

## RINGKASAN

Jagung ungu merupakan varietas jagung yang mengandung pigmen antosianin dengan warna ungu pada bijinya memiliki kandungan nutrisi lain antara lain seperti vitamin, mineral, dan serat, serta potensinya sebagai bahan baku industri pangan. Sistem olah tanah konvensional melibatkan penggalian dan pembalikan tanah, sedangkan sistem olah tanah konservasi berfokus pada pengurangan gangguan tanah dan pemeliharaan residu tanaman di permukaan tanah. Penelitian ini bertujuan untuk mengetahui pengaruh olah tanah dan dosis kasgot terhadap pertumbuhan, fisiologi, dan hasil jagung ungu dengan dosis NPK rendah.

Penelitian dilaksanakan mulai bulan Maret-Agustus 2023 di Lahan Percobaan *Ex-Farm* Universitas Jenderal Soedirman dan analisis dilakukan di Laboratorium Agroekologi, Laboratorium Agronomi Fakultas Pertanian, Fakultas Pertanian Universitas Jenderal Soedirman. Rancangan yang digunakan yaitu Rancangan Acak Kelompok faktorial dengan dua faktor perlakuan dan tiga ulangan. Perlakuan pertama yaitu sistem olah tanah (T), yaitu T0 : Tanpa olah tanah, T1 : Olah tanam minimum, T2 : Olah tanah sempurna. Perlakuan kedua adalah dosis kasgot (P), yaitu P1 : Kasgot 5 t/ha, P2 : Kasgot 10 t/ha, P3 : Kasgot 15 t/ha. Variabel yang diamati antara lain tinggi tanaman, jumlah daun, luas daun, diameter batang, bobot segar tanaman, bobot kering tanaman, kandungan klorofil daun, kandungan antosianin biji jagung ungu, panjang tongkol dengan kelobot, panjang tongkol tanpa kelobot, berat tongkol dengan kelobot, berat tongkol tanpa kelobot, diameter tongkol dengan kelobot, diameter tongkol tanpa kelobot. Hasil penelitian dianalisis menggunakan uji F dan diuji lanjut *Duncan's Multiple Range Test* (DMRT) pada taraf 95% apabila terdapat beda nyata.

Hasil penelitian menunjukkan bahwa perlakuan olah tanah berpengaruh terhadap tinggi tanaman, jumlah daun, luas daun, diameter batang, bobot segar tanaman, bobot kering tanaman, panjang tongkol dengan kelobot, panjang tongkol tanpa kelobot, berat tongkol dengan kelobot, berat tongkol tanpa kelobot, diameter tongkol dengan kelobot, dan diameter tongkol tanpa kelobot. Perlakuan tanpa olah tanah memberikan hasil terbaik terhadap variabel tinggi tanaman sebesar 0,3%, jumlah daun sebesar 1,14%, luas daun sebesar 0,42%, diameter batang sebesar 0,27%, bobot segar tanaman sebesar 1,46%, bobot kering tanaman sebesar 0,24%, panjang tongkol dengan kelobot sebesar 1,51%, panjang tongkol tanpa kelobot sebesar 0,23%, berat tongkol dengan kelobot sebesar 0,43%, berat tongkol tanpa kelobot sebesar 1,61%, diameter tongkol dengan kelobot sebesar 41,90 mm, dan diameter tongkol tanpa kelobot sebesar 0,2%.

Dosis kasgot yang berbeda berpengaruh terhadap bobot segar tanaman dan bobot kering tanaman. Dosis 15 t kasgot/ha memberikan hasil terbaik terhadap variabel bobot segar tanaman sebesar 0,56%, bobot kering tanaman sebesar 0,76%, diameter tongkol dengan kelobot sebesar 0,06%, dan berat tongkol tanpa kelobot sebesar 0,37%. Tidak terdapat interaksi antara olah tanah dan dosis kasgot terhadap pertumbuhan dan hasil jagung ungu.

**Kata kunci :** Jagung ungu, Olah tanah, Kasgot

## SUMMARY

*Purple corn is a maize variety that contains anthocyanin pigments with purple color in its kernels, and it also contains other nutrients such as vitamins, minerals, and fiber. Additionally, it has potential as a raw material for the food industry. Conventional soil tillage involves soil digging and overturning, while conservation tillage systems focus on reducing soil disturbance and maintaining plant residue on the soil surface. This study aims to determine the effects of soil tillage and kasgot dosage on the growth, physiology, and yield of purple corn with low NPK dosage.*

*The research was conducted from March-August 2023 at the Ex-Farm Experimental Land of Jenderal Soedirman University and the analysis was conducted at the Agroecology Laboratory, Agronomy Laboratory, Faculty of Agriculture, Jenderal Soedirman University. The design used was Randomized Block Design factorial with two treatment factors and three replications. The first treatment is the tillage system (T), namely T0 : No tillage, T1: Minimum tillage, T2: Complete tillage. The second treatment is the dose of kasgot fertilizer (P), namely P1: 5 t/ha kasgot, P2: 10 t/ha kasgot, P3: 15 t/ha kasgot. The observed variables include plant height, leaf count, leaf area, stem diameter, plant wet weight, plant dry weight, leaf chlorophyll content, anthocyanin content of purple corn seeds, cob length with husk, cob length without husk, cob weight with husk, cob weight without husk, cob diameter with husk, and cob diameter without husk. The results were analyzed using the F test and further tested by Duncan's Multiple Range Test (DMRT) at the 95% level if there were significant differences.*

*The research results showed that tillage treatment affected plant height, number of leaves, leaf area, stem diameter, plant fresh weight, plant dry weight, cob length with cob, cob length without cob, cob weight with cob, cob weight without cob, cob diameter with cob, and cob diameter without cob. No-tillage treatment gave the best results on plant height variables by 0.3%, number of leaves by 1.14%, leaf area by 0.42%, stem diameter by 0.27%, plant fresh weight by 1.46%, plant dry weight by 0.24%, cob length with cob by 1.51%, cob length without cob by 0.23%, cob weight with cob by 0.43%, cob weight without cob by 1.61%, cob diameter with cob by 41.90 mm, and cob diameter without cob by 0.2%.*

*Kasgot with different doses have an effect on plant fresh weight and plant dry weight. A dose of 15 t kasgot/ha gave the best results on plant fresh weight variables by 0.56%, plant dry weight by 0.76%, cob diameter with cob by 0.06%, and cob weight without cob by 0.37%. There was no interaction between tillage and kasgot dosage on growth and yield of purple corn.*

**Keyword :** *Purple corn, Tillage system, Kasgot*