

## **Tropical Grasslands 37 (2)**

**Effect of stocking rates on animal gain, pasture yield and composition, and soil properties from setaria-nitrogen and setaria-legume pastures in coastal south-east Queensland**—by Dick Jones and Ray Jones, on pages 65-83.

The factors above were measured on pastures of Nandi setaria with Siratro or with Greenleaf desmodium or with 333 kg N/ha/yr at a range of stocking rates. Annual animal gains from all systems declined linearly as the stocking rate increased, but the legume-based pastures declined 2-3 times faster. All pastures produced the same gains over summer but the declines set in between May and October. The amount of legume in the pasture declined with stocking rate and as the years went by, but siratro was far more persistent than desmodium. Other grazing-tolerant grasses and native legumes increased at the higher stocking rates but did not produce much bulk.

Compared with the siratro-based pastures, the application of high rates of nitrogen fertiliser over a period of 20 years reduced topsoil pH, cation exchange capacity and exchangeable Ca, Mg and K, but increased organic carbon, nitrate nitrogen, exchangeable acidity, exchangeable aluminium and extractable manganese.

**The effect of frequency of milk allocation on milk production, pasture intake and behaviour of grazing cows in a subtropical environment**—by B.C. Granzin, on pages 84-93.

The daily allowance of a kikuyu grass pasture was offered in various allocations with a day, for example 75% in the late afternoon and the rest the following morning, or more evenly spaced during the night. In another study, cows received all their allowance of rye grass or prairie grass in the morning (07.30 hrs) or 66% in the morning and the rest in the late afternoon, or spread at different rates over the day. Frequency of feeding had little effect on milk production, pasture intake or grazing behaviour—with an average 424 minute spent grazing each day.

**A feeding strategy of combining tropical grass species for stall-fed dairy cattle**—by J.M.N. Bwire, Hans Wiktorsson and A.J. Mwilawa, on pages 94-100.

In the semi-arid areas of central Tanzania, mixtures of various native grasses were fed along with a concentrate supplement to penned dairy cows. A mixture of *Cenchrus ciliaris* and *Cynodon plectostachyus* produced most milk.

**Forage yield, nutritive value, feed intake and digestibility of three grass species as affected by harvest frequency**—by Ngo Van Man and Hans Wiktorsson, on pages 101-110.

The grasses tested on this acid sandy soil of southern Vietnam were elephant grass (*Pennisetum purpureum*) and cultivars 280 and I.429 of guinea grass (*Panicum maximum*). In all grasses, yield increased but quality declined with increasing length of cutting interval. The guinea grasses had higher yields and quality than elephant grass with cv. 280 best. Intakes by cross-bred Holstein heifers were also highest with cv. 280.

The frequency of cutting for optimum balance between yield and quality seems to be 6 weeks.

**Influence of seedbed preparation and grazing management on seed production for four tropical legumes in the establishment year**—by Cam McDonald, Dick Jones and Syd Cook, on pages 111-118.

Wynn cassia, siratro, Seca stylo and fine-stem stylo were sown into native speargrass (*Heteropogon contortus*) using different seedbeds—full preparation, various minimum till techniques and oversowing—during a series of low rainfall years. Only Wynn cassia consistently produced seed in the year of sowing, and then only in the fully cultivated seedbed. Early-sown Wynn cassia can drop 3000 seeds per square metre. In another study, Wynn cassia again produced the most seed followed by fine-stem stylo whereas Seca stylo and siratro produced very little. Surface sowing is likely to fail in dry years while min-till will result in a slower build-up of legume than after full cultivation. Pastures oversown using minimum till can be grazed immediately after sowing but should be destocked when the legumes start flowering.

**Nitrogen cycling in degraded *Leucaena leucocephala*-*Brachiaria decumbens* pastures on an acid infertile soil in south-east Queensland, Australia**—by S.T.M. Burle, Max Shelton and Scott Dalzell, on pages 119-128.

Forage and animal production from these heavily grazed pastures on soils unsuitable for leucaena were poor. Grazing cycled 65% of the N in the herbage but N fixed by leucaena contributed only 15 kg/ha over the 9-month period; 13 kg of this was cycled. Cattle retained 8% of the total N

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