Increasing productivity of newly opened paddy field in tidal swampy areas using a local specific technology

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Abstrak

Expansion of new paddy land for rice in the tidal area is still experiencing problems, especially their toxic concentrations of Fe which can affect soil productivity. Efforts to improve the productivity of the newly opened paddy fields of tidal swampland are with drainage and specific nutrient management. The purpose of this research is an effort to increase the productivity of land through drainage management and application of ameliorant against iron toxicity in rice at the newly opened tidal swampland. The experimental design used was a Randomized Block Design is repeated 5 times. The results showed that technology of 1 week drying and 1 week inundation, limed 2 t ha-1 and fertilized N 112.5 kg ha-1, P2O5 22.5 kg ha-1, K2O 67.5 kg ha-1 and organic materials by 5 t ha-1, can increase rice yields by 237% from 1.40 t ha-1 to 4.72 t ha-1 of dry milled grain and can reduce 50% of Fe in the soil content of 384 ppm to 192 ppm in the newly opened paddy fields of tidal swampland in dry season. While the rainy season, technology of 1 week drying and 2 week inundation, limed 2 t ha-1 and fertilized of N 86.25 kg ha-1, P2O5 30 kg ha-1, K2O 15 kg ha-1, and organic materials by 5 t ha-1, can increase rice yield 272 % from 1.21 t ha-1 to 4.50 t ha-1 of dry milled grain and can reduce 51.88% of Fe in the soil content of 1,168 ppm to 769 ppm.