

RINGKASAN

Tanaman memerlukan unsur hara makro dan mikro agar pertumbuhan dan perkembangannya maksimal. Kebutuhan unsur hara makro dan mikro tersebut dapat dipenuhi melalui pengaplikasian pupuk lengkap, tetapi seringkali dalam proses budidaya tanaman hanya dilakukan pemupukan unsur hara makro dengan pupuk tunggal dan tidak dilakukan pemberian unsur hara mikro. Selain unsur hara, tanaman memerlukan hormon pertumbuhan agar hasil produksinya maksimal. Tanaman memiliki hormon endogen, tetapi seringkali tidak mencukupi untuk fase generatif tanaman. Oleh karena itu, perlu dilakukan pemberian hormon eksogen, salah satunya melalui zat pengatur tumbuh (ZPT). Penelitian ini bertujuan untuk mengetahui respon tanaman terhadap pupuk lengkap dan ZPT serta memperoleh cara pengaplikasian ZPT yang terbaik.

Penelitian ini dilaksanakan di *screenhouse* yang bertempat di Desa Karangduren, Kecamatan Bobotsari, Kabupaten Purbalingga mulai dari bulan Agustus 2023 hingga Februari 2024. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 8 kombinasi perlakuan, yaitu G0H0 = kontrol, G0H1 = ZPT 1 ml/l 4 kali aplikasi, G0H2 = ZPT 1 ml/l 8 kali aplikasi, G0H3 = ZPT 1 ml/l 12 kali aplikasi, G1H0 = pupuk lengkap 1 g/l, G1H1 = pupuk lengkap 1g/l + ZPT 1 ml/l 4 kali aplikasi, G1H2 = pupuk lengkap 1 g/l + ZPT 1 ml/l 8 kali aplikasi, dan G1H3 = pupuk lengkap 1 g/l + ZPT 1 ml/l 12 kali aplikasi. Analisis data menggunakan sidik ragam (ANOVA) dan uji lanjut DMRT pada taraf kesalahan 5%.

Hasil menunjukkan bahwa pemberian perlakuan berpengaruh nyata terhadap tinggi tanaman, jumlah tunas cabang, jumlah cabang produktif, luas daun total, jumlah buah total per tanaman, serta bobot buah segar per tanaman dan tidak nyata terhadap kadar klorofil total, umur berbunga, umur panen, serta jumlah buah per tanaman pada periode bunga pertama. Perlakuan pupuk lengkap 1 g/l + ZPT 1 ml/l 12 kali aplikasi (G1H3) memberikan hasil terbaik yaitu 80,1% meningkatkan jumlah buah total per tanaman dan 71,72% meningkatkan bobot buah segar per tanaman dibanding perlakuan kontrol, sehingga perlakuan tersebut direkomendasikan untuk meningkatkan produktivitas tanaman cabai rawit dan tanaman lainnya.

SUMMARY

Plants require macro and micro nutrients for maximum growth and development. The need for macro and micro nutrients can be met by applying complete fertilizer, but often in the plant cultivation process only macro nutrient fertilization is carried out with single fertilizer and micro nutrients are not provided. Apart from nutrients, plants need growth hormones to achieve maximum production. Plants have endogenous hormones, but these are often not sufficient for the generative phase of the plant. Therefore, it is necessary to administer exogenous hormones, one of which is through growth regulators. This study aims to determine the response of plants to complete fertilizers and growth regulators and to obtain the best method of applying growth regulators.

This research was conducted at the greenhouse located in Karangduren Village, Bobotsari District, Purbalingga Regency from August 2023 to February 2024. This study used a block random design with 8 treatment combinations, namely G0H0 = control, G0H1 = growth regulators 1 ml/l 4 times application, G0H2 = growth regulators 1 ml/l 8 times application, G0H3 = growth regulators 1 ml/l 12 times application, G1H0 = complete fertilizer 1 g/l, G1H1 = complete fertilizer 1 g/l + growth regulators 1 ml/l 4 times application, G1H2 = complete fertilizer 1 g/l + growth regulators 1 ml/l 8 times application, G1H3 = complete fertilizer 1 g/l + growth regulators 1 ml/l 12 times application. Data analysis used analysis of variance (ANOVA) and DMRT follow-up test at 5% error level.

The results showed that the treatment significantly affected plant height, number of branch buds, number of productive branches, total leaf area, total number of fruits per plant, and fresh fruit weight per plant and did not significantly affect total chlorophyll content, flowering age, harvest age, and number of fruits per plant in the first flowering period. Complete fertilizer treatment 1 g/l + ZPT 1 ml/l 12 applications (G1H3) gave the best results, namely 80.1% increasing the total number of fruit per plant and 71.72% increasing the weight of fresh fruit per plant compared to the control treatment so that this treatment is recommended to increase the productivity of cayenne pepper plants and other plants.