

Intisari

Penelitian ini dilaksanakan pada bulan Maret – Juni 2015 di Kebun Percobaan Fakultas Pertanian Universitas Gadjah Mada, di Banguntapan, Bantul, Yogyakarta. Penelitian ini bertujuan untuk menentukan takaran kombinasi pupuk NPK dan pupuk organik alami diperkaya mikroba fungsional (POD) yang memberikan pertumbuhan dan hasil jagung optimal, dan mengetahui efektivitas POD dalam meningkatkan pertumbuhan dan hasil jagung. Perlakuan disusun dalam rancangan acak kelompok lengkap faktor tunggal dengan 3 blok sebagai ulangan. Faktor yang diuji berupa takaran kombinasi pupuk NPK (NPK majemuk + urea) dan POD yang terdiri atas 7 aras yaitu tanpa pupuk (kontrol), 300 kg/ha NPK + 250 kg/ha urea (NPK standar), 2 ton/ha POD (organik standar), 300 kg/ha NPK + 250 kg/ha urea + 2 ton/ha POD (NPK standar + organik standar), 225 kg/ha NPK + 187,5 kg/ha urea + 2 ton/ha POD ($\frac{3}{4}$ NPK standar + organik standar), 150 kg/ha NPK + 125 kg/ha urea + 2 ton/ha POD ($\frac{1}{2}$ NPK standar + organik standar) dan 75 kg/ha NPK + 62,5 kg/ha urea + 2 ton/ha POD ($\frac{1}{4}$ NPK standar + organik standar). Data pengamatan dianalisis menggunakan ANOVA dengan taraf signifikansi 5% dan apabila terdapat beda nyata dilakukan uji lanjut *Duncan Multiple Range Test* dengan taraf signifikansi yang sama. Hasil penelitian menunjukkan pertumbuhan dan hasil pipilan kering biji jagung optimal (6,12 ton/ha) dicapai oleh perlakuan 300 kg/ha NPK + 250 kg/ha urea (NPK standar). Takaran kombinasi pupuk 225 kg/ha NPK + 187,5 kg/ha urea + 2 ton/ha POD ($\frac{3}{4}$ NPK standar + organik standar) memberikan pertumbuhan dan hasil jagung (6,09 ton/ha) yang sama baiknya dengan takaran NPK standar. POD sebanyak 2 ton/ha yang dikombinasikan dengan $\frac{3}{4}$ NPK standar efektif meningkatkan pertumbuhan dan hasil jagung dengan nilai RAE mendekati 100%.

Kata kunci: jagung, pertumbuhan dan hasil, pupuk organik, RAE, takaran pupuk NPK

Abstract

This research was conducted on March to June 2015 at experimental field of Faculty of Agriculture, Universitas Gadjah Mada, located at Banguntapan, Bantul, Yogyakarta. The objectives of this research are to determine the combination of NPK fertilizers and enriched organic fertilizer (EOF) doses that give optimal growth and yield of maize, and to understand the effectiveness of EOF for promoting the growth and yield of maize. The research was arranged in randomized complete block design with three replications for each treatment. The treatments were combination of NPK fertilizers (NPK compound + urea) and EOF doses in 7 levels, i.e.: without fertilizer (control), 300 kg/ha NPK + 250 kg/ha urea (NPK standard), 2 ton/ha EOF (organic standard), 300 kg/ha NPK + 250 kg/ha urea + 2 ton/ha EOF (NPK standard + organic standard), 225 kg/ha NPK + 187,5 kg/ha urea + 2 ton/ha EOF ($\frac{3}{4}$ NPK standard + organic standard), 150 kg/ha NPK + 125 kg/ha urea + 2 ton/ha EOF ($\frac{1}{2}$ NPK standard + organic standard) and 75 kg/ha NPK + 62,5 kg/ha urea + 2 ton/ha EOF ($\frac{1}{4}$ NPK standard + organic standard). The data were analyzed by ANOVA ($P < 0,05$) and continued using DMRT at probability level of 5% if significantly different. The result showed that optimal growth and yield of maize (6,12 ton/ha) were attained by combination of 300 kg/ha NPK + 250 kg/ha urea dose (NPK standard). The growth and yield of maize (6,09 ton/ha) at combination of 225 kg/ha NPK + 187,5 kg/ha urea + 2 ton/ha EOF dose ($\frac{3}{4}$ NPK standard + organic standard) were as high as standard NPK. Combination of $\frac{3}{4}$ NPK standard + 2 ton/ha EOF promoted growth and yield of maize effectively with RAE value up to 100%.

Keywords: dose of NPK fertilizers, enriched organic fertilizer, growth and yield, maize, RAE