

# **EFFECT OF HIPRO FERTILIZER AND PHONSKA ZA UREA FERTILIZER MIXTURE ON NPK GRUMUSOL NUTRIENT AVAILABILITY AND NUTRIENT ABSORPTION IN RICE**

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## **ABSTRACT**

Rice plants require macro nutrients, especially nitrogen (N), phosphorus (P), and potassium (K), the availability of which in the soil is generally insufficient for plants with high yields, so they are met by using inorganic fertilizers. HiPro is a high-tech fertilizer with the nutrients N, P, K, Ca, Mg, S, B, Cu, Zn, Fe, Mn and Mo with application through the vegetative part. This research aims to determine the effect of applying a mixture of Urea, Phonska, ZA and HiPro fertilizer on the NPK of Grumusol soil and the NPK uptake of rice plants. This research used a two-factor Completely Randomized Design (CRD). The first factor is the dose of HiPro fertilizer divided into 4 levels, namely P0: HiPro fertilizer 0 kg/ha P1: HiPro fertilizer 4 kg/ha, P2: HiPro fertilizer 8 kg/ha P3: HiPro fertilizer 12 kg/ha, and the second factor is the dosage of the fertilizer mixture (Urea: Phonska: ZA) (3: 5: 1) is divided into 3 levels, namely and N1: Recommended dose (Urea = 300 kg/ha: Phonska = 500 kg/ha, ZA = 100 kg/ha), N2 : 1/2 the recommended dose (Urea = 150 kg/ha, Phonska = 250 kg/ha, ZA = 50 kg/ha) and N3 : 1/4 the recommended dose (Urea = 75 kg/ha, Phonska = 125 kg/ ha, ZA = 25 kg/ha). The data was analyzed for diversity using ANOVA, if there were significant differences, it was continued with the DMRT test at the 5% level. The results of the research showed that the application of HiPro fertilizer and a mixture of Urea, Phonska, ZA fertilizer could have a real influence on soil available N, plant dry weight, and plant nutrient uptake, but had no real effect on soil pH, available K, and available P in grumusol soil. Then the dose of mixed fertilizer of urea, phonska, ZA N3: 1/4 of the recommended dose (Urea = 75 kg/ha, Phonska = 125 kg/ha, ZA = 25 kg/ha) and Hipro P2: 8 kg/ha is the optimal dose which is able to increase the nutrient adequacy of N, P, K and rice crop yields.

***Keywords: NPK Fertilizer, HiPro Fertilizer, NPK Uptake.***