

## Practical Abstracts from Tropical Grasslands Vol 37 (1) March 2003

**The response of *Panicum maximum* to a simulated subcanopy environment. 2 Soil x shade x water interaction** – by Peter Durr and J. Rangel, on pages 1-10.

While trees generally have an adverse effect on the grass growing under their canopy, sometimes they can be beneficial. Guinea grass was grown under variable shade and water stress. Grass production was less reduced but less so (higher water use efficiency) with soil from under a raintree (*Samanea saman*). This suggests that better grass growth under trees in a subhumid climate is due to increased soil fertility- but only under moderate shade levels.

**Nitrogen fixation and growth of cowpea (*Vigna unguiculata*) and yam bean (*Pachyrizus erosus*) in a sodic soil as affected by gypsum and sulphur inoculated with *Thiobacillus* and gypsum and rhizobial inoculation** – by Newton Stamford, A.D.S. Freitas, D.S. Ferraz, A. Montenegro and C.E.R.S. Santos, on pages 11-19.

In a saline Brazilian soil, yam bean grew much better when either gypsum or inoculated sulphur were applied, and this was improved with commercial rhizobial inoculation. On the other hand, cowpea was less tolerant of salinity and grew poorly. It responded to the soil ameliorants, especially to lower levels of sulphur, but was adversely affected by the increased acidity from higher levels of sulphur. *Thiobacillus* would be furnished to farmers in coal or peat inoculants following further work.

**Evaluation of forage legumes and grasses on seasonally waterlogged sites in north-east Thailand** – by Mike Hare, C. Kaewkunya, P. Tatsapong and M. Saengkham, on pages 20-32.

Lee American joint vetch produced over 14 t/ha of dry matter at one site, but it and other legumes did not persist beyond the second wet season. Perennial stylo (CIAT 184) persisted only in places that were not deeply waterlogged. No legumes performed well enough to be recommended for seasonally waterlogged sites under repeated frequent cutting.

Ubon paspalum (*Paspalum atratum*), plicatum and Splenda setaria were the best grasses on deeply waterlogged sites. Purple guinea grass produced more than 30 t/ha in a 6-month wet season on less waterlogged sites. Ruzi grass, signal grass and Jarra digit grass grew well on sites that did not become inundated with water.

**Managing rhodes grass (*Chloris gayana*) cv. Callide to improve diet quality 1. Effects of age of regrowth, strip grazing and mulching** – by Wayne Ehrlich, Tom Cowan and Kevin Lowe, on pages 33-44.

A paddock of irrigated, nitrogen-fertilised Callide Rhodes grass was open grazed on a 2-week cycle or grazed on a 2, 4 and 6-week daily strip grazing rotation. In a second experiment, 2-paddock two-weekly open grazing with and without mulching (slashing) was compared with a 28-day rotational cycle with and without mulching after grazing.

Overall the amount of pasture available increased as the grass regrew but this did not affect leaf quality. Mulching reduced yield by 50% but resulted in higher protein and lower fibre.

Milk yield was not affected by the age of regrowth; it was increased by mulching strip-grazed pastures but reduced if mulching significantly lowered the amount of leaf available.

These pastures can support up to 3.7 cows/ha but radical differences in grazing management resulted in only small differences in animal production. Under strip grazing, the costs of mulching reduced marginal returns from \$ (AUD)145/ha to \$66/ha.

**Managing rhodes grass (*Chloris gayana*) cv. Callide to improve diet quality 2. Effects of stocking rate and irrigation frequency** – by Wayne Ehrlich, Tom Cowan and Kevin Lowe, on pages 45-52.

Nitrogen-fertilised Callide Rhodes grass in south-east Queensland were stocked at 3.5, 5.25 and 6.1 cows/ha from January to May and irrigated every 2 or 4 weeks. Although the amount of pasture decreased at the higher stocking rates, milk yield per cow was unaffected at 16.6 kg/day. However, at the higher stocking rate, the cows lost weight. Less frequent and lower volume of irrigation resulted in lower levels of soil water, but did not affect milk production until the last 3 weeks of the trial.

That the pastures could maintain growth with half the irrigation water suggests that efficiencies may be gained with closer monitoring of soil and pasture. Irrigating every 4 weeks, grazing at 6 week rotations and stocking at 3.5 cows/ha comprises the most efficient use of tropical grass pastures in late summer and autumn.

**Current range condition in southern Ethiopia in relation to traditional management strategies: the perceptions of Borana pastoralists** – by Ayana Angassa and Fekadu Beyene, on pages 53-59.

Traditionally the Borana pastoralists based their cattle husbandry for survival and income by maintaining genetically diverse stock and varying their herds to match local conditions. Recent increases in human and animal populations and decreasing availability of grazing land have increased grazing pressures. The Borana pastoralists ranked lack of fire and drought as being responsible for the deterioration. Fire was traditionally used to control bush encroachment but under modern systems and with droughts, there is rarely sufficient fuel and firebreaks for an effective fire.

Ignoring the traditional knowledge of the indigenous Borana pastoralists during development programs has resulted in serious environmental degradation, loss of resilience and impact on the livelihood of the people. In any development endeavours, traditional values and knowledge should be included.