

**Regulation of Nitrogen and Magnesium Balance to Increase
Corn Growth and Production (*Zea Mays L.*)**

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ABSTRACT

Corn is a commodity that needed as food and woof industry. However, in the cultivation process there are still obstacles, one of to is the lack of nutrient balance. so that the impact on the growth and production of corn is less than optimal. Therefore, it is necessary to add balanced nutrients to optimize the growth and production of corn plants. The mos or nutrients that's needed by corn are nitrogen and magnesium. This research was carried out for 4 months, from March to June 2021, at the Jember State Polytechnic. The experimental design was arranged using a factorial randomized block design consisting of doses of nitrogen and magnesium repeated 3 times. The nitrogen dose treatment using urea fertilizer consisted of 5 levels, namely 200 kg.ha⁻¹, 280 kg.ha⁻¹, 360 kg.ha⁻¹, 450 kg.ha⁻¹, 550 kg.ha⁻¹, while magnesium used MgCO₃ consists of 5 levels, namely 80 kg.ha⁻¹, 90 kg.ha⁻¹, 96 kg.ha⁻¹, 107 kg.ha⁻¹,114 kg.ha⁻¹. The results showed that using a dose of 360 kg.ha⁻¹ urea gave the best effect on the growth of corn plants, namely plant height (212.1 cm) and chlorophyll content (635.6 μmol/cm²). While the use of magnesium 96 kg.ha⁻¹ (MgCO₃) also showed the best effect on the growth of corn plants, namely plant height (210.6 cm). Therefore, using the best nitrogen dose of 360 kg.ha⁻¹ urea is due to the nature of the corn plant, which is greedy for nutrients so that the dose can meet the nutrient needs of corn plants. While the best dose of magnesium is 96 kg.ha⁻¹(MgCO₃) because the application of magnesium can improve the level of soil acidity so that it affects the growth of corn plants. The optimal balance dose of Mg and N, namely 27 kg Mg.ha⁻¹ and 165 kg N.ha⁻¹ with a ratio of 1:6, gave the best effect on the growth of corn.

Keywords: Leaf Chlorophyll, Mg-N Ratio, Nutrient Regulation.