Year-Round Grazing of Beef Cows on Pangolagrass (*Digitaria Decumbens* Cv.Transvala) Pasture in Southern Area of Japan

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The XX International Grassland Congress took place in Ireland and the UK in June-July 2005. The main congress took place in Dublin from 26 June to 1 July and was followed by post congress satellite workshops in Aberystwyth, Belfast, Cork, Glasgow and Oxford. The meeting was hosted by the Irish Grassland Association and the British Grassland Society.

Proceedings Editor: D. A. McGilloway

Publisher: Wageningen Academic Publishers, The Netherlands

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Keywords: year-round grazing, transvala, pangolagrass, beef cows

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. gazing 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_2O_5, 84 kg K_2O/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^2 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^2) 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-htdroxybutyric 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.