

INSTISARI

Pemenuhan kebutuhan jagung di Indonesia belum mencapai 100% karena terjadi penurunan produksi pada beberapa tahun terakhir. Kondisi ini disebabkan penurunan luas panen jagung akibat manajemen produksi yang kurang tepat seperti penggunaan dosis pupuk yang berlebihan. Upaya peningkatan produktivitas dan efisiensi penggunaan lahan perlu dilakukan salah satunya dengan tumpangsari tanaman jagung dan kacang tanah dengan pengaturan baris kacang sehingga dapat berkontribusi dalam peningkatan efisiensi penggunaan lahan dan penyediaan nitrogen. Penelitian ini dilaksanakan pada lahan pertanian Maguwoharjo, Sleman, Yogyakarta dengan rancangan penelitian split plot pola pengacakan rancangan acak kelompok lengkap (RAKL). Seluruh data penelitian yang diperoleh dianalisis menggunakan analisis varian (ANOVA) yang dilanjutkan dengan uji Beda Nyata Jujur (BNJ) pada taraf 5%. Uji kontras ortogonal dilakukan untuk membandingkan hasil monokultur dengan tumpangsari. Hasil penelitian menunjukkan bahwa pengaturan 1 baris kacang tanah memberikan respon fisiologis, pertumbuhan dan hasil jagung yang paling baik diantara konfigurasi lainnya. Selain itu, pengurangan dosis pupuk urea sebesar 25% (262,5 kg/ha) tidak menurunkan sifat fisiologis, pertumbuhan dan hasil produksi jagung. Interaksi pada kombinasi perlakuan pengurangan dosis pupuk 25% (262,5 kg/ha) dengan pengaturan 1 baris kacang tanah menghasilkan pertumbuhan dan hasil jagung tertinggi.

Kata Kunci: tumpangsari, jagung, kacang tanah, pupuk urea, baris kacang tanah

ABSTRACT

Maize production in Indonesia has declined in recent years, resulting in an inability to fully meet increasing domestic demand. The decline is partly associated with a reduction in total harvested area, along with inefficient crop management practices including excessive nitrogen fertilizer application. Therefore, strategies to improve land use efficiency and optimize nitrogen utilization are required. Intercropping maize with peanut, combined with appropriate peanut row arrangements has potential to enhance land productivity and nitrogen availability within the cropping system. This study was conducted in Maguwoharjo, Sleman, Yogyakarta, Indonesia using a split – plot arrangement within a randomized complete block design (RCBD). The main plot consisted of different urea fertilizer rates, while peanut row arrangements were assigned to the subplots. Data were analyzed using analysis of variance (ANOVA), followed by the Honestly Significant Difference (HSD) test at the 5% significance level. Orthogonal contrast analysis was performed to compare monocropping and intercropping systems. The results demonstrated that the one row peanut arrangement consistently improved the physiological traits, growth performance, and yield of maize compared with the other row configurations. Moreover, a 25% reduction in the recommended urea fertilizer rate (262,5 kg ha⁻¹) did not negatively affect maize physiological responses, growth, or grain yield, indicating that this rate was sufficient to maintain maize productivity under intercropping conditions. A significant interaction was observed between urea fertilizer reduction and peanut row arrangement, where the combination of a 25% reduction in urea fertilizer and one row peanut arrangement (P2K1) resulted in the highest maize growth and yield.

Keywords: maize, peanut, intercropping system, urea fertilizer reduction, row arrangement.