## B-134: The yield potential of six tropical pasture grasses under different shade levels

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Plantations and smallholder farming systems including wet zone home gardens are receiving much attention as potential lands for wider application of crop-livestock integration due to scarcity of arable lands. Shade is the main limiting factor for pasture production in such farming systems. Therefore the present study was conducted to investigate yield potential of 6 tropical grasses (*Axonopus compressus, Brachiaria brizantha, Brachiaria miliiformis, Panicum maximum* var. *trichoglume*, *Paspalum conjugatum* and *Stenotaphrum secundatum)* under 5 light levels (100%, 74%, 56%, 34%, and 18% of full sunlight). Spilt-plot randomized complete block design with 3 replicates was used. Light levels were considered as main plots while species as sub plots. Mean dry matter (DM) yield per harvest was computed over 3 harvests (frequency of defoliation was 8 weeks).

*A. compressus* gave higher yield in light transmission range between 74%-56%, compared to that in full sunlight. *B. brizantha* did not show significant decrease in yield with reduced light intensity up to 56%. *B. miliiformis* showed similar result up to 74% light level.

*B. brizantha* is suitable to grow under the tree crops where the light transmission is not less than 56%, while *B. miliiformis* is suitable for less shady (light level > 74%) conditions. DM yield of *P. maximum* was reduced by 7%, when the light transmission level was reduced from 100% to 74%. Therefore, *P. maximum* is not suitable for shade conditions. DM yields of *P. conjugatum* and *S.secundatum* have consistently decreased with decreasing light levels. DM yields of all species were low when the light transmission level was below 34%. Therefore, no grass species could be recommended to grow below 34% light level.