# Quality assessment of *Panicum maximum* Guinea A grown under a tree canopy of *Calliandra calothyrsus*

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A field experiment was conducted to explore the associative effects of *Panicum maximum* (Guinea A) grown in association with *Calliandra calothyrsus.* Planting of fodder grass (*P. maximum* Guniea A) in an existing *C. calothyrsus* (6 years old) plantation was done according to a line planting array. Guinea A was selected due to its natural abundance. Trees were pruned at 50 cm height above ground level before planting of grass.

Experimental plots were arranged in a Latin Square Design. The plot sizes were 3 X 15 m for each legume and grass. Both species were initially harvested at 3 months after planting of grass. Grass was cut at 10 cm and legume trees at 150 cm above ground level, respectively. During one harvesting cycle grass was harvested at 4 week intervals (3 times) while the trees were cut at 12 week intervals.

Grass grown with *C calothyrsus* increased the dry matter yield of grass (845 ± 23.3 g/ $m^2$/ 3 cuts) as compared with the grass in pure sward (813 ± 89.1 g/ $m^2$/ 3 cuts). Similarly total dry matter yields also higher in mixed sward (1573 ±113 g/ $m^2$/ grass 3 cuts and legume 1 cut) as compared with pure Calliandra (1163 ± 129 g/ $m^2$/ cut) and grass swards. Nitrogen percentage and nitrogen yield of grass increased with the legume. Total nitrogen yield was highest with *C. calothyrsus* (24.65 ± 1.4 g/ $m^2$/ 3 cuts) and lowest with pure grass (16.26 ± 2.77 g/ $m^2$/ 3 cuts). The ratio of edible and non edible portions of the legume was 1.37.

Organic matter content and nitrogen concentration in the soil were increased when grass was grown in association with *C. calothyrsus.*

Although, Guinea A is considered as wild type of *P. maximum*, the results of this study showed that, better performances in terms of quality (Nitrogen yield) could be obtained when grown in association with *C. calothyrsus.* However, further investigations are necessary to evaluate the long-term associative effects.