ABSTRACT


Nitrogen (N), phosphorus (P), and potassium (K) are needed in a large amounts for plant growth and production of pineapple, however, exceed application may decrease the growth and production of pineapple. Therefore, the fertilization application must be based on soil nutrient status and plant requirements. Minus One Test was conducted to prove the potential of N, P and K nutrients as limiting factor for pineapple plant growth in Inceptisol-Darmaga, Inceptisol-Ciawi, Ultisol-Jasinga, and Andisol-Ciapus on pineapple. Soil test correlation of P and K nutrient was conducted to find the extraction method of P and K soil nutrient that was suitable for pineapple. Soil test calibration of P and K nutrient was conducted to determine the P and K soil nutrient status, and recommendation of P and K fertilizer dosages on each soil nutrient status. The N fertilizer experiment was conducted to determine the optimum dosage of N fertilizer for pineapple. The results showed that N, P, and K nutrients were limiting factors for plant growth of pineapple in Inceptisol-Darmaga, Ultisol-Jasinga, and Andisol-Ciapus soils, but in Inceptisol-Ciawi was N. The soil P extraction method for pineapple was Bray-1. The soil K extraction method suitable for pineapple was HCl 25%, Olsen, Bray-1, Bray-2, Mehlich, NH₄OAc pH 4.8 and NH₄OAc pH 7.0. The level of soil P available was high class (>20.67) ppm P₂O₅ (Bray-1). While soil K available was low class (<14), medium class (14-50), and high class (>50) ppm K₂O (Bray-1). Nitrogen and potassium absorption was increased by nitrogen application, but phosphorus absorption was decreased. Nitrogen, phosphorus and potassium absorption was increased by phosphorus and potassium application. The critical level of N, P and K in the pineapple leaves was 0.70%, 0.13%, and 1.71% of dry matter. The optimum dosage of N fertilizer for Inceptisol with 0.14% N for pineapple was 578 kg N ha⁻¹. The P fertilizer no recomenet in soil with has ≥20.67 ppm P₂O₅. The optimum dosage of K fertilizer for the soil with low class of K nutrient status was 634 kg K₂O ha⁻¹.

*Key words : minus one test, nutrient status ,extraction method, optimum dosage, critical level*