

Effect of boiler ash produced from oil palm waste on the growth and yield of TR8 lowland rice

ABSTRACT

The increasing global population has led to a projected rise in food demand, creating concerns over food security. Kota Belud, the "rice bowl" of Sabah has a very acidic soil (3.66 pH). The suitable soil pH for growing rice is 5.5 to 6.5. This study aims to determine the best planting media formulation for the growth and yield of TR8 rice. The analysis revealed that 50 t ha⁻¹ boiler ash produced the highest mean chlorophyll content (26.98 SPAD), mean number of tillers per hill (23.40), and mean yield per pot (795.15 g m⁻²). In addition, boiler ash at 40 t ha⁻¹ produced the highest mean percentage of filled grain (88.69%), mean number of panicles (23.0), and the lowest mean percentage of unfilled grain (11.31%). On the other hand, the control treatment (without boiler ash) produced the highest mean flag leaf length (38.22 cm). This study showed that boiler ash at 50 t ha⁻¹ potentially improved vegetative growth and increased yield of TR8 lowland rice. Future study should aim to evaluate the impact of oil palm boiler ash on various soils type and rice varieties in a field experiment.