



Effect of Ash from different Agricultural Wastes on Soil Properties and Grain Yield of Maize (*Zea Mays* L) in Degraded Ultisol

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Abstract: Maize (*Zea mays* L) is an important cereal crop in southeast Nigeria but few data exist on appropriate organic amendments for its high production. A field study was conducted in 2016 and 2017 planting seasons to compare the effect of ash from burnt saw dust (BSD), burnt rice mill waste (BMW) and wood (WO) on soil properties and grain yield of maize. The BSD, WO and BMW were applied at 4 t ha⁻¹, respectively. There was significant increase in soil Ca, Mg, Na, K and cation exchange capacity in burnt agricultural waste amended plots relative to the control. The significant high difference in soil pH, organic matter, aggregate stability, available P, total N and total porosity were observed in amended plots compared to the control. Bulk density was significantly reduced in amended plots while the effect on dispersion ratio was not-significant. Similarly, significantly higher plant height and maize grain yield were observed in amended plots relative to the control. On the average WO gave the maximum improvement in soil and agronomic parameters. This resulted in WA being a better amendment than BMW and BSD for use in maize production.

Keywords: Ash, Soil properties, Crop production, Grain yield
