

PENGARUH PAKLOBUTRAZOL DAN SITOKININ TERHADAP
PERTUMBUHAN, PRODUKSI, KANDUNGAN ANTOSIANIN DAN *CRUDE*
PROTEIN JAGUNG (*Zea mays L.*) HITAM

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INTISARI

Jagung merupakan tanaman sereal semusim dan menjadi makanan pokok kedua setelah beras di Indonesia. Jagung memiliki beberapa macam warna bulir, dari kuning, ungu, putih, biru, hitam. Jagung hitam memiliki kandungan antioksidan berupa antosianin yang berfungsi sebagai kardioprotektif, mencegah diabetes, mencegah kanker dan penyakit yang lain. Peningkatan hasil dan indeks panen dapat dilakukan dengan pemberian *growth retardant* dan sitokinin yang dikenal membantu alokasi asimilat ke organ *sink*. Penelitian ini bertujuan untuk mengevaluasi pengaruh paklobutrazol dan sitokinin terhadap pertumbuhan, hasil, kandungan antosianin dan *crude* protein dalam jagung hitam. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) pola Faktorial. Faktor pertama adalah *growth retardant* berupa paklobutrazol dengan empat taraf (0, 5, 10 dan 20 ppm), faktor kedua adalah sitokinin sintetik berupa *Benzylamino purin* dengan empat taraf (0, 25, 50 dan 75 ppm), masing-masing kombinasi perlakuan dengan 5 ulangan. Aplikasi paklobutrazol pada tanaman jagung saat berumur 3 minggu setelah tanam, dan aplikasi sitokinin saat berumur 5 dan 7 minggu setelah tanam. Hasil penelitian menunjukkan bahwa perlakuan paklobutrazol 20 ppm dan sitokinin 75 ppm menurunkan tinggi tanaman, namun tidak mempengaruhi jumlah daun, kombinasi perlakuan paklobutrazol 20 ppm dan sitokinin 75 ppm meningkatkan luas daun, kadar klorofil daun, indeks stomata daun dan meningkatkan ketebalan mesofil daun. Dalam hasil panen perlakuan paklobutrazol 20 ppm dengan sitokinin 75 ppm mampu meningkatkan berat 100 biji, berat total pipilan/tongkol dan indeks panen tanaman jagung hitam, kombinasi paklobutrazol dan sitokinin mampu meningkatkan kandungan antosianin dalam biji, namun cenderung menurunkan *crude* protein biji.

Kata kunci: Jagung hitam, paklobutrazol, sitokinin

EFFECT OF PACLOBUTRAZOL AND CYTOKININS ON GROWTH, YIELD,
ANTHOCYANIN CONTENT AND CRUDE PROTEIN OF BLACK CORN
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ABSTRACT

Corn is a seasonal crop and becomes the second staple food after rice in Indonesia. Corn has several colors of grain, from yellow, purple, white, blue and black. Black corn has antioxidant content, that is anthocyanin that function as cardio protective, prevent diabetes, prevent cancer and other diseases. Increasing yield and harvest index could be done using growth retardant and cytokinin which is known to promote the allocation of assimilate to sink organs. This study was aimed to evaluate the effect of paclobutrazol and cytokinin on growth, yield, anthocyanin content and *crude* protein in black maize. Factorial Complete Randomized Design (CRD) was used in the experiment. The first factor was application of growth retardant in the form of paclobutrazol with four levels (0, 5, 10 and 20 ppm), the second factor was synthetic cytokinin in the form of *Benzylamino purin* with four levels (0, 25, 50 and 75 ppm), each treatment combination has 5 replications. Paclobutrazol was applied at 3 weeks after planting, while cytokinin was applied at 5 and 7 weeks after planting. The results showed that application of 20 ppm paclobutrazol and 75 ppm cytokinins decreased plant height, but did not affect the number of leaves. Combination of 20 ppm paclobutrazol and 75 ppm cytokinin increased leaf area, leaf chlorophyll content, leaf stomata index and leaf mesophyll thickness. For the yield, combination 20 ppm of paclobutrazol with 75 ppm cytokinin increase the weight of 100 seeds, total weight of seed/cobs and the harvest index of the plants, the combination of paclobutrazol and cytokinin increase anthocyanin content in the seed, but tends to decrease the *crude* protein of the seed.

Keywords: Black corn, paclobutrazol, cytokinin.