

## ABSTRACT

The growth and yield of crops, including rice, are determined by the availability of both macro and micro nutrients. The nutrient availability in irrigated rice fields is very dynamic and influenced by how the land is managed. This study aims to examine the distribution of macronutrients (N, P, K) and micronutrients (Mn, Fe) in irrigated paddy fields in Muara Batu District. The research was conducted in these irrigated paddy fields from February 2024 to June 2024 using a survey method. Sixteen soil samples were taken from four minipits, the minipit were created base on secondary irrigation chanel (400, 800, 1200, 1600 meters). All soil sample were analysis at Soil Science Laboratory Faculty of Agriculture universitas Malikussaleh and the Soil Science and Land Resources Department Laboratory at Faculty of Agriculture, Bogor Agricultural University. The results showed that average number of total-N were 0,09–0,14 %, average of available-P around 0,83–0,97 ppm (very low, exchangeable-K were 0,40-0,73 cmol/kg. Average of the micro nutrients content such as exchangeable–Mn were 22,64 -41,14 ppm, and exchangeable–Fe were 149,55–322,55 ppm.

Keywords: Plant Nutrition, Soil Fertility, Irrigation System, Paddy Field Management