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Efektivitas Tingkat Pemberian air terhadap Serapan N, Pertumbuhan Tanaman dan Hasil Jagung di Vertisol

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui Efektivitas Tingkat Pemberian Air Terhadap Serapan N, Pertumbuhan Tanaman dan Hasil Jagung di Vertisol. Penelitian ini dilaksanakan di Screen House Agroekoteknologi Universitas Trunojoyo. Terletak pada ketinggian ± 4 meter di atas permukaan laut (mdpl), dari bulan November hingga Februari 2022. Penelitian ini menggunakan 2 set penelitian yaitu perlakuan tingkat kadar air dengan 3 taraf perlakuan menggunakan Rancangan Acak Kelompok (RAK). Set pertama penelitian menggunakan varietas Hibrida dan set kedua menggunakan varietas Lokal. Perlakuan yang didapat yaitu hibrida Bisi-2, A1 (Varietas hibrida + air 100% kapasitas lapang), A2 (Varietas hibrida + air 80% kapasitas lapang), A3 (Varietas hibrida + air 60% kapasitas lapang), lokal Tambin A1 (Varietas lokal + air 100% kapasitas lapang), A2 (Varietas lokal + air 80% kapasitas lapang), A3 (Varietas lokal + air 60% kapasitas lapang). Hasil penelitian menunjukkan tingkat pemberian air 100%, 80%, dan 60% kapasitas lapang jagung hibrida Bisi-2 berpengaruh tidak nyata terhadap pH, N total, klorofil, kadar N tanaman, serapan N, dan protein. Perlakuan tingkat pemberian air 100% kapasitas lapang pada jagung hibrida Bisi-2 berpengaruh nyata terhadap tinggi tanaman pada umur 4 hingga 7 MST dengan nilai rerata 371,66 cm, luas daun pada umur 5 hingga 6 MST dengan nilai rerata 3073.66 cm²/tan, bobot kering tanaman dengan nilai rerata 92,01g, dan bobot biji per tanaman dengan nilai rerata 81,25. Tingkat pemberian air 100%, 80%, dan 60% kapasitas lapang jagung lokal Tambin berpengaruh tidak nyata terhadap pH, tinggi tanaman, luas daun, klorofil, serapan N, protein, bobot kering tanaman, dan bobot biji pertanaman. Perlakuan tingkat pemberian air 80% kapasitas lapang pada jagung lokal Tambin berpengaruh nyata terhadap N total dengan nilai rerata 0,29%. Perlakuan tingkat pemberian air 100% kapasitas lapang pada jagung lokal Tambin berpengaruh nyata terhadap kadar N dengan nilai rerata 1,66%.

Kata Kunci : serapan N, pertumbuhan, produksi, jagung hibrida Bisi-2, jagung lokal Tambin, vertisol

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The Effectiveness of Water Supply on N Uptake, Plant Growth and Corn Yield in Vertisol. Supervisor : Dr. Ir. Eko Murniyanto, M.P.

ABSTRACT

This study aims to determine the effectiveness of the level of water supply on N uptake, plant growth and corn yield in Vertisols. This research was conducted at Screen House Agroecotechnology Trunojoyo University. Located at an altitude of 4 meters above sea level (masl), from November to February 2022. This study used 2 sets of research, namely the treatment of water content with 3 levels of treatment using a Randomized Block Design (RAK). The first set of research used hybrid varieties and the second set used local varieties. The treatments obtained were Bisi-2 hybrid, A1 (hybrid variety + 100% water field capacity), A2 (hybrid variety + 80% water field capacity), A3 (hybrid variety + 60% water field capacity), local Tambin A1 (variety local variety + water 100% field capacity), A2 (local variety + water 80% field capacity), A3 (local variety + water 60% field capacity). The results showed that the level of water application of 100%, 80%, and 60% of field capacity of Bisi-2 hybrid corn had no significant effect on pH, total N, chlorophyll, plant N content, N uptake, and protein. The treatment of 100% field capacity of water application on Bisi-2 hybrid corn had a significant effect on plant height at the age of 4 to 7 WAP with an average value of 371.66 cm, leaf area at 5 to 6 WAP with an average value of 3073.66 cm²/tan, weight plant dryness with an average value of 92.01g, and seed weight per plant with an average value of 81.25. The level of water supply of 100%, 80%, and 60% of the field capacity of local maize Tambin had no significant effect on pH, plant height, leaf area, chlorophyll, N uptake, protein, plant dry weight, and seed weight. The treatment of water application level of 80% field capacity on local maize Tambin significantly affected the total N with an average value of 0.29%. The treatment of 100% field capacity of water application in local maize Tambin significantly affected the N content with an average value of 1.66%.

Keywords : N uptake, growth, production, Bisi-2 hybrid maize, Tambin local maize, vertisol