PENGARUH SITOKININ DAN PUPUK KANDANG TERHADAP PERTUMBUHAN, HASIL, SERTA KANDUNGAN ANTOSIANIN PADI HITAM (*Oryza sativa* L. 'Cempo Ireng')

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INTISARI

Dewasa ini kesadaran manusia akan sumber pangan fungsional semakin lama semakin tinggi sehingga mendorong upaya untuk mengkonservasi beberapa varietas lokal yang berpotensi. Padi hitam mengandung vitamin, mineral, dan antosianin yang berperan sebagai antioksidan. Produksinya masih tergolong rendah karena umur panen yang lama, mudah roboh, dan kesuburan tanah. Penelitian ini bertujuan untuk mengevaluasi pengaruh pupuk kandang dan sitokinin terhadap pertumbuhan, hasil, dan kadar antosianin padi hitam 'Cempo Ireng'. Penelitian dilakukan di Kolongan Beha Baru, Sangihe, Sulawesi Utara. Media tanam yang digunakan berasal dari Desa Hesang, Sangihe, Sulawesi Utara. Penelitian menggunakan rancangan acak kelompok lengkap dengan enam ulangan. Faktor pertama menggunakan sitokinin dengan konsentrasi 0 ppm (S0), 50 ppm (S1), 100 ppm, (S2) atau 150 ppm(S3) sedangkan faktor kedua pupuk kandang babi dengan dosis setara dengan 0 ton/ha (P0), 5 ton/ha (P1), 10 ton/ha (P2), atau 15 ton/ha (P3). Pupuk kandang diberikan pada awal penanaman dan diinkubasi selama empat minggu. Aplikasi sitokinin dilakukan pada saat tanaman berumur 1, 12, dan 14 minggu setelah tanam. Parameter yang diamati meliputi tinggi tanaman, jumlah anakan, kadar klorofil, umur berbunga, panjang malai, persentase gabah isi, berat kering 100 gabah isi, pati, amilosa, dan antosianin. Data dianalisis mengunakan *General linear multivariative* dan dilanjutkan dengan Duncan's multiple range test (DMRT) pada taraf 5% menggunakan SPSS V.16.

Hasil penelitian menunjukkan perlakuan pupuk kandang dan/atau sitokinin berpengaruh nyata terhadap peningkatan tinggi dan jumlah anakan. Perlakuan pupuk kandang tunggal atau dikombinasikan dengan sitokinin dapat mempercepat umur berbungga. Kadar klorofil tidak dipengaruhi sitokinin dan/atau pupuk kandang. Panjang malai, persentase gabah isi, kadar pati, kadar amilosa dipengaruhi oleh perlakuan tunggal sitokinin atau pupuk kandang. Perlakuan tunggal pupuk kandang berpengaruh nyata terhadap berat 100 gabah isi. Kadar antosianin (*Cyanidin 3-glucoside*) tertinggi diperoleh pada beras hitam yang berasal dari tanaman dengan kombinasi perlakuan sitokinin 100 ppm dan pupuk kandang 15 ton/ha yaitu sebesar 258.1 mg/100g, sedangkan yang terendah diperoleh pada beras hitam yang berasal dari tanaman kontrol yaitu sebesar 102.8 mg/100g. Dari penelitian ini dibuktikan bahwa pertumbuhan, hasil, dan antosianin padi hitam dapat ditingkatkan dengan perlakuan pupuk dan sitokinin.

Kata kunci: *padi hitam, pupuk kandang, sitokinin, cyandin 3-glucoside,*

THE EFFECT OF CYTOKININ AND MANURE ON GROWTH, YIELD AND ANTHOCYANIN CONTENT OF BLACK RICE (*Oryza sativa* L. 'Cempo Ireng')

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ABSTRACT

Nowadays the people awareness of functional food has been encouraging conservation programme of local varieties. Black rice contains vitamin, mineral, and anthocyanin which act as an antioxidant. However, the productivity is still low because it has a long harvest period, easily collapsed, and low soil fertility. This experiment was aimed to find out effect of cytokinin and pig manure on growth, yield, and anthocyanin content black rice 'Cempo Ireng'. This experiment was conducted at Kolongan Beha Baru, Sangihe, North Sulawesi from December 2015 to May 2016. Growth medium used was from Hesang Village, Sangihe, North Sulawesi. Design of experiment used was a Random Block Design consisted of six replication. The first factor was 0 ppm (S0), 50 ppm (S1), 100 ppm (S2), 150 ppm (S3) cytokinin and the second factor was 0 (P0), 5 (P1), 10 (P2), 15 (P3) ton pig manure ha^{-1}. Pig manure was given at early planting and was incubated in growth medium for 4 weeks. When age of seed reached 14 days, the seedling was moved to growth medium. Cytokinin was applied for three times: 1, 12, 14 weeks after transplanting. The parameter were plant height, tiller number, chlorophyll content, age flowering, panicle length, percentage grain filling/panicle, 100 grain weight, starch, amylosa and anthocyanin. Data were analysis using general linear multivariative and then continued with the test on the level of significant DMRT 5%.

The result showed that manure treatment and/or cytokinin treatment significantly affect on plant height and tiller number. Single treatment manure or combination with cytokinin can shorten flowering. Single treatment of cytokinin and/or maure did not significantly affect chlorophyll content. Panicle length, percentage grain filling, starch, amylase content were significantly affected by cytokinin treatment or manure. Single treatment manure significantly affect on 100 grain weight. The highest anthocyanin (*Cyanidin 3-glucoside*) of 258.1 mg/100g was obtained on plants treated with 100 ppm cytokinin and pig manure dosage equal 15 $ton.ha^{-1}$. The lowest anthocyanin (*Cyanidin 3-glucoside*) of 102.8 mg/100g was obtained on control. This research shows that growth, yield and anthocyanin can be improved by cytokinin and pig manure treatment.

Keyword : black rice, manure, cytokinin, cyandin 3-glucoside,