

**B-112 Productivity of *Panicum maximum* cv. VRI 435, enhanced by cutting height and association with legume trees**

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A field trial was conducted to compare the productivity and feeding value of *Panicum maximum* cv. VRI 435, when grown as pure and mixed swards with *Gliricidia sepium* and *Erythrina lithosperma*. The effect of 2 cutting heights (10 and 15 cm above ground level) on the dry matter yields, relative yields and nutritive value of herbage on different sward types were investigated. Grasses were harvested at 4-6 week frequencies and legume trees were lopped at 12 week frequencies. The lower cutting height (10 cm) increased the annual dry matter yields of grass sward, both pure and in association. Grass nitrogen content of pure swards was also favourably affected ( $p < 0.05$ ) by the lower cutting height. (1.26% and 1.00% at 10 and 15 cm heights respectively). This was due to the strong competitiveness of grass for soil nitrogen and was probably regulated by the high nitrogen demand for growth, when the sward is defoliated at a lower height.

However, the above differences in nitrogen contents were only apparent for mixed grass swards (1.53% and 1.5% with *G. sepium* and 1.32% and 1.38% for *E. lithosperma* at 10 and 15 cm heights respectively). Grass grown in association with trees, out-yielded the pure swards in terms of both annual dry matter ( $p < 0.05$ ) and nitrogen content ( $p < 0.05$ ). The relative yields of grass in both mixed swards were higher than 0.5 indicating, an advantage for grass in association over grass in monoculture. Hence, the nitrogen advantage for associate grass in mixed swards would have reduced the soil nitrogen demand.

The advantage of mixing *P. maximum* cv. VRI 435, with *G. sepium* or with *E. lithosperma* was to improve the yield and nutritive value of VRI 435. It is concluded that lower cutting height would improve the yield and quality of VRI 435.