol and 7.5 mM methyl jasmonate. The application of paclobutrazol and methyl jasmonate can change the structure of stem cell parenchyma that become more dense and there was no intercellular space.

Keyword : Black rice, anthocyanin, paclobutrazol, methyl jasmonate

PERTUMBUHAN TANAMAN DAN KADAR ANTOSIANIN BERAS HITAM (*Oryza sativa* L. 'Cempo Ireng') HASIL PERLAKUAN PAKLOBUTRAZOL DAN METIL JASMONAT

Liliana Prabanuraini

15/386953/PBI/1352

INTISARI

Tanaman padi merupakan tanaman pangan utama di Indonesia, dan salah satu jenis tanaman padi adalah padi beras hitam. Tanaman padi beras hitam ini memiliki potensi untuk dikembangkan karena memiliki kandungan gizi yang tinggi, namun belum banyak dibudidayakan masyarakat karenarendahnya produktivitas dan masa panen yang lama. Penelitian ini bertujuan untuk mengevaluasi pertumbuhan, hasil tanaman, kadar klorofil, kadar antosianin, anatomi batang dan akar padi hitam hasil perlakuanpaklobutrazol dan metil jasmonat. Penelitian ini menggunakan Rancangan Kelompok, pola faktorial. Faktor pertama adalah Paklobutrazol (0; 12,5; 25 dan 50 ppm). Faktor kedua adalah metil jasmonat (0; 2,5; 5 dan 7,5 mM), masing-masing kombinasi dengan 5 ulangan. Benih padi beras hitam dikecambahkan dalam pot yang diberi berbagai variasi konsentrasi paklobutrazol dan setelah kecambah berumur 2 minggu dipindahkan kedalam pot. Metil jasmonat diaplikasikan saat tanaman berumur 4 dan 9 minggu. Parameter pertumbuhan yang diukur yaitu tinggi tanaman, jumlah anakan, jumlah daun, panjang malai, panjang akar, berat gabah isi, gabah kosong dan presentasi gabah isi. Hasil penelitian menunjukkan bahwa semua perlakuan paklobutrazol menurunkan rerata tinggi tanaman sedangkan metil jasmonat tidak mempengaruhi rerata tinggi tanaman. Jumlah anakan cenderung meningkat pada tanaman yang mendapat perlakuan paklobutrazol dan metil jasmonat. Kadar klorofil tidak berbeda nyata antar perlakuan sedangkan kadar antosianin meningkat pada tanaman yang mendapat perlakuan paklobutrazol 25 ppm dan metil jasmonat 7,5 mM. Aplikasi paklobutrazol dan metil jasmonat dapat merubah struktur sel parenkim batang menjadi lebih padat dan tidak terdapat ruang antar sel.

Kata Kunci : Padi beras hitam, antosianin, paklobutrazol, metil jasmonat