

## INTISARI

Produktivitas tanaman jagung sangat dipengaruhi oleh ketersediaan hara, khususnya nitrogen (N). Umumnya lahan pengembangan jagung di Indonesia defisiensi hara N sehingga diperlukan tambahan pupuk N (anorganik dan organik) agar tanaman tumbuh dan berproduksi secara optimal. Upaya yang dapat dilakukan yaitu penambahan komposisi pupuk Urea dan kompos Azolla, serta penggunaan varietas yang tepat untuk meningkatkan produksi. Penelitian ini dilakukan bertujuan untuk mempelajari pengaruh dan mendapatkan kombinasi komposisi pupuk Urea dan kompos Azolla sehingga dapat meningkatkan pertumbuhan dan hasil. Percobaan disusun menggunakan rancangan acak kelompok (RAK) faktorial. Faktor pertama adalah varietas jagung yang terdiri dari dua taraf: V1 (Varietas Bisma), V2 (BISI 2) dan faktor kedua adalah komposisi pemupukan yang terdiri dari lima taraf: P1 (100% urea : 0% kompos azolla), P2 (75% urea : 25% kompos azolla), P3 (50% urea : 50% kompos azolla), P4 (25% urea : 75% kompos azolla), P5 (0% urea : 100% kompos azolla). Variabel yang diamati berupa iklim mikro, karakter kimia tanah, sifat perakaran, nitrogen tanaman, sifat fisiologis, analisis pertumbuhan tanaman, dan komponen hasil dan hasil tanaman. Data yang diperoleh kemudian dianalisis varians (ANOVA). Apabila terdapat perbedaan, dilanjutkan dengan DMRT (*Duncan's Multiple Range Test*) pada  $\alpha = 5\%$ . Hasil penelitian menunjukkan bahwa kultivar Bisma pada pemberian komposisi Urea 75% dan kompos Azolla 25% mempunyai perakaran terbaik, 75 : 25 setara 150 kg/ha : 0,77 ton/ha sampai 50 : 50 setara 100 kg/ha : 1,53 ton/ha mempunyai serapan N terbaik, sedangkan kultivar BISI 2 mempunyai perakaran, serapan N tertinggi bila seluruhnya berupa pupuk Urea 100% atau setara Urea 200 kg/ha. Kultivar Bisma, pupuk Urea takaran 2,8 g/tanaman setara 200 kg/ha dapat digantikan dengan kombinasi takaran Urea dan kompos Azolla perbandingan 25 : 75 setara 50 kg/ha : 2,30 ton/ha tanpa menurunkan pertumbuhan dan hasil biji, dengan hasil biji tertinggi 45,63 g/tanaman. Kultivar BISI 2 memerlukan pemupukan seluruhnya berupa Urea dengan takaran 2,8 g/tanaman setara 200 kg/ha untuk mendapatkan hasil biji 168,00 g/tanaman. Penggunaan kultivar Bisma dengan rekomendasi komposisi pupuk 25 : 75 setara 50 kg/ha : 2,30 ton/ha dan BISI 2 dengan rekomendasi komposisi pupuk 100 : 0 setara 200 kg/ha : 0 ton/ha.

Kata kunci: Bisma, BISI 2, Jagung, kompos Azolla, pupuk Urea

## ABSTRACT

The productivity of the maize crop is strongly influenced by the availability of nutrients, especially nitrogen (N). In general, the fields for maize development in Indonesia are deficient in N nutrients. Thus, additional inorganic and organic N fertilizers are needed to enhance plant growth and yield. Efforts that can be made are used superior varieties and the addition of Urea fertilizer and Azolla compost with the right composition to increase production. This research was conducted to determine the effects of Urea and Azolla compost combination and their right composition to increase the growth and yield of high-yielding maize varieties. The experiment was arranged in a factorial randomized block design. The first factor was the maize varieties, consisting of V1 (Bisma) and V2 (BISI 2), while the second factor was the fertilizer composition, consisting of P1 (100% Urea: 0% Azolla compost), P2 (75% Urea : 25% Azolla compost), P3 (50% Urea : 50% Azolla compost), P4 (25% Urea : 75% Azolla compost), and P5 (0% Urea : 100% Azolla compost). The variables observed were microclimate, soil chemical character, root properties, plant nitrogen, physiological properties, plant growth analysis, and plant components and yields. The data obtained were then analyzed for variance (ANOVA) and tested with DMRT (Duncan's Multiple Range Test) at a significance level of 5%. The results showed that the Bisma cultivar with 75% Urea composition and 25% Azolla compost had the best roots, 75: 25 equivalent to 150 kg/ha : 0,77 ton/ha to 50: 50 equivalent to 100 kg/ha : 1,53 ton/ha had the best N uptake, while BISI 2 cultivar had roots, the highest N uptake if all of it was 100% urea fertilizer or equivalent to 200 Urea. kg/ha. Bisma cultivar, Urea fertilizer with a dose of 2.8 g/plant equivalent to 200 kg/ha can be replaced with a combination of Urea and Azolla compost in a ratio of 25: 75 equivalent to 50 kg/ha: 2.30 tons/ha without decreasing growth and yield of seeds, with the highest seed yield of 45.63 g/plant. BISI 2 cultivar requires complete fertilization in the form of Urea at a rate of 2.8 g/plant equivalent to 200 kg/ha to obtain a seed yield of 168.00 g/plant. The use of Bisma cultivar with recommended fertilizer composition of 25: 75 equivalent to 50 kg/ha: 2.30 tons/ha and BISI 2 with recommended fertilizer composition of 100: 0 equivalent to 200 kg/ha: 0 tons/ha.

Keywords: Bisma, BISI 2, Corn, Azolla compost, Urea fertilizer