

Mafongoya PL, **Mugendi DN**, and Pedereira C 1995. Evaluation of *Leucaena leucocephala* as a source of N for maize. *African Crop Science Journal* 4:249-255.

ABSTRACT

Prunings of leucaena [*Leucaena leucocephala* (Lam.) De Wit] have long been regarded as a useful alternative to N fertilizer, but N use efficiency by crops is often low. The potential exists to synchronise nutrient release with crop nutrient demand through variation in the rate and placement of prunings. A 2x2x3 factorial experiment was conducted to evaluate the potential of leaves of leucaena to supply N to maize (*Zea mays* L.) plants grown in pots of soil (Grossarenic Paleudult) under glasshouse conditions. Factors tested were two rates of application (3 and 6 Mg ha⁻¹), two methods of placement (surface vs incorporation), and 3 levels of N fertilizer (0, 50, and 150 kg ha⁻¹ equivalent of urea in solution form). Surface applied prunings significantly increased maize shoot dry weight with increasing levels of N fertilizer. Although incorporation of prunings increased maize shoot dry weight, the incorporated treatments did not show any significant response to N fertilizer, indicative of adequate N supply from prunings. Both shoot and total dry weight significantly increased with increasing rates of prunings applied. Nitrogen recovery was increased by applying prunings together with N fertilizer. There was a higher N recovery with incorporation compared to surface application. Prunings applied at a rate of 3 Mg ha⁻¹ gave higher %N recovery than 6 Mg ha⁻¹. At the final harvest date, application of 6 Mg ha⁻¹ of prunings produced taller plants than 3 Mg ha⁻¹.