RINGKASAN

Jagung merupakan sumber pangan alternatif setelah padi dan gandum, dengan jagung manis (*Zea mays* saccharata Sturt) sebagai salah satu jenis yang banyak dikonsumsi. Permintaan jagung manis terus meningkat sehingga diperlukan upaya peningkatan produksi melalui manajemen budidaya yang tepat, salah satunya pemupukan. Zink (Zn) sebagai unsur mikro esensial berperan penting dalam berbagai proses fisiologis tanaman, termasuk aktivasi enzim, metabolisme, dan pertumbuhan tanaman. Penelitian ini bertujuan untuk menganalisis pengaruh pemberian pupuk zink terhadap pertumbuhan serta hasil tanaman jagung manis, serta menentukan dosis pupuk zink yang paling efektif dalam meningkatkan pertumbuhan dan produktivitas jagung manis

Penelitian dilaksanakan pada bulan Maret hingga Juli 2025 di Desa Rempoah, Kecamatan Baturraden, Kabupaten Banyumas. Penelitian dilakukan dengan rancangan acak kelompok (RAK) non faktorial yang terdiri atas 10 perlakuan dan 3 ulangan. Perlakuan meliputi kombinasi konsentrasi pupuk zink 50, 100, 150, dan 200% serta pupuk N-P-K 75 dan 100%. Variabel yang diamati terdiri dari tinggi tanaman, diameter batang, jumlah daun, warna daun, luas daun, bobot kering akar, bobot kering tanaman, panjang tongkol, diameter tongkol, diameter tongkol, bobot tongkol berkelobot, bobot kelobot, bobot tongkol per satuan luas. Data dianalisis menggunakan analisis ragam (ANOVA), dan apabila terdapat perbedaan nyata, dilanjutkan dengan uji DMRT (*Duncan's Multiple Range Test*) pada taraf 5%.

Hasil penelitian menunjukkan bahwa pemberian pupuk zink dan N-P-K meningkatkan pertumbuhan dan hasil jagung manis. Perlakuan 150% Zn + 75% N-P-K meningkatkan diameter batang, luas daun, dan warna daun dibandingkan kontrol, sedangkan 50% Zn + 100% N-P-K menghasilkan panjang tongkol dan bobot tongkol tertinggi dengan bobot tongkol berkelobot mencapai 0,45 kg, meningkat 18,42% dibandingkan kontrol dan 21,62% dibandingkan tanpa pemupukan Zn.

SUMMARY

Maize is an alternative food crop after rice and wheat, with sweet corn (*Zea mays saccharata* Sturt) being one of the most widely consumed types. The increasing demand for sweet corn necessitates improvements in production through proper crop management, particularly fertilization. Zinc (Zn), as an essential micronutrient, plays an important role in various plant physiological processes, including enzyme activation, metabolism, and plant growth. This study aimed to analyze the effect of zinc fertilization on the growth and yield of sweet corn and to determine the most effective zinc dose for enhancing sweet corn growth and productivity.

The study was conducted from March to July 2025 in Rempoah Village, Baturraden District, Banyumas Regency. The experiment employed a non-factorial Randomized Complete Block Design (RCBD) consisting of 10 treatments with three replications. The treatments comprised combinations of zinc fertilizer concentrations (50, 100, 150, and 200%) and N–P–K fertilizer rates (75 and 100%). Observed variables included plant height, stem diameter, number of leaves, leaf color, leaf area, root dry weight, plant dry weight, ear length, ear diameter, husked ear weight, husk weight, and ear weight per unit area. Data were analyzed using analysis of variance (ANOVA), and when significant differences were detected, Duncan's Multiple Range Test (DMRT) at the 5% significance level was applied.

The results of the study showed that the application of zinc and N–P–K fertilizers improved the growth and yield of sweet corn. The treatment of 150% Zn + 75% N–P–K increased stem diameter, leaf area, and leaf color compared to the control, while the treatment of 50% Zn + 100% N–P–K produced the highest ear length and ear weight. The ear weight with husk reached 0.45 kg, representing an increase of 18.42% compared to the control and 21.62% compared to the treatment without Zn fertilization.