

RINGKASAN

Tanaman padi (*Oryza sativa*) merupakan tanaman penghasil beras yang menjadi sumber bahan pangan pokok bagi mayoritas masyarakat di Indonesia. Produksi beras rentan mengalami penurunan akibat luasan lahan yang tersedia cenderung berkurang akibat alih fungsi lahan pertanian menjadi non pertanian. Oleh karena itu, diperlukan peningkatan kuantitas dan kualitas beras sebagai upaya dalam meningkatkan ketahanan pangan, melalui intensifikasi dan ekstensifikasi pertanian, termasuk penggunaan bibit unggul dan perluasan areal tanam. Usaha tersebut dapat dilakukan melalui pengoptimalan fungsi lahan kering dan budidaya tanaman padi gogo. Intensifikasi pertanian juga perlu didukung dengan penggunaan pupuk untuk meningkatkan produksi. Penelitian tentang tanaman padi varietas baru diperlukan untuk mengetahui potensi hasil di bermacam kondisi lingkungan. Penelitian ini bertujuan untuk 1) mengetahui pengaruh aplikasi pupuk NPK terhadap pertumbuhan dan hasil tanaman padi gogo varietas Inpago Unsoed Protani, 2) mengetahui pengaruh aplikasi pupuk kandang sapi terhadap pertumbuhan dan hasil tanaman padi gogo varietas Inpago Unsoed Protani, dan 3) mengetahui pengaruh interaksi antara aplikasi pupuk NPK dan pupuk kandang terhadap pertumbuhan dan hasil tanaman padi gogo varietas Inpago Unsoed Protani.

Penelitian ini dilakukan secara eksperimental dengan menanam tanaman padi varietas Inpago Unsoed Protani di lahan percobaan Laboratorium Agronomi Fakultas Pertanian Universitas Jenderal Soedirman yang berlokasi di Desa Kedungrandu, Kecamatan Patikraja, Kabupaten Banyumas, serta di Laboratorium Agrohortikultura di Fakultas Pertanian Universitas Jenderal Soedirman. Penelitian dilaksanakan dari bulan Juni hingga bulan Desember 2023. Penelitian dilakukan dengan tahapan berupa persiapan lahan, penanaman, pemupukan, pemeliharaan, pengukuran, dan panen. Perlakuan yang digunakan terdiri dari kombinasi dua faktor, yaitu dosis pupuk NPK dan dosis pupuk kandang sapi, masing-masing terdiri dari tiga taraf. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, luas daun, bobot brangkas segar, bobot brangkas kering, jumlah anakan total, serapan unsur hara jaringan tanaman, jumlah malai per rumpun, jumlah gabah per malai, persentase gabah isi, bobot 1.000 butir, gabah, dan produksi gabah.

Hasil penelitian menunjukkan bahwa aplikasi pupuk NPK berpengaruh terhadap pertumbuhan dan hasil tanaman padi gogo varietas Inpago Unsoed Protani. Pengaruh pupuk NPK ditunjukkan pada seluruh variabel pertumbuhan dan variabel hasil, kecuali pada variabel serapan N, persentase gabah isi dan bobot 1.000 butir gabah yang tidak menunjukkan pengaruh. Aplikasi pupuk kandang sapi berpengaruh terhadap serapan N, P, dan K jaringan tanaman. Interaksi antara aplikasi pupuk NPK dan pupuk kandang berpengaruh terhadap serapan P dan K. Pengaruh perlakuan pupuk NPK dan pupuk kandang terhadap pertumbuhan dan hasil tanaman padi turut dipengaruhi oleh faktor lingkungan.

SUMMARY

Rice (*Oryza sativa*) is a rice-producing plant and a staple food for the majority of the Indonesian population. However, rice production is vulnerable to decline due to the decreasing availability of land, as agricultural fields are increasingly converted into non-agricultural areas. Therefore, it is essential to enhance both the quantity and quality of rice to improve food security, through strategies such as agricultural intensification and extensification, including the use of superior seeds and expansion of planting areas. Such efforts can be achieved by optimizing the use of dry land and upland rice cultivation. Additionally, agricultural intensification requires the support of fertilizers to boost production. Research on new rice varieties is needed to determine their yield potential under various environmental conditions. This research aims to 1) determine the effect of NPK fertilizer application on the growth and yield of the Inpago Unsoed Protani upland rice variety, 2) determine effect of cow manure application on the growth and yield of the Inpago Unsoed Protani upland rice variety, and 3) determine the interaction effect between NPK fertilizer and cow manure applications on the growth and yield of the Inpago Unsoed Protani upland rice variety.

This research was conducted experimentally by planting rice plants of the Inpago Unsoed Protani variety in the experimental field of the Agronomy Laboratory of the Faculty of Agriculture, Universitas Jenderal Soedirman, located in Kedungrandu Village, Patikraja District, Banyumas Regency, and in the Agrohorticulture Laboratory at the Faculty of Agriculture, Universitas Jenderal Soedirman. The research was conducted from June to December 2023. The research was carried out in stages, including land preparation, planting, fertilization, maintenance, measurement, and harvesting. The experiment involved two factors, the dose of NPK fertilizer and the dose of cow manure, each at three different levels. The observed variables included plant height, number of leaves, leaf area, fresh straw weight, dry straw weight, total tillers, nutrient uptake of plant tissue, number of panicles per clump, number of grains per panicle, percentage of filled grains, weight of 1,000 grains, grain yield, and grain production.

The results showed that the application of NPK fertilizer affects the growth and yield of the Inpago Unsoed Protani variety. The effect of NPK fertilizer was shown in all growth and yield variables, except in the variable of N uptake, percentage of filled grain and weight of 1,000 grains which did not show an effect. Application of cow manure affects the uptake of N, P, and K of plant tissues. The interaction between the application of NPK fertilizer and manure had an effect on P uptake and K uptake. The effect of NPK fertilizer and manure treatments on the growth and yield of rice plants was also influenced by environmental factors.