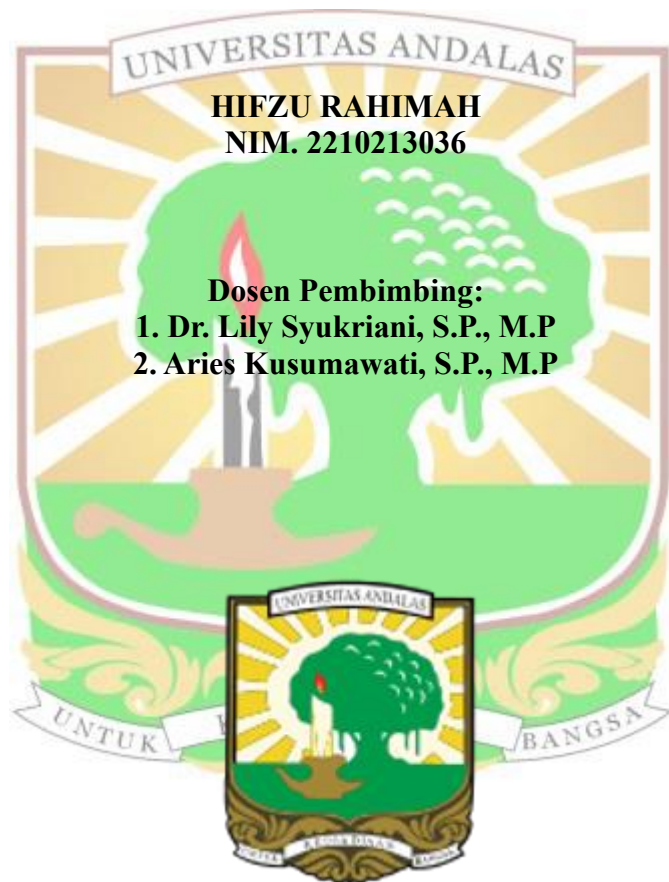


**RESPON PERTUMBUHAN DAN HASIL TANAMAN JAGUNG
(*Zea mays* L.) VARIETAS R-212 TERHADAP APLIKASI PUPUK
ORGANIK GUANO**

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PADANG
2026**

RESPON PERTUMBUHAN DAN HASIL TANAMAN JAGUNG (*Zea mays* L.) VARIETAS R-212 TERHADAP APLIKASI PUPUK ORGANIK GUANO

ABSTRAK

Jagung (*Zea mays* L.) merupakan komoditas pangan strategis di Indonesia, namun produksinya di Sumatra Barat, khususnya Kabupaten Solok, cenderung menurun. Salah satu kendala budidaya jagung di Kabupaten Solok adalah dominasi tanah Andosol yang memiliki ketersediaan fosfor rendah akibat terjerap oleh mineral alofan dan aluminium. Pupuk organik guano berpotensi menjadi solusi karena memiliki kandungan fosfor tinggi serta mampu memperbaiki sifat fisik, kimia, dan biologi tanah. Penelitian ini bertujuan untuk mengetahui pengaruh dan mendapatkan dosis terbaik pupuk organik guano terhadap pertumbuhan dan hasil tanaman jagung varietas R-212 pada tanah Andosol di Kabupaten Solok. Penelitian dilaksanakan di IkoNyoa Farms, Koto Gadang Guguak, Kecamatan Gunung Talang, Kabupaten Solok dengan ketinggian tempat ± 1.200 mdpl dan Laboratorium Teknologi Benih, Fakultas Pertanian, Universitas Andalas. Penelitian dilaksanakan pada bulan Februari-Juni 2026 menggunakan metode Rancangan Acak Kelompok (RAK) dengan 4 taraf dosis pupuk organik guano (0; 2,5; 5; dan 7,5 ton/ha) dengan 4 kelompok. Data hasil pengamatan dianalisis secara statistik menggunakan uji F taraf nyata 5%. Jika F hitung perlakuan lebih besar dari F tabel 5% maka dianalisis dengan uji lanjut DNMRT (*Duncan's New Multiple Range Test*) menggunakan aplikasi STAR (*Statistical Tool for Agricultural Research*). Hasil penelitian menunjukkan bahwa pemberian pupuk organik guano berbeda tidak nyata terhadap tinggi tanaman, jumlah daun, diameter batang, luas daun, umur muncul bunga, jumlah baris per tongkol, dan bobot 1000 biji, tetapi berbeda nyata terhadap bobot tongkol berkelobot, bobot tongkol tanpa kelobot, panjang tongkol, diameter tongkol, serta bobot pipilan kering per petak dan per hektar. Dosis pupuk organik guano 5 ton/ha memberikan hasil terbaik dengan bobot pipilan kering sebesar 5949,23 g per petak atau setara 14,87 ton/ha. Berdasarkan hasil tersebut dosis 5 ton/ha pupuk organik guano direkomendasikan untuk budidaya jagung varietas R-212 pada tanah Andosol di dataran tinggi.

Kata kunci: bobot pipilan kering, dosis, fosfor, Kabupaten Solok, tanah Andosol.

GROWTH RESPONSE AND YIELD OF MAIZE (*Zea mays* L.) VARIETY R-212 TO THE APPLICATION OF GUANO ORGANIC FERTILIZER

ABSTRACT

Maize (*Zea mays* L.) is a strategic food commodity in Indonesia, but its production in West Sumatra, particularly in Solok Regency, tends to decline. One of the constraints in maize cultivation in Solok Regency is the dominance of Andosol soil, which has low phosphate availability due to fixation by allophane minerals and aluminum. Guano organic fertilizer has the potential to be a solution because it contains high phosphate and can improve the physical, chemical, and biological properties of the soil. This study aimed to determine the effect and to obtain the best dosage of guano organic fertilizer on the growth and yield of maize variety R-212 on Andosol soil in Solok Regency. The research was conducted at IkoNyoya Farms, Koto Gadang Guguak, Gunung Talang District, Solok Regency, at an altitude of $\pm 1,200$ meters above sea level, and at the Seed Technology Laboratory, Faculty of Agriculture, Andalas University. The study was carried out from February to June 2026 using a Randomized Block Design (RBD) with 4 levels of guano organic fertilizer dosage (0, 2.5, 5, and 7.5 tons/ha) and four replications. The observation data were statistically analyzed using the F-test at a 5% significance level. If the calculated F-value of the treatment was greater than the 5% F-table value, it was further analyzed using Duncan's New Multiple Range Test (DNMRT) with the STAR (Statistical Tool for Agricultural Research) application. The results showed that the application of guano organic fertilizer were not significantly different on plant height, number of leaves, stem diameter, leaf area, days to flowering, number of rows per ear, and 1000-grain weight, but were significantly different on ear weight with husk, ear weight without husk, ear length, ear diameter, as well as kernel dry weight per plot and per hectare. The guano organic fertilizer dosage of 5 tons/ha gave the best result with kernel dry weight of 5949.23 g per plot or equivalent to 14.87 tons/ha. Based on these results, a dosage of 5 tons/ha of guano organic fertilizer is recommended for the cultivation of maize variety R-212 on highland Andosol soil.

Keywords: Andosol soil, dosage, kernel dry weight, phosphate, Solok Regency.