

Effect of the Combination of Zeolite and Urea Fertilizer On the Growth and Production of Corn (Zea mays L.)

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ABSTRACT

Urea is a fertilizer that has volatile and hygroscopic properties so that plants cannot absorb nutrients optimally. One effort to overcome this problem is by adding zeolite to the soil. Zeolite is able to absorb and exchange ammonium into nitrate and release it slowly so that it suppresses urea loss due to leaching or evaporation. The aim of this study was to determine the effect of several doses of zeolite and urea and their combination on the growth and production of maize. This research was conducted from March to June 2021 in Wringin Village, Summersari district of Jember county, East Java Province of Indonesia. This study used a factorial randomized block design with 2 factors, namely zeolite dose and urea dose with 12 treatment combinations and 3 replications. The zeolite factor consisted of 4 levels, namely control 0 ton/ha, 400 kg/ha, 600 kg/ha, 800 kg/ha, while the urea factor consisted of 3 levels, namely 100 kg/ha, 200 kg/ha, 300 kg/ha. The results showed that the urea dose of 200kg/ha was able to significantly affect plant height and stem diameter. On the other hand, Zeolite at a dose of 800 kg/ha was able to affect plant height and dry seed weight of corn statistically. In general, the interaction between urea at a dose of 200 kg/ha and zeolite at a dose of 800 kg/ha was significantly able to affect the dry weight of the cobs and the weight of 100 seeds.

Keywords: *Corn, Urea, Zeolite*