

## Year-round grazing of beef cows on pangolagrass (*Digitaria decumbens* cv. Transvala) pasture in southern area of Japan

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**Introduction** The southern area of Japan (Okinawa) has a sub-tropical climate. In this area beef calf production is now based on year-round grazing on giant stargrass (*Cynodon aethiopicus* Clayton & Haylan). However, the numbers of beef cows in this area are increasing rapidly and a grass with higher productivity than giant stargrass is required. The objective of this experiment was to examine the possibility of using pangolagrass (*Digitaria decumbens* cv. Transvala) pasture in this area.

**Materials and methods** Japanese black cows were grazed on pangolagrass (Transvala) pasture all year round. The period from May to Nov. involved whole-day grazing and the period from Dec. to Feb. grazing only in daytime. Rotational grazing was based on 2-week rotations with a stocking rate of 6 cows/ha. Live weight and blood biochemical levels of the beef cows were measured every 30 d. Grass samples for chemical composition and stem density were collected every 30 d. The pasture was fertilised with 200 kg N, 60 kg P<sub>2</sub>O<sub>5</sub>, 84 kg K<sub>2</sub>O/ha per year.

**Results** The crude protein content of pangolagrass varied from 13.5% to 19.5% and was higher than that normally found in giant stargrass. The percentages of crude fibre and the organic b fraction in the cell wall (Ob) of pangolagrass varied from 29% to 41% and from 63% to 69% respectively (Table 1). These values were lower than those generally found in giant stargrass. Mean stem density of pangolagrass was 6818 (5325-8320)/m<sup>2</sup> and dry matter yield was 34.6 t/year, higher values than would be expected with giant star grass. Mean live weight gain of the beef cows was 66.3 kg (55.0-75.0) during pregnancy and blood biochemical levels changed normally through the year (Table 2).

**Table 1** Chemical composition (%) and stem density (number/m<sup>2</sup>) of pangolagrass (Transvala)

	Spring	Summer	Winter
Crude protein	17.9	13.5	19.5
Crude fibre	28.9	41.1	30.1
Ob	62.8	68.6	62.0
NFE	45.1	34.7	36.0
Stem density	5825	8320	5325

Ob:organic b fraction in cell wall

**Table 2** Blood biochemical levels of beef cows

	Summer	Winter
Total protein (g/dl)	7.4	7.5
Urea nitrogen (mg/dl)	12.3	18.9
Cholesterol (mg/dl)	98.3	115.3
3-OHBA (μmol/L)	337.5	292.5
GPT (IU/L)	21.8	19.1

3-OHBA:3-hydroxybutyric acid

GPT:glutamic pyruvic transaminase

**Conclusions** These results demonstrate that pangolagrass (Transvala) maintained high nutritive value and high productivity through the year in this area with the result that beef cows kept in good body condition and had good blood biochemical levels all year round. Pangolagrass (Transvala) is, therefore, a suitable grass for year-round grazing in this area.