

RINGKASAN

Produksi ubi jalar di Kabupaten Banyumas dalam beberapa tahun terakhir menunjukkan kecenderungan yang tidak stabil. Fluktuasi hasil panen ini menggambarkan adanya berbagai faktor yang memengaruhi produktivitas, seperti kondisi lingkungan, teknik budidaya, serta penggunaan pupuk dan varietas yang berbeda. Penelitian bertujuan untuk mengetahui pengaruh pupuk organik kambing dan sapi terhadap fisiologi dan hasil beberapa klon ubi jalar. Diharapkan dapat meningkatkan efisiensi pupuk NPK, memanfaatkan limbah ternak, dan mendukung budidaya ubi jalar berkelanjutan.

Penelitian ini dilaksanakan di Desa Bobosan, Kecamatan Purwokerto Utara, Kabupaten Banyumas, Laboratorium Agroekologi, Laboratorium riset, Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian dilaksanakan bulan September 2024 - Agustus 2025 dengan menggunakan Rancangan Acak Kelompok (RAK) faktorial yang terdiri atas dua faktor kombinasi. Faktor pertama adalah klon ubi jalar (U), yaitu U_1 = ubi jalar kuning, U_2 = Ubi jalar ungu, U_3 = ubi jalar putih. Faktor kedua adalah perlakuan pupuk organik (O), yaitu O_0 = tanpa pupuk organik, O_1 = pupuk organik sapi, O_2 = pupuk organik kambing. Perlakuan, masing-masing diulang sebanyak 3 kali, sehingga secara keseluruhan menghasilkan 27 unit percobaan. Data hasil pengamatan dianalisis secara statistik dengan taraf kepercayaan 95% untuk mengetahui pengaruh perlakuan. Analisis lanjutan dilakukan menggunakan uji Duncan's Multiple Range Test (DMRT) dengan taraf kepercayaan 95%.

Variabel yang diamati meliputi kerapatan stomata, lebar bukaan stomata, kadar klorofil daun, total padatan terlarut, jumlah ubi, bobot per ubi, bobot ubi per tanaman, diameter ubi, panjang ubi, indeks panen. Hasil penelitian menunjukkan aplikasi pupuk organik terbaik untuk meningkatkan kadar klorofil yaitu pupuk organik sapi. Sementara itu aplikasi pupuk organik menunjukkan hasil yang setara pada variabel total padatan terlarut, kerapatan stomata, jumlah ubi, bobot per ubi, bobot ubi per tanaman, diameter ubi, panjang ubi, dan indeks panen. Klon ubi jalar kuning memberikan hasil paling baik pada variabel jumlah ubi dan panjang ubi. Klon ubi jalar ungu menunjukkan hasil terbaik pada variabel total padatan terlarut, kerapatan stomata, diameter ubi, dan indeks panen. Klon ubi jalar putih memberikan hasil terbaik pada bobot per ubi. Sementara itu, klon ubi jalar menunjukkan hasil yang setara pada variabel kadar klorofil dan bobot ubi per tanaman.

SUMMARY

Sweet potato production in Banyumas Regency in recent years has shown an unstable trend. These fluctuations in crop yields reflect various factors that affect productivity, such as environmental conditions, cultivation techniques, and the use of different fertilizers and varieties. This study aims to determine the effect of goat and cow manure on the physiology and yield of several sweet potato clones. It is hoped that this will increase the efficiency of NPK fertilizers, utilize livestock waste, and support sustainable sweet potato cultivation.

This research was conducted in Bobosan Village, North Purwokerto District, Banyumas Regency, at the Agroecology Laboratory, Research Laboratory, Faculty of Agriculture, Jenderal Soedirman University. The research was conducted from September 2024 to August 2025 using a factorial randomized block design (RAK) consisting of two combination factors. The first factor was sweet potato clones (U), namely U1 = yellow sweet potato, U2 = purple sweet potato, U3 = white sweet potato. The second factor is organic fertilizer treatment (O), namely O0 = no organic fertilizer, O1 = cow organic fertilizer, O2 = goat organic fertilizer. Each treatment was repeated three times, resulting in a total of 27 experimental units. The observation data were statistically analyzed at a 95% confidence level to determine the effect of the treatment. Further analysis was conducted using Duncan's Multiple Range Test (DMRT) with a 95% confidence level.

The variables observed included stomatal density, stomatal aperture width, leaf chlorophyll content, total dissolved solids, number of tubers, weight per tuber, tuber weight per plant, tuber diameter, tuber length, and harvest index. The results showed that cow manure was the best organic fertilizer for increasing chlorophyll content. Meanwhile, the application of organic fertilizer showed equivalent results for the variables of total dissolved solids, stomatal density, number of tubers, weight per tuber, tuber weight per plant, tuber diameter, tuber length, and harvest index. The yellow sweet potato clone produced the best results for the variables of number of tubers and tuber length. The purple sweet potato clone showed the best results for the variables of total soluble solids, stomatal density, tuber diameter, and harvest index. The white sweet potato clone produced the best results for weight per tuber. Meanwhile, the sweet potato clones showed equivalent results for the variables of chlorophyll content and tuber weight per plant.