PENGARUH KEPADATAN POPULASI TANAMAN TERHADAP PERTUMBUHAN DAN HASIL JAGUNG PUTIH LOKAL

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INTISARI

Tanaman jagung merupakan komoditas pangan penting dengan tujuan utama dari budidaya untuk menghasilkan bulir hasil panen. Tujuan penelitian ini adalah mengetahui tingkat kepadatan tanaman yang memberikan pertumbuhan dan hasil serta biomassa terbaik pada tanaman jagung putih lokal. Penelitian dilaksanakan di Kebun Percobaan Universitas Mercu Buana Yogyakarta Unit II di Gunung Bulu, Sedayu, Bantul, Yogyakarta, pada ketinggian ± 100 meter diatas permukaan laut (dpl) dan jenis tanah vertisol. Pengamatan beberapa variabel dilakukan di Laboratorium Agroteknologi, Fakultas Agroindustri UMBY. Penelitian dilaksanakan pada bulan Oktober hingga Desember 2020. Eksperimen faktor perlakuan tunggal yakni kepadatan populasi tanaman dengan 4 aras perlakuan, yaitu 2 tan/lubang, 3 tan/lubang, 4 tan/lubang, dan 5 tan/lubang , disusun dalam Rancangan Acak Kelompok Lengkap (RAKL) dengan 3 ulangan. Jarak tanam yang digunakan adalah 70cm x 30cm. Variabel pertumbuhan yang diamati adalah tinggi tanaman (cm), jumlah daun (helai), diameter batang (mm), panjang dan lebar daun (cm), luas daun/tan (cm2), bobot segar serta bobot kering tanaman (gram). Variabel hasil meliputi panjang tongkol (cm), diameter tongkol (mm), bobot tongkol (gram), bobot biji per tongkol (gram), jumlah biji per tongkol, bobot 100 biji (gram), hasil tongkol per hektar (ton), hasil biji per hektar (ton), serta bobot biomassa (ton/ha). Data yang diperoleh dianalisis dengan *Analysis of Variance*, apabila terdapat beda nyata pada perlakuan dilanjutkan dengan uji *Duncan's Multiple Range Test* (DMRT) pada tingkat signifikansi α 5%. Hasil penelitian menunjukkan kepadatan populasi tanaman berpengaruh terhadap pertumbuhan dan hasil jagung putih lokal, namun tidak mempengaruhi biomassa per hektar. Kepadatan populasi 2 atau 3 tanaman/lubang menunjukkan pertumbuhan tanaman, komponen hasil, dan hasil lebih tinggi dibanding kepadatan 4 dan 5 tanaman/lubang.

Kata kunci: kepadatan populasi tanaman, pertumbuhan dan hasil, biomassa, jagung putih lokal

EFFECT OF PLANT POPULATION DENSITY ON THE GROWTH AND YIELD OF LOCAL WHITE CORN

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ABSTRACT

Corn is an important food commodity with the main purpose of cultivation to produce grain yields. The purpose of this study was to determine the level of plant density that provides the best growth and yield as well as biomass in local white corn plants. The research was carried out at the Experimental Field of Mercu Buana University Yogyakarta Unit II in Gunung Bulu, Sedayu, Bantul, Yogyakarta, at an altitude of ± 100 meters above sea level (asl) and the soil type was vertisol. Observations of several variables were carried out at the Agrotechnology Laboratory, Faculty of Agroindustry, UMBY. The study was carried out from October to December 2020. The single treatment factor experiment was plant population density with 4 treatment levels, namely 2 plants/hole, 3 plants/hole, 4 plants/hole, and 5 plants/hole, arranged in a Completely Randomized Block Design (RCBD) with 3 replications. The spacing used is 70cm x 30cm. The growth variables observed were plant height (cm), number of leaves (strands), stem diameter (mm), leaf length and width (cm), leaf area/plant (cm2), fresh weight and plant dry weight (grams). Yield variables included length of ear (cm), diameter of ear (mm), weight of cob (grams), weight of seeds per ear (grams), number of seeds per ear, weight of 100 seeds (grams), ear yield per hectare (tons), grain yield per hectare (tons), and biomass yield (tons/ha). The data obtained were analyzed by Analysis of Variance, if there was a significant difference in the treatment followed by Duncan's Multiple Range Test (DMRT) at a significance level of 5%. The results showed that the plant population density affected the growth and yield of local white corn, but did not affect the biomass per hectare. Population densities of 2 or 3 plants/hole showed higher plant growth, yield components, and yields than densities of 4 and 5 plants/hole.

Keywords: *local white corn , crop density, growth and yield, biomass*