

EVALUATION OF GRASS FORAGES ON THE  
INTERMEDIATE SAVANNAHS OF MOBLISSA, GUYANA

C. Wickham and P. Osuji

RTB

CARDI

The Intermediate Savannas are located between 4° and 6° north latitude and between 57° and 57°30' west longitude. They lie about 96-144 kilometres from the coast at a height of some 25-30 metres above sea level and cover an area of approximately 9,842 square kilometres.

The area has a mean annual rainfall of 2000mm, the distribution of which is bimodal and there is considerable variation in the rainfall pattern from year to year. The general trend is that there are two wet and two dry seasons, viz:

- Long wet season - Mid April to Mid August
- Long dry season - Mid August to Mid November
- Short wet season - Mid November to End January
- Short dry season - Early February to Mid April

Mean annual temperature is 26°C with Diurnal fluctuation of up to 10°C. Highest temperatures of 34° have been recorded from August to November (corresponding with the long dry season). January, February and March are the coolest months with a mean temperature of 26°C.

Regional Trials B

Fifteen grass species were planted in June 1982 from locally available material. These species had established themselves and persisted over the years under the prevailing soil conditions (Table 1).

The parameters measured were: (i) - Dry matter yield during maximum and minimum rainfall, (ii) - Resistance to pests and diseases and (iii) - Persistence. Rainfall for the periods under review are given in Figures 1 and 2.

Andropogon gayanus (ex Antigua): although shown to be slow in establishment, has produced superior yields and persisted.

The Cynodons, C. dactylon and C. plectostachyus: seemed to be ill adapted to the prevailing acid soil conditions at Moblissa as evidenced by lack of vigour and pale green colour.

Table 1. - Physical and Chemical Characteristics of the "Brown Sand"  
Soils of Noblissa, Guyana

Depth cm	Particle size			Elec. Cond mmhos /cm	pH	Exch Acid	Extractable Bases				ECEC	Base Sat. %	Extr P	Extr. Micronutrients				
	Sand	Silt	Clay				Ca	Mg	k	Na				Total	Cu	Mn	Fe	Zn
	%						MEq/100ml soil						ppm					
0-12	93.3	2.3	4.4	0.00	4.6	0.44	0.00	0.12	0.02	0.05	0.19	0.63	30	18.90	0.06	0.0	340	0.4
12-20	92.7	4.1	3.2	0.00	4.5	0.24	0.00	0.00	0.03	0.00	0.03	0.27	11	21.00	0.60	0.0	700	0.6
20-40	90.1	5.9	4.0	0.00	4.7	0.32	0.00	0.08	0.04	0.00	0.12	0.44	27	16.80	0.80	0.4	720	0.8
40-80	88.4	7.7	3.9	0.00	4.9	0.36	0.10	0.12	0.03	0.10	0.35	0.71	49	8.40	0.60	0.0	400	0.4
80-120	85.3	10.3	4.4	0.00	5.0	0.16	0.00	0.00	0.03	0.18	0.21	0.37	57	0.00	0.40	0.0		0.7
120-185	82.6	6.1	11.3	0.00	4.9	0.00	0.20	0.04	0.03	0.00	0.27	0.27	100	0.00	0.60	0.8	1100	0.4
188-200	81.3	5.4	13.3	0.00	5.0	0.24	0.10	0.04	0.02	0.10	0.26	0.50	52	0.00	0.60	0.8	1040	0.4

Fig. 1. Monthly rainfall (mm) for evaluation period June 1982 - Dec. 1983

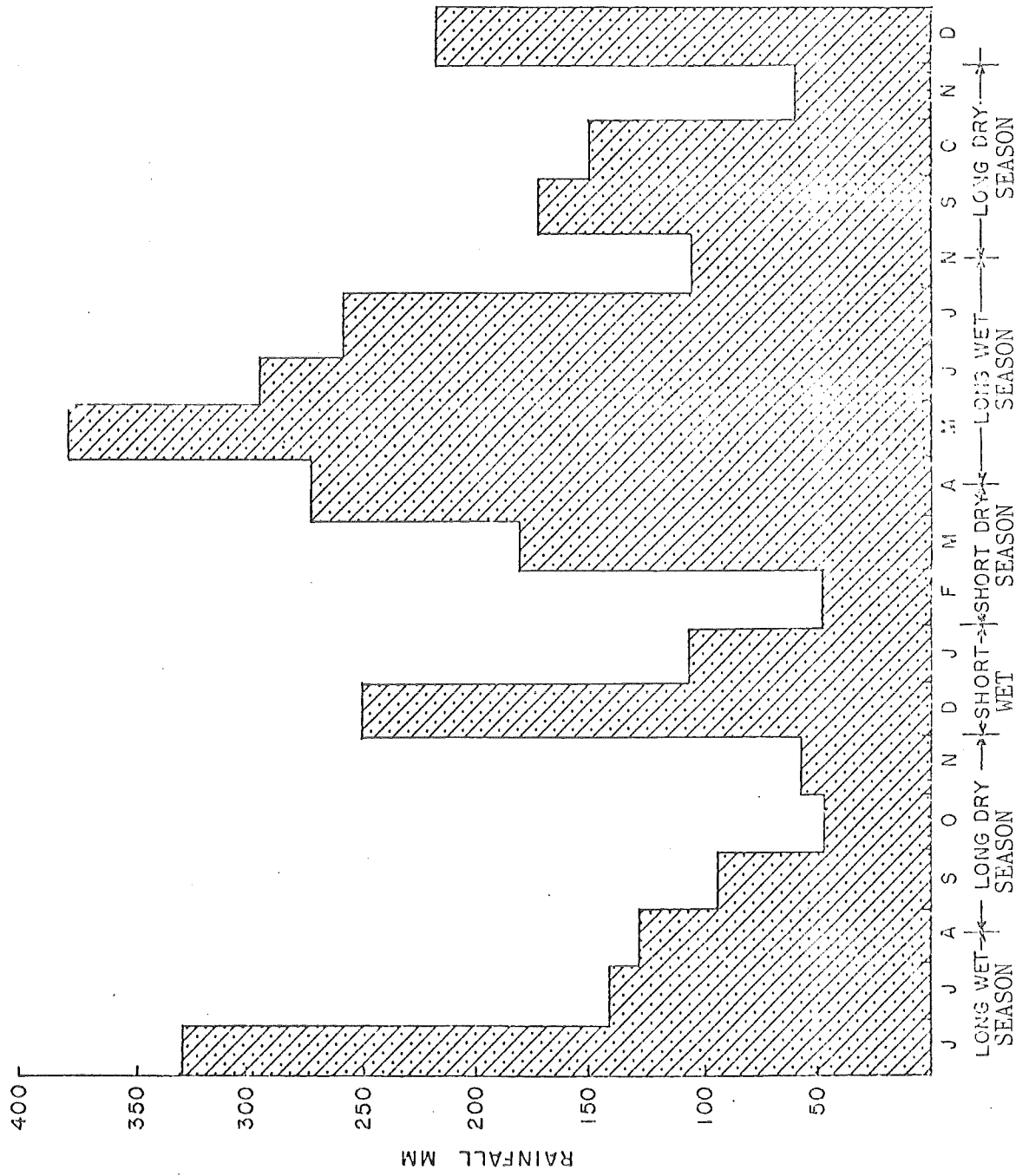
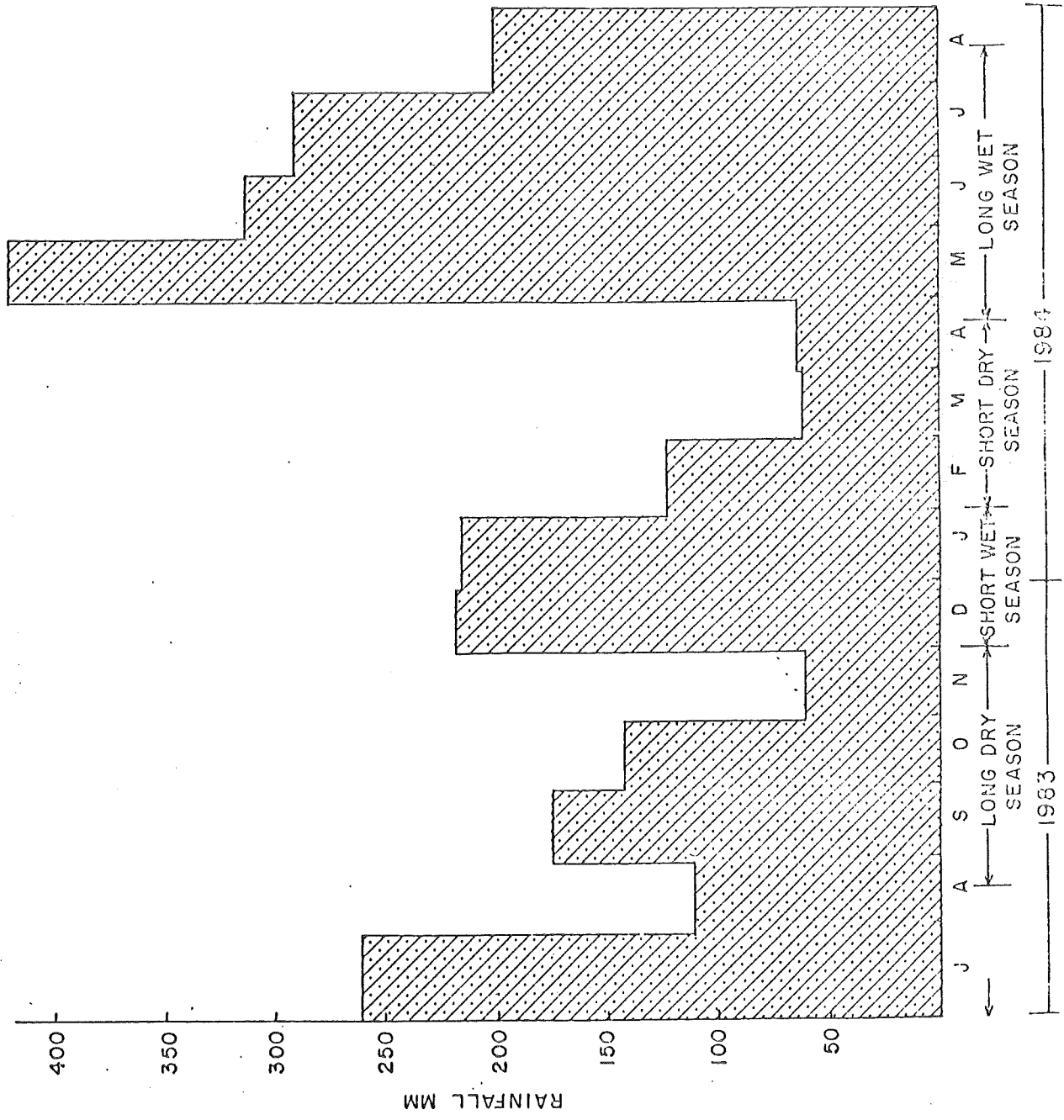


Fig. 2. Monthly rainfall (mm) for evaluation period July 1983 - August 1984



Brachiaria mutica and Echinochloa pyramidalis: have recorded good yields but seem to prefer the wetter parts of the year.

D. valida: never recorded good ground cover under the acid soil conditions and the very low fertiliser regimes used.

Melinis minitiflora: seemed to produce a lot of dead or dry material which contributes to the total dry matter yield, however this may not be grazable or useful. This problem is especially accentuated in the dry season.

Pennisetum purpurem, Brachiaria decumbens, Panicum maximum and B. huminicola: these have performed the best on the acid, infertile soils of Moblissa and significantly out-produced the other species tested. Plant population counts have indicated that the relatively high dry matter yields of these species had different bases - whereas B. huminicola recorded higher yields due to greater density of plants per unit area, the yields of the other species were due more to higher dry matter per plant.

Digitaria pentzii: has shown a decline in sward density, possibly indicating poor ability to adapt and produce consistently under the prevailing soil conditions.

Setaria anceps: while not showing significantly higher dry matter yields over D. pentzii, it did persist but at a lower level of production.

Digitaria decumbens: produced the lowest level of dry matter yields but it is not certain to what extent the stunt virus observed in all plots of this specie contributed to its relatively poor performance.

Brachiaria radicans: also produced relatively low yields and had indicated a strong sensitivity to fluctuations in rainfall. This observation might mitigate against the use of this specie in an all year round grazing situation.

Generally, dry matter yields have increased significantly with cutting age as was expected.

APPENDIX

Locally available Germplasm Screened on  
CARDI/IDRC Moblissa Project, Guyana

*Pennisetum purpurem*  
*Brachiaria decumbens*  
*Brachiaria humidicola*  
*Brachiaria radicans*  
*Brachiaria mutica*  
*Cynodon dactylon*  
*Cynodon plectostachyus*  
*Echinochloa pyramidalis*  
*Panicum maximum*  
*Setaria anceps*  
*Digitaria pentzii*  
*Digitaria decumbens*  
*Andropogon gayanus*  
*Melinis minutiflora*  
*Digitaria valida*